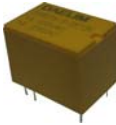
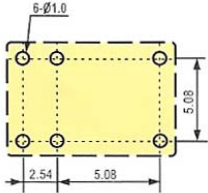
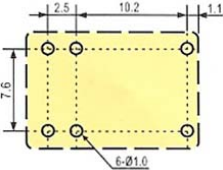
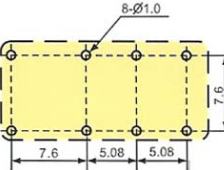
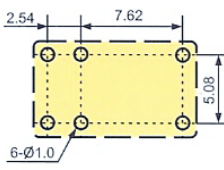


◆ Selection Chart

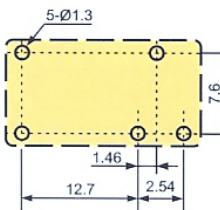
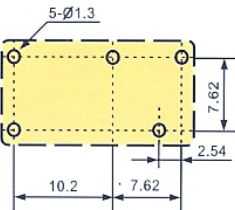
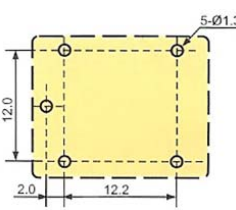
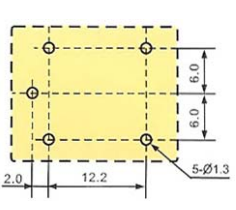
Signal Relay

Category	SIGNAL RELAY			
Product Model	DHRA	DHRS1	DHRS2	DHRB1
Product Photo				
Dimension W×D×H(mm)	10.3×7.4×10.0	15.6×10.6×11.7	20.3×10.0×11.5	12.4×7.4×10.2
Characteristic	· Microminiature, light · DIL pitch terminal 	· Microminiature · High sensitivity · DIL pitch terminal 	· 2 Form contacts · High sensitivity · Microminiature · DIP pitch terminal 	· Microminiature, width 7.4mm · High sensitivity 150mW 
Contact Data				
Contact Form	1C	1C	2C	1C
Contact Material	AuAg overlay, Ag Alloy	AuAg overlay, Ag Alloy	AuAg overlay, Ag Alloy	AuAg overlay, Ag Alloy
Contact Rating	1A 120VAC/24VDC	1A 120VAC/24VDC	1A 120VAC/24VDC	1A 120VAC/24VDC
Max. Switching Voltage	120VAC/30VDC	220VAC/30VDC	125VAC/30VDC	120VAC/30VDC
Max. Switching Current	2A	2A	2A	2A
Max. Switching Power	120VA/30W	120VA/30W	120VA/30W	120VA/30W
Min. Switching Load	5VDC 10mA	5VDC 10mA	5VDC 10mA	5VDC 10mA
Coil Data				
Coil Voltage	3~24VDC	3~24VDC	3~24VDC	3~24VDC
Coil Power(mW)	330, 450	200, 360	150, 200	150, 175
General Data				
Dielectric Strength: Between Contacts Between Coil and Contacts	500V 500V	750V 1,000V	750V 1,000V	500V 1,000V
Electrical Life (ops.)	100,000	100,000	100,000	100,000
Operating Temperature	-25℃ ~ +70℃	-25℃ ~ +70℃	-25℃ ~ +70℃	-40℃ ~ +70℃
Terminal Type	PCB Type	PCB Type	PCB Type	PCB Type
Mounting Hole Layout				
Weight	Approximately 1.7g	Approximately 4.0g	Approximately 5.0g	Approximately 2.2g
Model Comparison	· FUJITSU : FBR20	· OMRON : G2E · FUJITSU : FBR210 · HF : HM4100F	· OMRON : G5V-2 · FUJITSU : RY, RZ · HF : JRC-27F	· OMRON : G5V-1 · FUJITSU : SY · HF : JRC-23F
Page	12	15	18	21



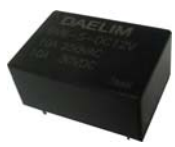
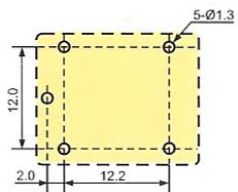
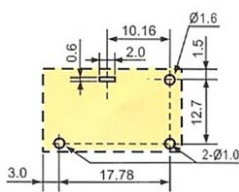
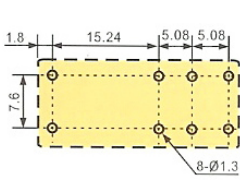
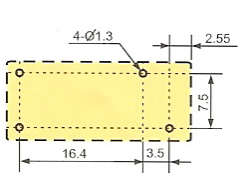
◆ Selection Chart

Power Relay

Category	POWER RELAY			
Product Model	DHRS3	DHRS3T	DHRS4	DHRS4T
Product Photo				
Dimension W×D×H(mm)	18.6×10.4×15.8	20.9×10.2×15.5	19.0×15.5×15.8	20.3×16.6×20.2
Characteristic	• Small size, width 10.4mm • Switching capacity 10A 	• Small size, width 10.2mm • Switching capacity 10A 	• Small size • TV-5 Rating, • 15A Contact current • UL F Class insulation 	• TV-8 Rating • 12A Contact current • Small size • UL F Class intulation 
Contact Data				
Contact Form	1A, 1C	1A, 1C	1A, 1C	1A, 1C
Contact Material	Ag Alloy	Ag Alloy	Ag Alloy	Ag Alloy
Contact Rating	10A 125VAC 5A 250VAC/30VDC	10A 125VAC 5A 250VAC/30VDC	10A 120VAC/24VDC(1C) 15A 120VAC/24VDC(1A)	10A 250VAC/24VDC 12A 120VAC/24VDC
Max. Switching Voltage	250VAC/30VDC	250VAC/30VDC	250VAC/24VDC	250VAC/24VDC
Max. Switching Current	10A	10A	15A	12A
Max. Switching Power	1,250VA/150W	1,250VA/150W	1,800VA/360W	2,500VA/240W
Min. Switching Load	5VDC 100mA	5VDC 100mA	5VDC 100mA	5VDC 100mA
Coil Data				
Coil Voltage	3~24VDC	3~24VDC	3~48VDC	3~48VDC
Coil Power(mW)	200, 450	200, 450	360, 450	360, 450, 720
General Data				
Dielectric Strength: Between Contacts Between Coil and Contacts	1,000V A:3,500V, C:2,500V	1,000V A:3,500V, C:2,500V	750V 1,500V	1,000V 1,800V
Electrical Life (ops.)	100,000	100,000	100,000	100,000
Operating Temperature	-40℃ ~ +85℃	-40℃ ~ +70℃	-30℃ ~ +85℃	-40℃ ~ +85℃
Terminal Type	PCB Type	PCB Type	PCB Type	PCB Type
Mounting Hole Layout				
Weight	Approximately 6.0g	Approximately 7.0g	Approximately 10.0g	Approximately 12.0g
Model Comparison	• TYCO : OJ/OJE • SC : 835 • HF : JZC-32F	• OMRON : G5Q • SC : 892 • HF : JZC-33F	• OMRON : G5LB • TYCO : ORW • HF : JQC-3FF	• OMRON : G5L • SC : 801H • HF : JQC-21F
Page	24	27	30	33

◆ Selection Chart

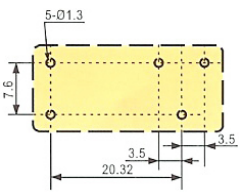
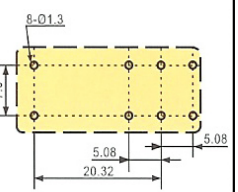
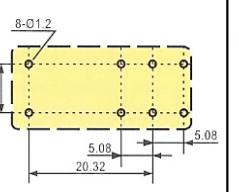
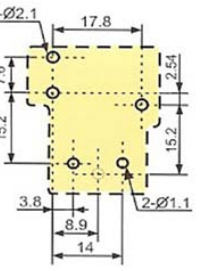
Power Relay

Category	POWER RELAY			
Product Model	DHRS4E	DV6	DHRM2	DHRM3
Product Photo				
Dimension W×D×H(mm)	21.5×15.5×17.5	23.0×16.1×10.2	29.0×12.6×20.6	24.4×10.4×25.0
Characteristic	• Small size, width 10.4mm • 10A Contact current • TV-5 Rating • UL F Class insulation 	• Flat type, low height • 15A Contact current • High sensitivity 200mW • PCB terminal • UL F Class insulation 	• Slim type with low height • 16A Contact current • TV-8 Rating • Creepage distance : 8mm • UL F Class insulation 	• Slim type with width 10.4mm • TV-5 Rating • 1 Form A contact • UL F Class insulation 
Contact Data				
Contact Form	1A, 1C	1A	1A, 1C	1A
Contact Material	Ag Alloy	Ag Alloy	Ag Alloy	Ag Alloy
Contact Rating	10A 250VAC/24VDC	10A 250AC/24VDC 15A 125VAC	TV-8 16A 250VAC/30VDC	TV-5 10A 250VAC/30VDC
Max. Switching Voltage	250VAC/24VDC	250VAC/24VDC	250VAC/30VDC	250VAC/30VDC
Max. Switching Current	12A	15A	16A	10A
Max. Switching Power	2,500VA/240W	2,500VA/240W	4,000VA/480W	2,500VA/300W
Min. Switching Load	5VDC 100mA	5VDC 100mA	5VDC 100mA	5VDC 100mA
Coil Data				
Coil Voltage	3~48VDC	3~48VDC	3~48VDC	3~48VDC
Coil Power(mW)	360, 450	200	540, 720	150, 250, 540
General Data				
Dielectric Strength: Between Contacts Between Coil and Contacts	1,000V 2,500V	750V 2,500V	1,000V 4,000V	1,000V 4,000V
Electrical Life (ops.)	100,000	100,000	100,000	100,000
Operating Temperature	-40℃ ~ +85℃	-30℃ ~ +70℃	-30℃ ~ +70℃	-40℃ ~ +70℃
Terminal Type	PCB Type	PCB Type, Quick Type	PCB Type	PCB Type
Mounting Hole Layout				
Weight	Approximately 11.0g	Approximately 9.0g	Approximately 13.0g	Approximately 10.0g
Model Comparison	• OMRON : G5LE • SC : 812H • HF : JZC-7FF	• OMRON : G5C(E) • NAIS : JV • SC : 201	• NAIS : JW • TYCO : OZ • HF : JQX-141FF	• OMRON : G5PA-1 • NAIS : LK • HF : JZC-36F
Page	36	39	42	45



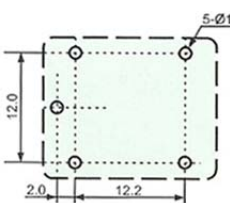
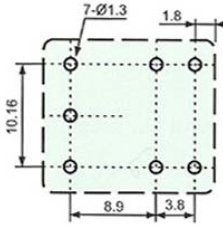
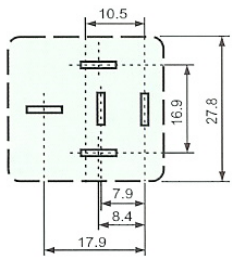
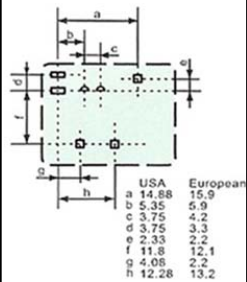
◆ Selection Chart

Power Relay

Category	POWER RELAY			
Product Model	DHCP1	DHCP2	DHCP3	DCMP7
Product Photo				
Dimension W×D×H(mm)	29.0×12.7×15.7	29.0×12.7×15.7	29.0×12.7×15.7	32.2×27.4×20.4
Characteristic	• Low height 15.7mm • Switching capacity 12A • 1 form C contact • Sensitivity 400mW • Insulation : 5KV/10mm 	• Low height 15.7mm • Switching capacity 8A • 2 form C contact • Sensitivity 400mW • Insulation : 5KV/10mm 	• Low height 15.7mm • Switching capacity 16A • 1 form C contact • Sensitivity 400mW • Insulation : 5KV/10mm 	• Switching capacity 30A • F Class insulation • PCB Type 
Contact Data				
Contact Form	1A, 1C	2A, 2C	1A, 1C	1A, 1C
Contact Material	Ag Alloy	Ag Alloy	Ag Alloy	Ag Alloy
Contact Rating	12A 250VAC/30VDC	8A 250VAC/30VDC	16A 250VAC/30VDC	30A 250VAC/24VDC(1A) 20A/15A 250VAC(1C)
Max. Switching Voltage	380VAC/30VDC	380VAC/30VDC	380VAC/30VDC	250VAC/24VDC
Max. Switching Current	12A	8A	16A	30A
Max. Switching Power	3,000VA/360W	2,000VA/240W	4,000VA/480W	7,500VA/720W
Min. Switching Load	5VDC 100mA	5VDC 100mA	5VDC 100mA	5VDC 100mA
Coil Data				
Coil Voltage	5~48VDC	5~48VDC	5~48VDC	5~48VDC
Coil Power(mW)	400	400	400	900
General Data				
Dielectric Strength: Between Contacts Between Coil and Contacts	1,000V 5,000V	1,000V 5,000V	1,000V 5,000V	1,500V 2,500V
Electrical Life (ops.)	100,000	100,000	100,000	100,000
Operating Temperature	-40℃ ~ +85℃	-40℃ ~ +85℃	-40℃ ~ +85℃	-30℃ ~ +85℃
Terminal Type	PCB Type	PCB Type	PCB Type	PCB Type
Mounting Hole Layout				
Weight	Approximately 13.0g	Approximately 13.0g	Approximately 13.0g	Approximately 27.0g
Model Comparison	• TYCO : RT • OMRON : G2RL • HF : JQX-115F	• TYCO : RT • OMRON : G2RL • HF : JQX-115F	• TYCO : RT • OMRON : G2RL • HF : JQX-115F	• OMRON : G8PT • TYCO : T9A • HF : JQX-105F-1
Page	48	51	54	57

◆ Selection Chart

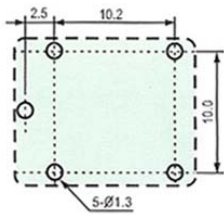
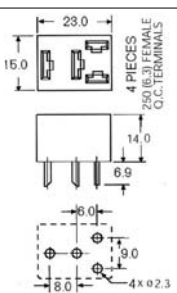
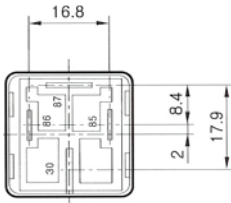
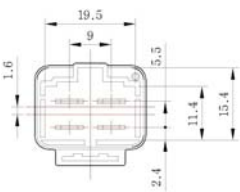
Automotive Relay

Category	AUTOMOTIVE RELAY			
Product Model	DCMA1	DCMA2	DCMA31	DCMA4
Product Photo				
Dimension W×D×H(mm)	19.0×15.5×15.8	17.5×15.0×19.5	27.6×27.8×24.6	26.5×22.0×22.3
Characteristic	• Small PCB type relay • Plastic sealed type	• Small PCB type relay • Plastic sealed or open type • Various contact forms	• Automotive relay • 40A continuous rating 85℃ • Bracket mounting	• PCB type relay • Plastic sealed or open type • Contact current 40A • USA footprint(8mm) • European footprint(11mm)
Contact Data				
Contact Form	1A, 1B, 1C	1A, 1C, 1U, 1V, 1W	1A, 1B, 1C	1A, 1C
Contact Material	Ag Alloy	Ag Alloy	Ag Alloy	Ag Alloy
Contact Rating	20A 14VDC(1A) 15A 14VDC(1C)	20A 14VDC(1A, 1C) 2×10A 14VDC(1U, 1V, 1W)	40A 14VDC(1A) 30A 14VDC(1C)	40A 14VDC(1A) 30A 14VDC(1C)
Max. Switching Voltage	75VDC	75VDC	75VDC	75VDC
Max. Switching Current	20A	20A	40A	40A
Max. Switching Power	280W	280W	560W	560W(1A), 420W(1C)
Min. Switching Load				
Coil Data				
Coil Voltage	6~24VDC	3~24VDC	6~24VDC	6~24VDC
Coil Power(mW)	800	1,100	1,600	1,600
General Data				
Dielectric Strength: Between Contacts Between Coil and Contacts	750V 1,000V	500V 1,000V	500V 500V	500V 500V
Electrical Life (ops.)	100,000	100,000	100,000	100,000
Operating Temperature	-40℃ ~ +85℃	-40℃ ~ +85℃	-40℃ ~ +85℃	-40℃ ~ +85℃
Terminal Type	PCB Type	PCB Type	PCB Type, Quick Type	PCB Type
Mounting Hole Layout				
Weight	Approximately 10.0g	Approximately 12.0g/8.0g(open)	Approximately 32.0g(No Shoulder) Approximately 36.5g(With Shoulder)	Approximately 21.0g/15.0g(Open)
Model Comparison	• FUJITSU : FBR160 • SC : 833HM • HF : JQC-3FF-M	• SC : 861 • HF : HFKM/KS	• TYCO : VF4 • OMRON : G8W • HF : HFV4	• TYCO : VKP • HF : HFKP
Page	60	62	65	68



◆ Selection Chart

Automotive Relay

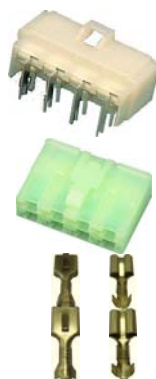
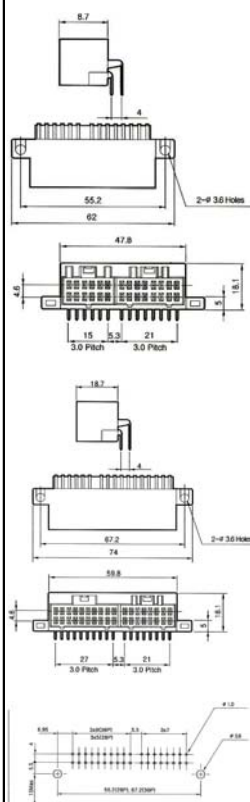
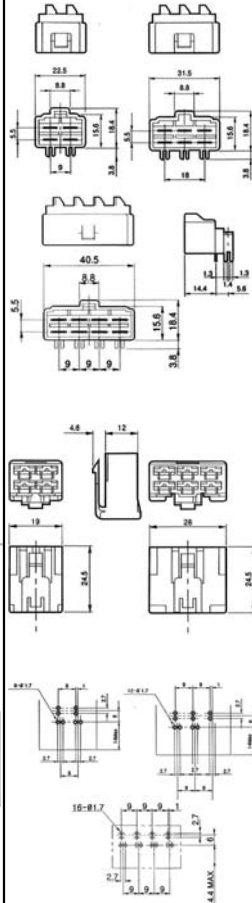
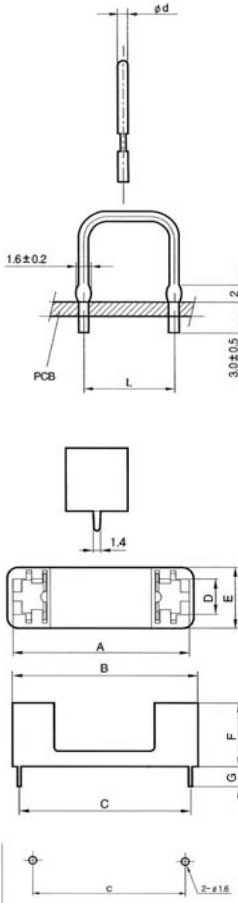
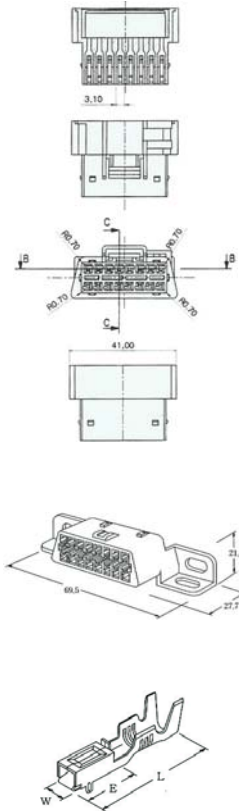
Category	AUTOMOTIVE RELAY			
Product Model	DCMA51	DMR502	MINI ISO(H)	POWER RELAY
Product Photo				
Dimension W×D×H(mm)	15.5×12.0×13.7	21.8×15.4×36.5	26.0×26.0×25.0	24.0×18.2×44.5
Characteristic	• Small volume • Inrush contact 60A • Contact gap : 0.3mm	• 1 Form A and 1 Form C Contact Arrangement • Used on air conditioner Electrical heater Remote-controlled TV, Automatic control and household electric device	• 70Amp 12VDC • 1 Form A Contact Arrangement • For direct connection with Cell Motors, Transmission, etc. Anti-Locking Brake System	• Applications : Motorcycles, mopeds, Compressor in automotive Air conditioners, Sunroof Halogen lamp, Power windows
Contact Data				
Contact Form	1A, 1B, 1C	1A, 1C	1A	1A
Contact Material	Ag Alloy	Ag Alloy	Ag Alloy	Ag Alloy
Contact Rating	20A 14VDC	30A / 40A 12VDC 20A 24VDC	70A 12VDC	20A 12VDC
Max. Switching Voltage	16VDC	28VDC	12VDC	
Max. Switching Current	35A	20A	70A	20A
Max. Switching Power	280W	560W	840W	
Min. Switching Load				
Coil Data				
Coil Voltage	6~24VDC	12, 24VDC	12VDC	12VDC
Coil Power(mW)	600, 800	1,600	2,500	1,400
General Data				
Dielectric Strength: Between Contacts Between Coil and Contacts	500V 500V	500V 500V	750V 1,000V	750V 1,000V
Electrical Life (ops.)	100,000	100,000	100,000	100,000
Operating Temperature	-30℃ ~ +85℃	-40℃ ~ +80℃	-40℃ ~ +80℃	-35℃ ~ +80℃
Terminal Type	PCB Type	PCB Type	PCB Type	PCB Type
Mounting Hole Layout				
Weight	Approximately 6.0g	Approximately 18.0g	Approximately 31.0g	Approximately 25.0g/28.0g(BK)
Model Comparison	• FUJITSU : FBR51 • OMRON : G8QN • HF : HFKW			
Page	70	72	74	76

Wire To Board Connectors

DAELIM ELECTRONICS CO.,

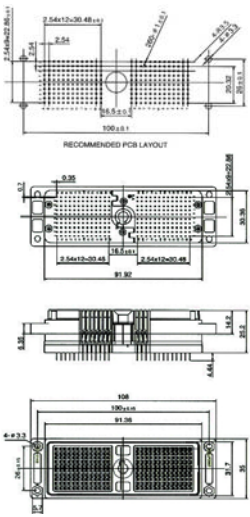
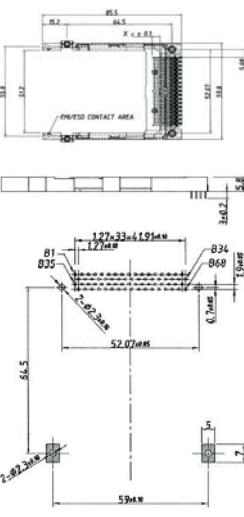
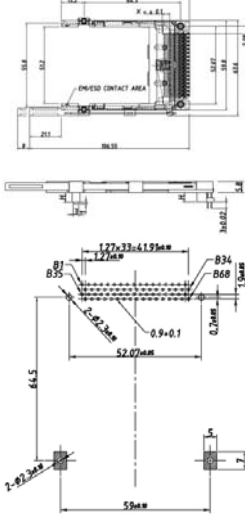
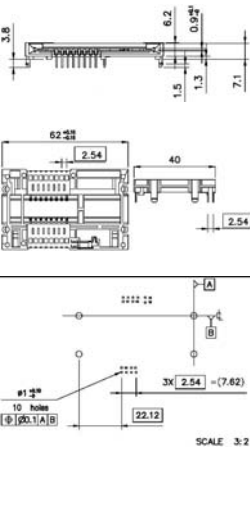
◆ Selection Chart

Wire To Board Connectors/Resistor Sensors/Fuse Holders

Category		WIRE TO BOARD CONNECTORS / RESISTOR SENSORS / FUSE HOLDERS			
Product Model		DLI Series	250S Series	Resistor Sensors / Fuse Holders	DLH-18P Housing
Product Photo					
Material	Housing	Nylon66	Nylon66	<Fuse Holders> • BASE : Nylon66 • Fuse Clip : Brass / Tin Plate • Current Rating : 5A, 250VAC	• Application : Unit • Connector Material : PBT • Contact Resistance : Over DC500V 100MΩ • Dielectric Strength : 1,000VAC (min) • Temperature Range : -40℃ ~ +120℃ • Waterproof : Non-waterproof
	Terminal	Brass / Pre-Tin	Brass / Tin Plate		
Current Rating		10A, 350VDC, or 250VAC	30A, 12VDC	<Resistor Sensors> • 18, 20, 25, 30mΩ	
Insulation Resistance		100MΩ Min. at 500VDC	100MΩ Min. at 500VDC		
Dielectric with standing voltage		1,800VAC, 1Minute	3,000VAC, 1Minute		
Operating Temperature Range		-30℃ ~ +80℃			
Voltage Rating					
Mounting Hole Layout					
Page	82		83	84, 85	86

◆ Selection Chart

Special Connectors

Category	SPECIAL CONNECTORS			
Product Model	Plug / Receptacle Connector	PCMCIA Connector (Non Ejector Type)	PCMCIA Connector (Ejector Type)	Smart Card Connector(1Slot)
Product Photo				
Characteristic	• Metal Housing, • EMI/RFI Shielding • 260 Contact Cavities • Single Hand Actuation • Square Post Contacts	• Single (3.3V, 5V-All Possible) • Double (3.3V, 5V-All Possible)	• Single (3.3V, 5V-All Possible) • Double (3.3V, 5V-All Possible)	<Applications> • Digital STB • Smart Card Reader • Gas/Power/Water Meter, Security
Application	• Medical • Entertainment • Telecommunication • Commercial / Industrial Manufacturing • Test & Instrument	• Set Top Box • ADSL Modem	• Set Top Box • ADSL Modem	<Electrical properties> • Insulation Resistance : 5,000MΩ Min. • Dielectric withstanding : 750Vrms Min. • Current Carrying Capacity : 100M Max. • Card Sensor Type : Normally Closed
Electrical Characteristic	• Current : 5A • Contact Resistance : 15mΩ Max • Dielectric withstanding Voltage : 1,200VAC, 5mA • Insulation Resistance : 5,000MΩ Min, 500VDC	• Voltage : 200V • Current : 0.5A • Contact Resistance : 40mΩ Max • Dielectric withstanding Voltage : 500VAC • Insulation Resistance : 1,000MΩ Min	• Voltage : 200V • Current : 0.5A • Contact Resistance : 40mΩ Max • Dielectric withstanding Voltage : 500VAC • Insulation Resistance : 1,000MΩ Min,	<Material> • Housing : PBT 30% Glass Filled, Color Black, Rated UL 94V-0 • Contacts & Switch : Phosphor Bronze • Plating : Nickel all over with 3μm mini on contact area Gold on contact area atra:see catalogue part number key Tin/Lead 3μm mini on soldertails Bare edge allowed
Mechanical Characteristic	• Durability : 20,000 cycles	• Contact Retention to Housing : 1.0 Kg.f Min. • Mating Force : 4.0Kg.f Max. • Unmating Force : 0.68Kg.f Max. • Durability : 10,000 cycles	• Contact Retention to Housing : 1.0 Kg.f Min. • Mating Force : 4.0Kg.f Max. • Unmating Force : 0.68Kg.f Max. • Durability : 10,000 cycles	
Physical Characteristic	• Housing : Glass Filled Thermoplastic • Contact : Copper Alloy • Plating : Gold Plating 0.8μm • Temperature : -55°C ~ +105°C	• Housing : Black PBT(G30%), UL 94V-0 • Contact : Copper Alloy • Plating : Nickel with Gold Plating 0.1μm • Card Travel : 5mm • Temperature : -20°C~+60°C	• Housing : Black PBT(G30%), UL 94V-0 • Contact : Copper Alloy • Plating : Nickel with Gold Plating 0.1μm • Card Travel : 5mm • Temperature : -20°C~+60°C	<Environment> • Operating Temperature : -20°C ~ +70°C • Storage Temperature : -40°C ~ +8°C • Printed Circuit Board Thickness : 1.6mm
Layout				
Page	87	89	91	93

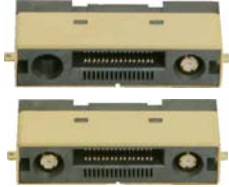
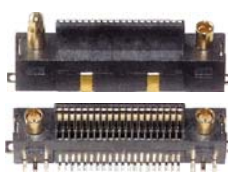
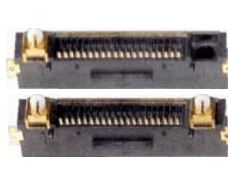
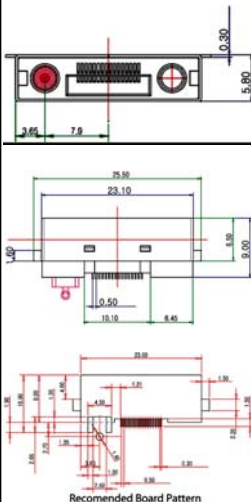
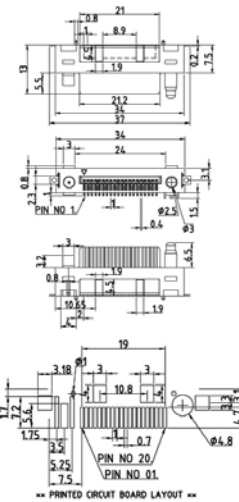
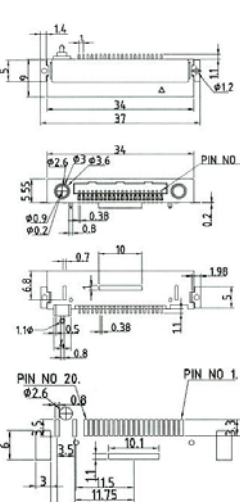
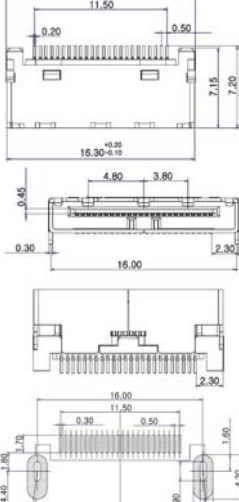
◆ Selection Chart

Special Connectors

Category	SPECIAL CONNECTORS			
Product Model	I/O 16P Male Connector	I/O 16P Male Connector	I/O 16P Male Connector	I/O 16P Female Connector
Product Photo				
Characteristic	- RF Connector Use : MCX+SMB Type Adaptor - RF Cable Use : MCX+SMB Type Cable - Use Bracket	RF Connector Use : Mini Coax' Male Connector(SMD Type)	- RF Connector Use : Mini Coax' Male Connector(Edge Type) - Cable Ass'y Work Possible	RF Cable Use : MCX+UMP Type Cable
Application	Satellite Radio	- Satellite Radio - DMB - Navigation	- Satellite Radio - DMB - Navigation	Satellite Radio
Electrical Characteristic	- Voltage : 14V · Current : 1A - Contact Resistance : 50mΩ Max - Dielectric withstanding Voltage : 150VAC - Insulation Resistance : 1,000MΩ Min. - Impedance : 50Ω	- Voltage : 50V · Current : 2A - Contact Resistance : 30mΩ Max - Dielectric withstanding Voltage : 500VAC - Insulation Resistance : 500MΩ Min. - Impedance : 50Ω	- Voltage : 50V · Current : 2A - Contact Resistance : 30mΩ Max - Dielectric withstanding Voltage : 500VAC - Insulation Resistance : 500MΩ Min. - Impedance : 50Ω	- Voltage : 14V · Current : 1A - Contact Resistance : 50mΩ Max - Dielectric withstanding Voltage : 150VAC - Insulation Resistance : 1,000MΩ Min. - Impedance : 50Ω
Mechanical Characteristic	- Insertion Force : 20~50mm Min. - Withdrawal Force : 20~50mm Min. - Durability : 5,000 cycles	- Insertion Force : 20~50mm Min. - Withdrawal Force : 20~50mm Min. - Durability : 10,000 cycles	- Insertion Force : 20~50mm Min. - Withdrawal Force : 20~50mm Min. - Durability : 10,000 cycles	- Insertion Force : 20~50mm Min. - Withdrawal Force : 20~50mm Min. - Durability : 5,000 cycles
Physical Characteristic	- Housing : High Temperature Thermoplastic(G30%), UL 94V-0 - Contact : Phosphor Bronze - Plating : Nickel with Gold Plating 0.1μm - Temperature : -20℃~+80℃ - Soldering Temperature : 260±5℃/3sec	- Housing : LCP(G30%), UL 94V-0 - Contact : Phosphor Bronze - Plating : Gold Plating 0.2μm - Temperature : -40℃~+90℃ - Soldering Temperature : 260±5℃/3sec - Frequency Range : DC 0~2.8GHz	- Housing : LCP(G30%), UL 94V-0 - Contact : Phosphor Bronze - Plating : Gold Plating 0.2μm - Temperature : -40℃~+90℃ - Soldering Temperature : 260±5℃/3sec - Frequency Range : DC 0~2.8GHz	- Housing : High Temperature Thermoplastic(G30%), UL 94V-0 - Contact : Phosphor Bronze - Plating : Nickel with Gold Plating 0.1μm - Temperature : -40℃~+80℃ - Soldering Temperature : 260±5℃/3sec
Layout				
Page	95	97	99	101

◆ Selection Chart

Special Connectors

Category	SPECIAL CONNECTORS			
Product Model	I/O 16P Female Connector	I/O 20P Male Connector	I/O 20P Female Connector	I/O 24P Connector
Product Photo				
Characteristic	- RF Connector Use - Mini Coax' Female Connector(SMD Type)	- RF Connector Use - Mini Coax' Male Connector(SMD Type) - RF Cable Use - Mini Coax' Male Connector+SMB Type Cable - Bracket Use	- RF Connector Use - Mini Coax' Female Connector(SMD Type)	
Application	- Satellite Radio - DMB - Navigation	- Satellite Radio - DMB	- Satellite Radio - DMB	- DMB - Navigation
Electrical Characteristic	- Voltage : 50V · Current : 2A - Contact Resistance : 30mΩ Max - Dielectric withstanding Voltage : 500VAC - Insulation Resistance : 500MΩ Min. - Impedance : 50Ω	- Voltage : 50V · Current : 2A - Contact Resistance : 30mΩ Max - Dielectric withstanding Voltage : 500VAC - Insulation Resistance : 500MΩ Min. - Impedance : 50Ω	- Voltage : 50V · Current : 2A - Contact Resistance : 30mΩ Max - Dielectric withstanding Voltage : 500VAC - Insulation Resistance : 500MΩ Min. - Impedance : 50Ω	- Voltage : 100V · Current : 3A - Contact Resistance : 50mΩ Max - Dielectric withstanding Voltage : 300VAC - Insulation Resistance : 1,000MΩ Min. - Impedance : 50Ω
Mechanical Characteristic	- Insertion Force : 20~50mm Min. - Withdrawal Force : 20~50mm Min. - Durability : 10,000 cycles	- Insertion Force : 20~50mm Min. - Withdrawal Force : 20~50mm Min. - Durability : 30,000 cycles	- Insertion Force : 20~50mm Min. - Withdrawal Force : 20~50mm Min. - Durability : 30,000 cycles	- Lock Pulling Force : 200kg/min - Durability : 10,000 cycles
Physical Characteristic	- Housing : LCP(G30%), UL 94V-0 - Contact : Phosphor Bronze - Plating : Gold Plating 0.2μm - Temperature : -40℃~+90℃ - Soldering Temperature : 260±5℃/3sec - Frequency Range : DC 0~2.8GHz	- Housing : LCP(G30%), UL 94V-0 - Contact : Phosphor Bronze - Plating : Gold Plating 0.2μm - Temperature : -40℃~+90℃ - Soldering Temperature : 260±5℃/3sec	- Housing : LCP(G30%), UL 94V-0 - Contact : Phosphor Bronze - Plating : Gold Plating 0.2μm - Temperature : -40℃~+90℃ - Soldering Temperature : 260±5℃/3sec	- Housing : PA9T, UL 94V-0 - Contact : Phosphor Bronze - Plating : Gold Plating 0.3μm - Temperature : -30℃~+80℃ - Soldering Temperature : 260±5℃/10sec
Layout	 Recommended Board Pattern	 PRINTED CIRCUIT BOARD LAYOUT	 PRINTED CIRCUIT BOARD LAYOUT	 Through Hole Both Side of PCB Recommended Board Pattern
Page	103	105	107	109



◆ SIGNAL RELAY

DHRA Relay



1. COIL DATA

1-1. Nominal Voltage	3, 5, 6, 9, 12, 24VDC
1-2. Coil Resistance	Refer to Coil Data Chart
1-3. Operate Voltage	Refer to Coil Data Chart
1-4. Release Voltage	Refer to Coil Data Chart
1-5. Nominal Power	330mW, 450mW

2. CONTACT DATA

2-1. Contact Form	C-1 Form C
2-2. Contact Material	AuAg overlay, Ag Alloy
2-3. Contact Rating	1A 120VAC / 24VDC
2-4. Max. Switching Voltage	120VAC / 30VDC
2-5. Max. Switching Current	2A
2-6. Max. Switching Power	120VA, 30W
2-7. Min. Switching Load	5VDC, 10mA
2-8. Contact Resistance	Max. 50m Ω (6VDC 0.1A)
2-9. Life	
Electrical	100,000 operations
Mechanical	10,000,000 operations

3. GENERAL DATA

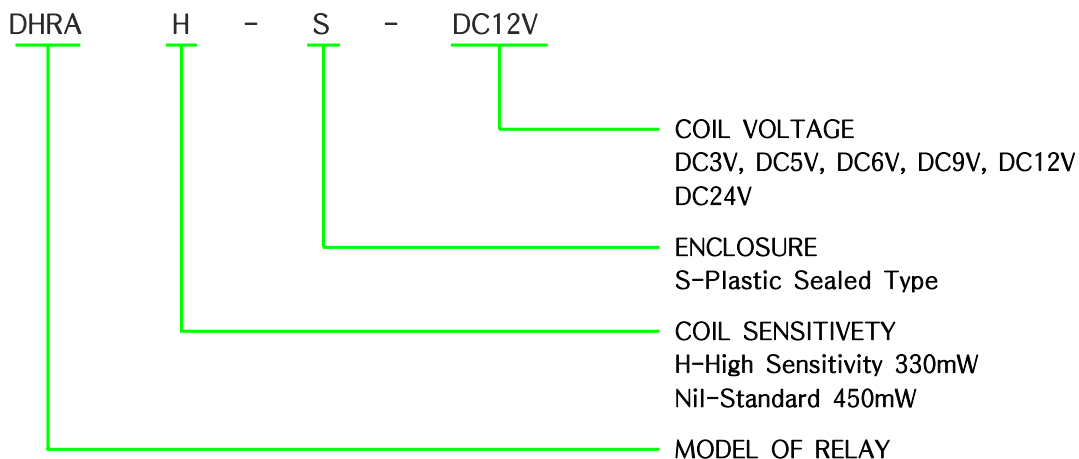
3-1. Insulation Resistance	Min. 100M Ω 500VDC
3-2. Dielectric Strength	500VAC, 1min between open contacts 500VAC, 1min between coil and contacts
3-3. Operate Time	Max. 6ms
3-4. Release Time	Max. 4ms
3-5. Operate Temperature	-25 $^{\circ}$ C ~ +70 $^{\circ}$ C
3-6. Shock Resistance	
Endurance	1,000m/s ²
Misoperation	100m/s ²
3-7. Vibration Resistance	
Endurance	10~55Hz, 1.5mm double amplitude
Misoperation	10~55Hz, 1.5mm double amplitude
3-8. Humidity	35~95%RH, +40 $^{\circ}$ C
3-9. Weight	Approximately 1.7g
3-10. Safety	UL NO. E164730 CSA NO. 1063017(LR 106040)



◆ SIGNAL RELAY

DHRA Relay

4. ORDER CODE

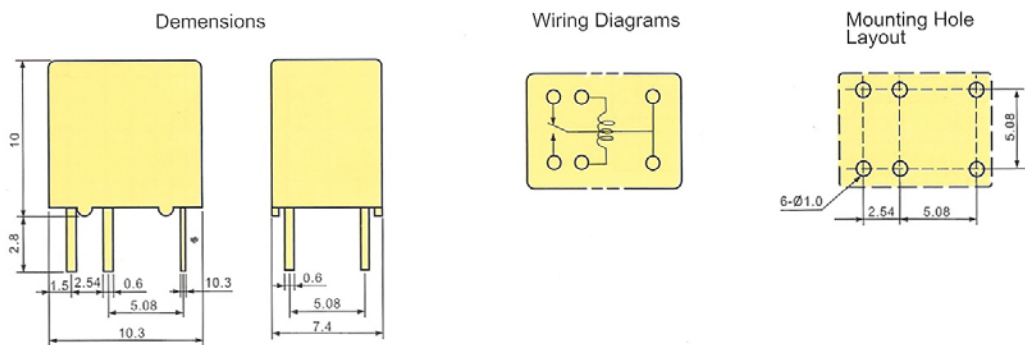


5. COIL DATA CHART

20℃

Model	Nominal Voltage VDC	Coil Resistance $\pm 10\% \Omega$	Operate Voltage $\leq VDC$	Release Voltage $\geq VDC$	Coil Power mW
DHRA-(S)-DC3V	3	20	2.1	0.3	450
DHRA-(S)-DC5V	5	55	3.5	0.5	
DHRA-(S)-DC6V	6	80	4.2	0.6	
DHRA-(S)-DC9V	9	180	6.3	0.9	
DHRA-(S)-DC12V	12	320	8.4	1.2	
DHRA-(S)-DC24V	24	1280	16.8	2.4	
DHRAH-(S)-DC3V	3	28	2.1	0.3	330
DHRAH-(S)-DC5V	5	75	3.5	0.5	
DHRAH-(S)-DC6V	6	110	4.2	0.6	
DHRAH-(S)-DC9V	9	245	6.3	0.9	
DHRAH-(S)-DC12V	12	440	8.4	1.2	
DHRAH-(S)-DC24V	24	1515	16.8	2.4	380

6. DIMENSIONS(mm)

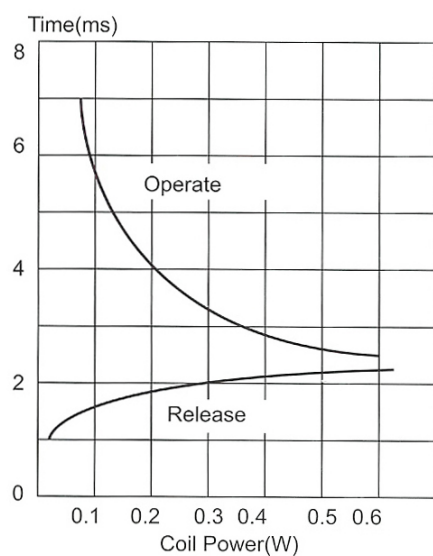


◆ SIGNAL RELAY

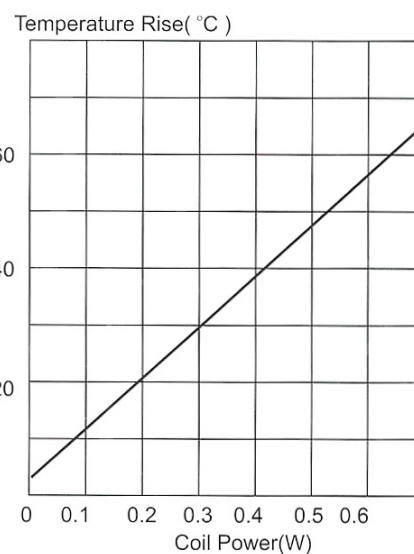
DHRA Relay

7. DHRA CHARACTERISTIC CHART DATA

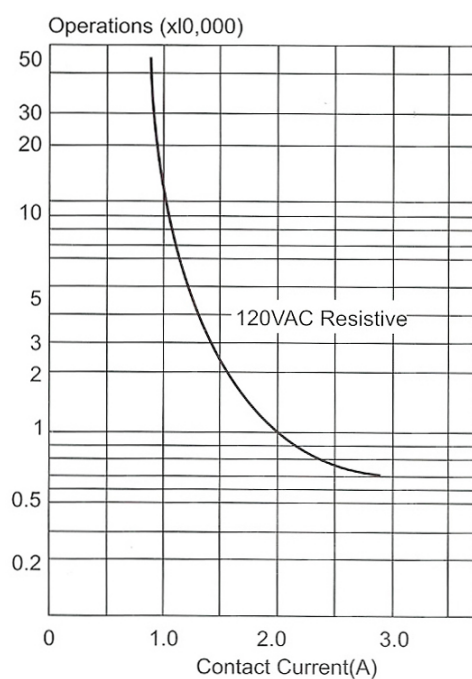
Timing



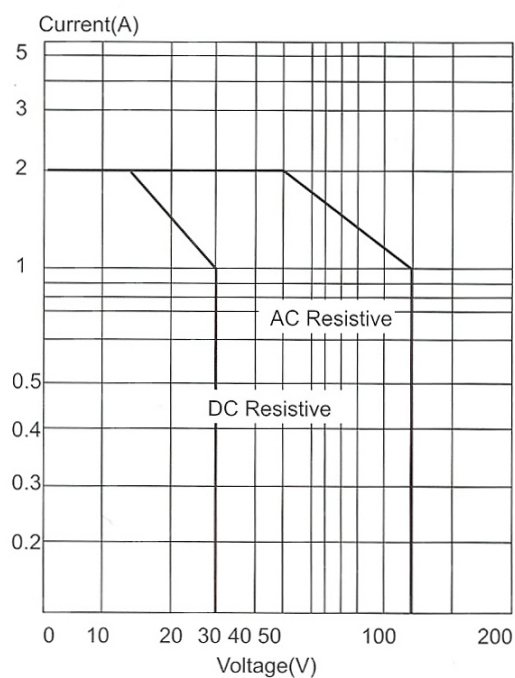
Coil Temperature Rise



Life Curves

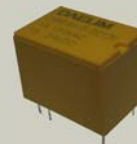


Max.Switching Power



◆ SIGNAL RELAY

DHRS1 Relay



1. COIL DATA

1-1. Nominal Voltage	3, 5, 6, 9, 12, 24VDC
1-2. Coil Resistance	Refer to Coil Data Chart
1-3. Operate Voltage	Refer to Coil Data Chart
1-4. Release Voltage	Refer to Coil Data Chart
1-5. Nominal Power	200mW, 360mW

2. CONTACT DATA

2-1. Contact Form	C-1 Form C
2-2. Contact Material	AuAg overlay, Ag Alloy
2-3. Contact Rating	1A 120VAC / 24VDC
2-4. Max. Switching Voltage	220VAC / 30VDC
2-5. Max. Switching Current	2A
2-6. Max. Switching Power	120VA, 30W
2-7. Min. Switching Load	5VDC, 10mA
2-8. Contact Resistance	Max. 50m Ω (6VDC 0.1A)
2-9. Life	
Electrical	100,000 operations
Mechanical	10,000,000 operations

3. GENERAL DATA

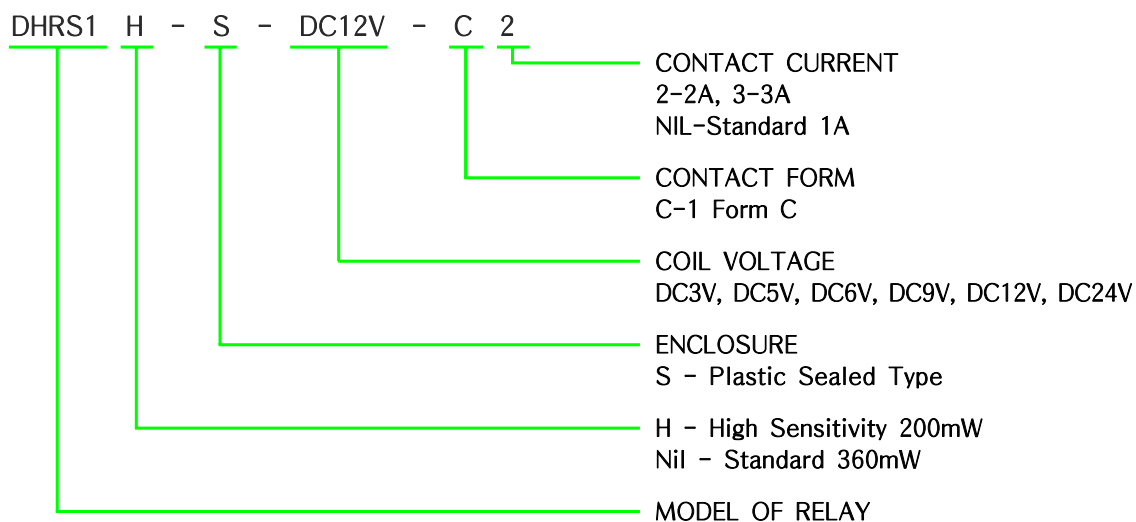
3-1. Insulation Resistance	Min. 100M Ω 500VDC
3-2. Dielectric Strength	750VAC, 1min between open contacts 1,000VAC, 1min between coil and contacts
3-3. Operate Time	Max. 5ms
3-4. Release Time	Max. 5ms
3-5. Operate Temperature	-25 $^{\circ}$ C ~ +70 $^{\circ}$ C
3-6. Shock Resistance	
Endurance	1,000m/s ²
Misoperation	100m/s ²
3-7. Vibration Resistance	
Endurance	10~55Hz, 1.5mm double amplitude
Misoperation	10~55Hz, 1.5mm double amplitude
3-8. Humidity	35~95%RH, +40 $^{\circ}$ C
3-9. Weight	Approximately 4.0g
3-10. Safety	UL NO. E164730 CSA NO. 1426410



◆ SIGNAL RELAY

DHRS1 Relay

4. ORDER CODE

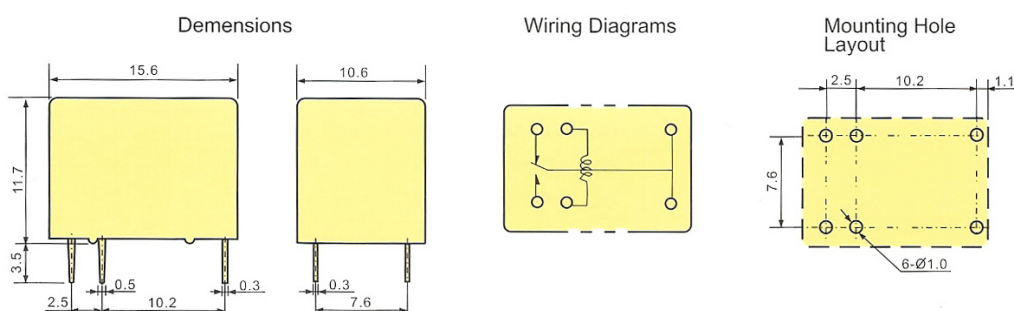


5. COIL DATA CHART

20℃

Model	Nominal Voltage VDC	Coil Resistance $\pm 10\% \Omega$	Operate Voltage $\leq VDC$	Release Voltage $\geq VDC$	Coil Power mW
DHRS1-(S)-DC3V	3	25	2.1	0.3	360
DHRS1-(S)-DC5V	5	70	3.5	0.5	
DHRS1-(S)-DC6V	6	100	4.2	0.6	
DHRS1-(S)-DC9V	9	225	6.3	0.9	
DHRS1-(S)-DC12V	12	400	8.4	1.2	
DHRS1-(S)-DC24V	24	1600	16.8	2.4	
DHRS1H-(S)-DC3V	3	45	2.25	0.3	200
DHRS1H-(S)-DC5V	5	125	3.75	0.5	
DHRS1H-(S)-DC6V	6	180	4.5	0.6	
DHRS1H-(S)-DC9V	9	405	6.75	0.9	
DHRS1H-(S)-DC12V	12	720	9.0	1.2	
DHRS1H-(S)-DC24V	24	2880	18.0	2.4	

6. DIMENSIONS(mm)

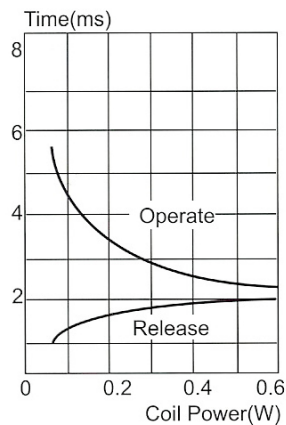


◆ SIGNAL RELAY

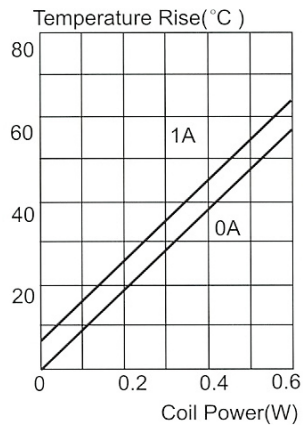
DHRS1 Relay

7. DHRS1 CHARACTERISTIC CHART DATA

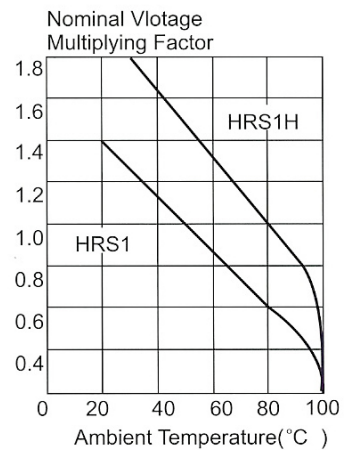
Timing



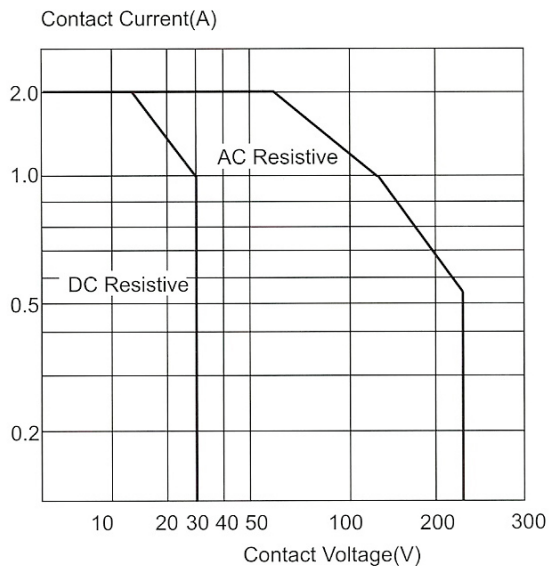
Coil Temperature Rise



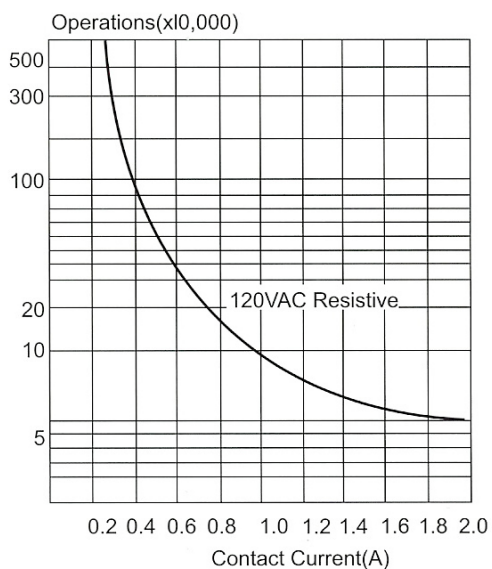
Operate Range



Max. Switching Power

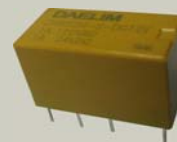


Life Curves



◆ SIGNAL RELAY

DHRS2 Relay



1. COIL DATA

1-1. Nominal Voltage	3, 5, 6, 9, 12, 24VDC
1-2. Coil Resistance	Refer to Coil Data Chart
1-3. Operate Voltage	Refer to Coil Data Chart
1-4. Release Voltage	Refer to Coil Data Chart
1-5. Nominal Power	150mW, 200mW

2. CONTACT DATA

2-1. Contact Form	C-2 Form C
2-2. Contact Material	AuAg overlay, Ag Alloy
2-3. Contact Rating	1A 120VAC / 24VDC
2-4. Max. Switching Voltage	120VAC / 30VDC
2-5. Max. Switching Current	2A (Standard type), 1A (High sensitivity)
2-6. Max. Switching Power	120VA, 30W
2-7. Min. Switching Load	5VDC, 10mA
2-8. Contact Resistance(Standard Type)	Max. 50mΩ (6VDC 0.1A)
Contact Resistance(High Sensitivity)	Max. 100mΩ (6VDC 0.1A)
2-9. Life	
Electrical	100,000 operations
Mechanical	15,000,000 operations

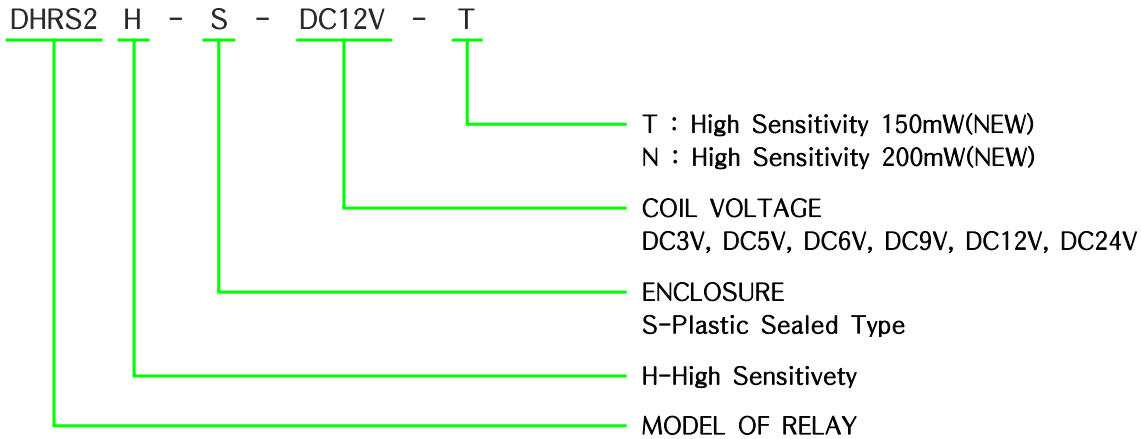
3. GENERAL DATA

3-1. Insulation Resistance	Min. 1000MΩ. 500VDC
3-2. Dielectric Strength	750VAC, 1min between open contacts(Standard type) 500VAC, 1min between open contacts(High sensitivity) 1,000VAC, 1min between coil and contacts
3-3. Surge Strength	1,500VAC, 10×160 μs
3-4. Operate Time	Max. 7ms
3-5. Release Time	Max. 3ms
3-6. Operate Temperature	-25℃ ~ +70℃
3-7. Shock Resistance	
Endurance	1,000m/s ²
Misoperation	100m/s ²
3-8. Vibration Resistance	
Endurance	10~55Hz, 1.5mm double amplitude
Misoperation	10~55Hz, 1.5mm double amplitude
3-9. Humidity	35%~95%RH, +40℃
3-10. Weight	Approximately 5.0g
3-11. Safety(Standard)	UL NO. E164730 CSA NO. 1467343(LR109368-2) TUV NO. R50062786

◆ SIGNAL RELAY

DHRS2 Relay

4. ORDER CODE

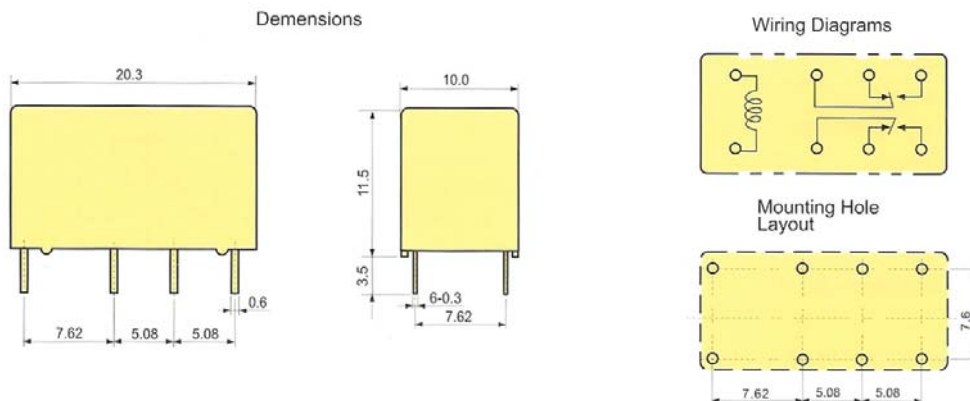


5. COIL DATA CHART

20℃

Model	Nominal Voltage VDC	Coil Resistance $\pm 10\% \Omega$	Operate Voltage $\leq VDC$	Release Voltage $\geq VDC$	Coil Power mW
DHRS2-(S)-DC3V-N	3	45	2.25	0.3	200
DHRS2-(S)-DC5V-N	5	125	3.75	0.5	
DHRS2-(S)-DC6V-N	6	180	4.5	0.6	
DHRS2-(S)-DC9V-N	9	405	6.75	0.9	
DHRS2-(S)-DC12V-N	12	720	9.0	1.2	
DHRS2-(S)-DC24V-N	24	2880	18.0	2.4	
DHRS2H-(S)-DC3V-H	3	60	2.25	0.3	150
DHRS2H-(S)-DC5V-H	5	166	3.75	0.5	
DHRS2H-(S)-DC6V-H	6	240	4.5	0.6	
DHRS2H-(S)-DC9V-H	9	540	6.75	0.9	
DHRS2H-(S)-DC12V-H	12	960	9.0	1.2	
DHRS2H-(S)-DC24V-H	24	3840	18.0	2.4	

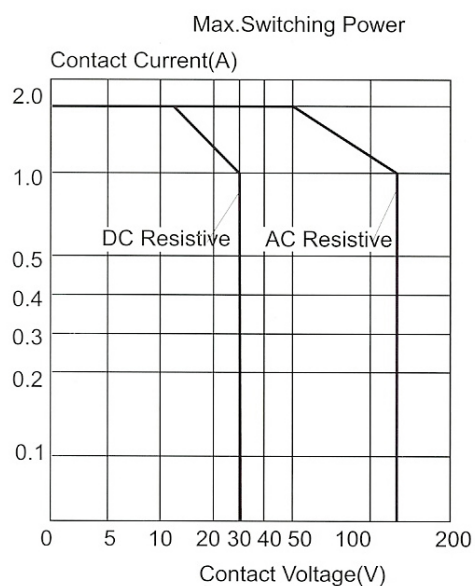
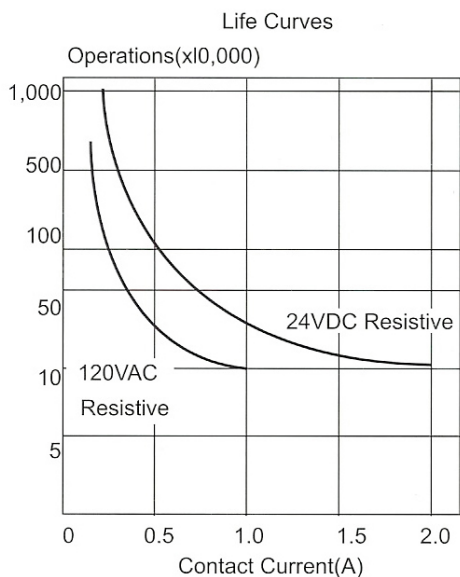
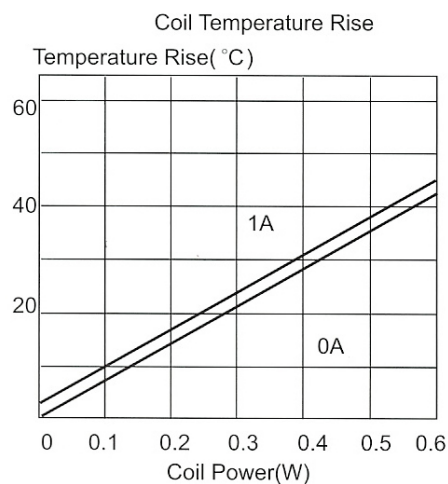
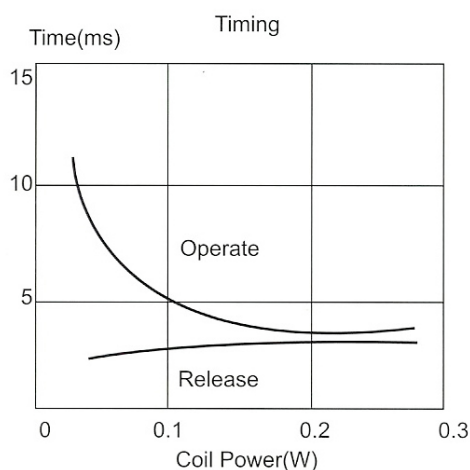
6. DIMENSIONS(mm)



◆ SIGNAL RELAY

DHRS2 Relay

7. DHRS2 CHARACTERISTIC CHART DATA



◆ SIGNAL RELAY

DHRB1 Relay



1. COIL DATA

1-1. Nominal Voltage	3, 5, 6, 9, 12, 24VDC
1-2. Coil Resistance	Refer to Coil Data Chart
1-3. Operate Voltage	Refer to Coil Data Chart
1-4. Release Voltage	Refer to Coil Data Chart
1-5. Nominal Power	150mW, 175mW(24VDC)

2. CONTACT DATA

2-1. Contact Form	C-1 Form C
2-2. Contact Material	AuAg overlay, Ag Alloy
2-3. Contact Rating(Resistive)	1A 120VAC / 30VDC
2-4. Max. Switching Voltage	125VAC / 30VDC
2-5. Max. Switching Current	1A
2-6. Max. Switching Power	125VA, 30W
2-7. Min. Switching Load	5VDC, 10mA
2-8. Contact Resistance(Initial)	Max. 50m Ω (6VDC 0.1A)
2-9. Life	
Electrical	100,000 operations
Mechanical	5,000,000 operations

3. GENERAL DATA

3-1. Insulation Resistance	Min. 1,000M Ω 500VDC
3-2. Dielectric Strength	500VAC, 1min between open contacts 1,000VAC, 1min between coil and contacts
3-3. Surge Strength	1,500VAC
3-4. Operate Time	Max. 5ms
3-5. Release Time	Max. 5ms
3-6. Operate Temperature	-40℃ ~ +70℃
3-7. Shock Resistance	
Endurance	1,000m/s ²
Misoperation	100m/s ²
3-8. Vibration Resistance	
Endurance	10~55Hz, 1.5mm double amplitude
Misoperation	10~55Hz, 1.5mm double amplitude
3-9. Humidity	35%~95%RH, +40℃
3-10. Weight	Approximately 2.2g
3-11. Safety	UL/cUL NO. E164730 CSA NO. 1369391(LR109368)



◆ SIGNAL RELAY

DHRB1 Relay

4. ORDER CODE

DHRB1 - S - DC12V

COIL VOLTAGE
DC3V, DC5V, DC6V, DC9V, DC12V, DC24V

ENCLOSURE
S - Plastic Sealed Type

MODEL OF RELAY

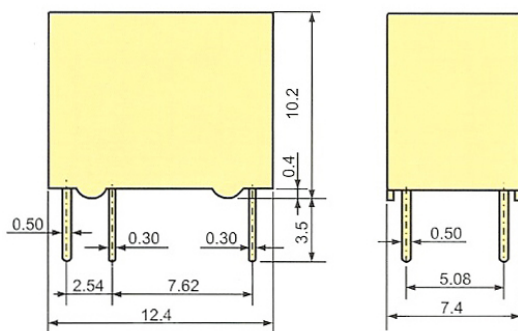
5. COIL DATA CHART

20℃

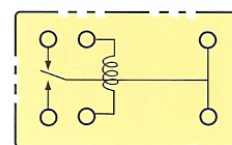
Model	Nominal Voltage VDC	Coil Resistance $\pm 10\% \Omega$	Operate Voltage $\leq VDC$	Release Voltage $\geq VDC$	Coil Power mW
DHRB1-(S)-DC3V	3	60	2.25	0.3	150
DHRB1-(S)-DC5V	5	167	3.75	0.5	
DHRB1-(S)-DC6V	6	240	4.5	0.6	
DHRB1-(S)-DC9V	9	540	6.75	0.9	
DHRB1-(S)-DC12V	12	960	9.0	1.2	
DHRB1-(S)-DC24V	24	3291	18.0	2.4	175

6. DIMENSIONS(mm)

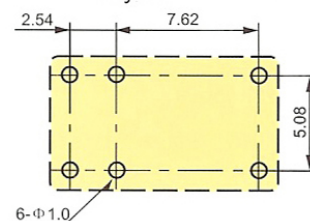
Dimensions



Wiring Diagrams



Mounting Hole Layout

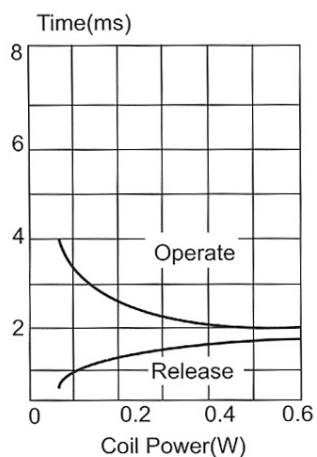


◆ SIGNAL RELAY

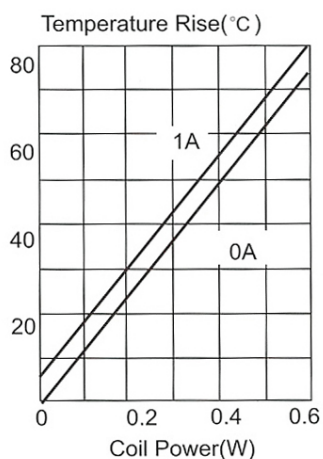
DHRB1 Relay

7. DHRB1 CHARACTERISTIC CHART DATA

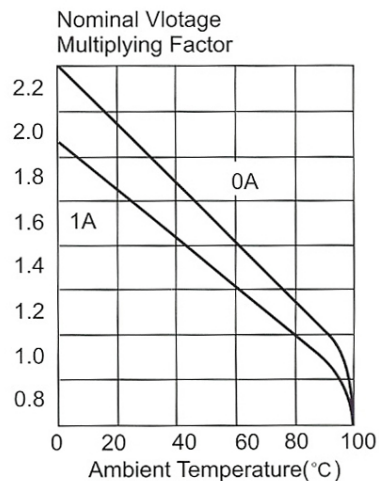
Timing



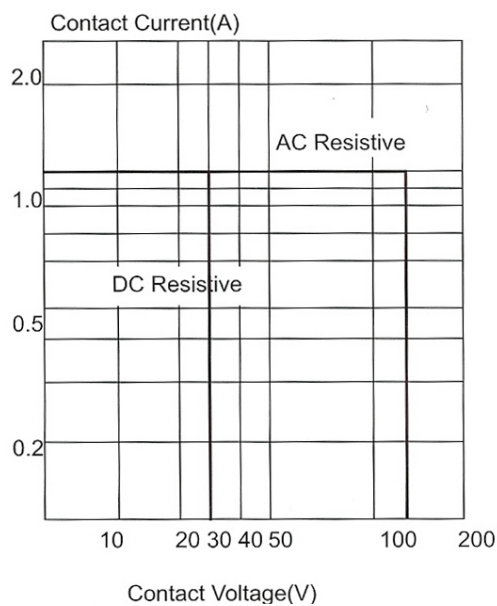
Coil Temperature Rise



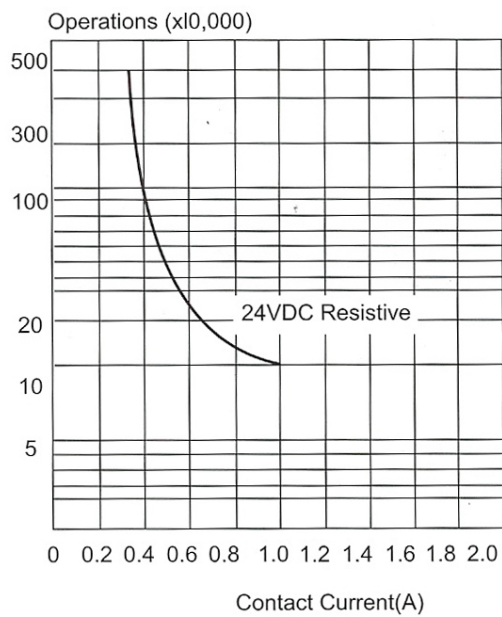
Operating Range



Max. Switching Power



Life Curves



◆ POWER RELAY

DHRS3 Relay



1. COIL DATA

1-1. Nominal Voltage	3, 5, 6, 9, 12, 24VDC
1-2. Coil Resistance	Refer to Coil Data Chart
1-3. Operate Voltage	Refer to Coil Data Chart
1-4. Release Voltage	Refer to Coil Data Chart
1-5. Nominal Power	200mW, 450mW

2. CONTACT DATA

2-1. Contact Form	A-1 Form A, C-1 Form C
2-2. Contact Material	Ag Alloy
2-3. Contact Rating	1A : 10A 125VAC, 5A 250VAC / 30VDC(Standard) 1C : NO/NC : 5A/3A 250VAC / 30VDC(Standard)
2-4. Max. Switching Voltage	250VAC / 30VDC
2-5. Max. Switching Current	10A
2-6. Max. Switching Power	1,250VA, 150W
2-7. Min. Switching Load	5VDC, 100mA
2-8. Contact Resistance	Max. 100mΩ (6VDC 1A)
2-9. Life	
Electrical	100,000 operations
Mechanical	10,000,000 operations

3. GENERAL DATA

3-1. Insulation Resistance	Min. 1000MΩ. 500VDC
3-2. Dielectric Strength	1,000VAC, 1min between open contacts A : 3,500VAC, 1min between coil and contacts C : 2,500VAC, 1min between coil and contacts
3-3. Operate Time	Max. 10ms
3-4. Release Time	Max. 5ms
3-5. Operate Temperature	-40℃ ~ +85℃
3-6. Shock Resistance	
Endurance	1,000m/s ²
Misoperation	100m/s ²
3-7. Vibration Resistance	
Endurance	10~55Hz, 1.5mm double amplitude
Misoperation	10~55Hz, 1.5mm double amplitude
3-8. Humidity	35%~95%RH, +40℃
3-9. Weight	Approximately 6.0g
3-10. Safety	UL NO. E164730 CSA NO. 1063016(LR109368) TUV NO. 50075616



◆ POWER RELAY

DHRS3 Relay

4. ORDER CODE

DHRS3 H - S - DC12V - A

CONTACT FORM

A-1 Form A

C-1 Form C

COIL VOLTAGE

DC3V, DC5V, DC6V, DC9V, DC12V, DC24V

ENCLOSURE

S-Plastic Sealed Type

H - High Sensitivity(200mW)

NIL - Standard(450mW)

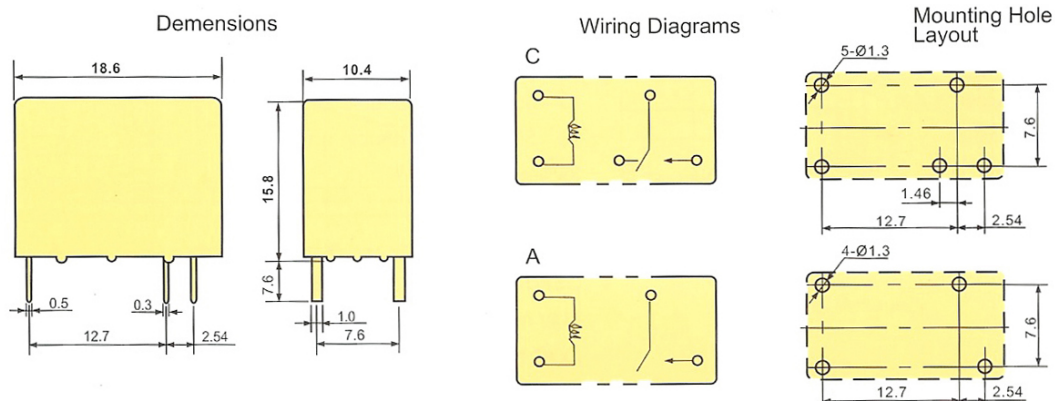
MODEL OF RELAY

5. COIL DATA CHART

20℃

Model	Nominal Voltage VDC	Coil Resistance ±10%Ω	Operate Voltage ≤VDC		Release Voltage ≥VDC	Coil Power mW
			A Type	C Type		
DHRS3-(S)-DC3V	3	20	2.1	2.1	0.3	450
DHRS3-(S)-DC5V	5	55	3.5	3.5	0.5	
DHRS3-(S)-DC6V	6	80	4.2	4.2	0.6	
DHRS3-(S)-DC9V	9	180	6.3	6.3	0.9	
DHRS3-(S)-DC12V	12	320	8.4	8.4	1.2	
DHRS3-(S)-DC24V	24	1280	16.8	16.8	2.4	
DHRS3H-(S)-DC3V	3	45	2.1	2.25	0.3	200
DHRS3H-(S)-DC5V	5	125	3.5	3.75	0.5	
DHRS3H-(S)-DC6V	6	180	4.2	4.5	0.6	
DHRS3H-(S)-DC9V	9	405	6.3	6.75	0.9	
DHRS3H-(S)-DC12V	12	720	8.4	9.0	1.2	
DHRS3H-(S)-DC24V	24	2880	16.8	18.0	2.4	

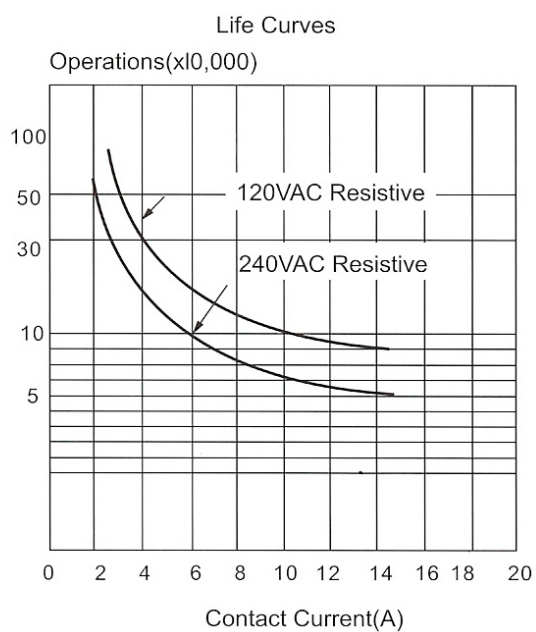
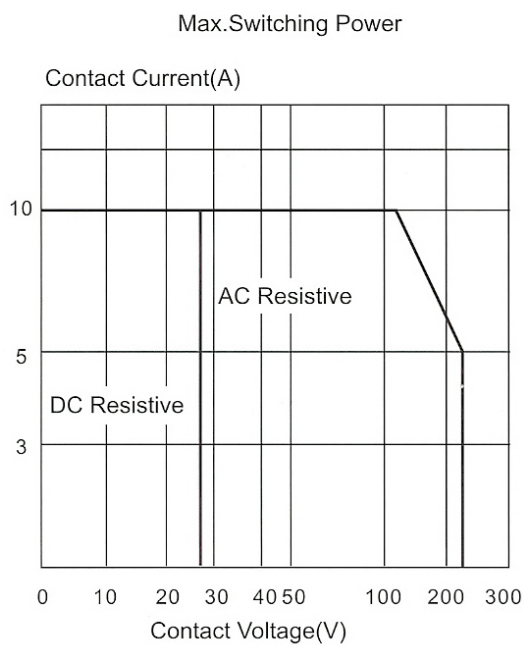
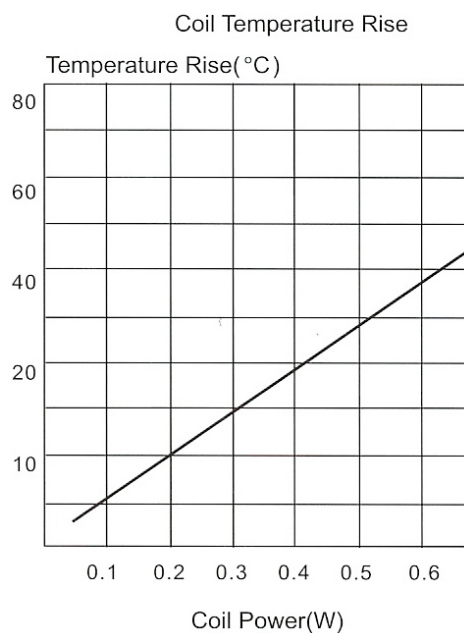
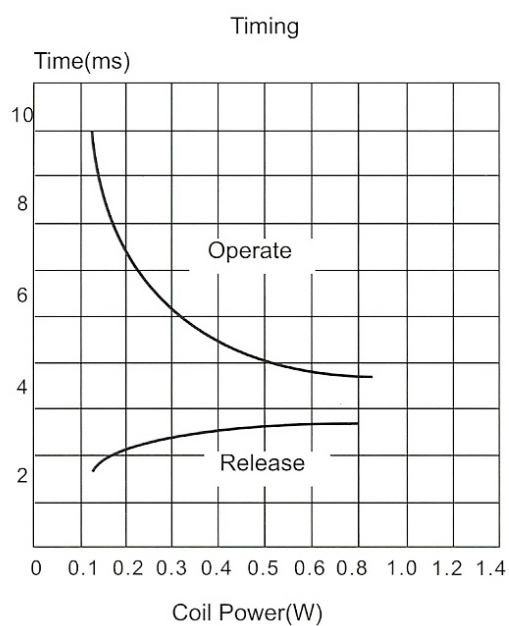
6. DIMENSIONS(mm)



◆ POWER RELAY

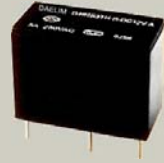
DHRS3 Relay

7. DHRS3 CHARACTERISTIC CHART DATA



◆ POWER RELAY

DHRS3T Relay



1. COIL DATA

1-1. Nominal Voltage	3, 5, 6, 9, 12, 24, 48VDC
1-2. Coil Resistance	Refer to Coil Data Chart
1-3. Operate Voltage	Refer to Coil Data Chart
1-4. Release Voltage	Refer to Coil Data Chart
1-5. Nominal Power	200mW, 450mW

2. CONTACT DATA

2-1. Contact Form	A-1 Form A, C-1 Form C
2-2. Contact Material	Ag Alloy
2-3. Contact Rating	1A : 10A 125VAC, 5A 250VAC / 30VDC(Standard) 1C : NO/NC : 5A/3A 250VAC / 30VDC(Standard)
2-4. Max. Switching Voltage	250VAC / 30VDC
2-5. Max. Switching Current	10A
2-6. Max. Switching Power	1,250VA, 150W
2-7. Min. Switching Load	5VDC, 100mA
2-8. Contact Resistance	Max. 100mΩ (6VDC 1A)
2-9. Life	
Electrical	100,000 operations
Mechanical	10,000,000 operations

3. GENERAL DATA

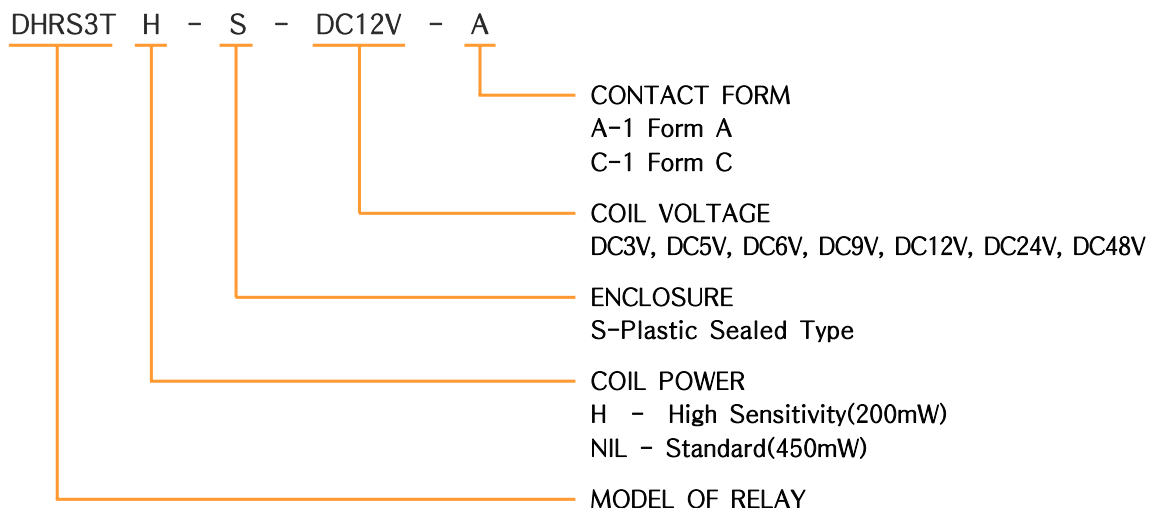
3-1. Insulation Resistance	Min. 1,000MΩ 500VDC
3-2. Dielectric Strength	1,000VAC, 1min between open contacts A : 3,500VAC, 1min between coil and contacts C : 2,500VAC, 1min between coil and contacts
3-3. Operate Time	Max. 8ms
3-4. Release Time	Max. 5ms
3-5. Operate Temperature	-40℃ ~ +70℃
3-6. Shock Resistance	
Endurance	1,000m/s ²
Misoperation	100m/s ²
3-7. Vibration Resistance	
Endurance	10~55Hz, 1.5mm double amplitude
Misoperation	10~55Hz, 1.5mm double amplitude
3-8. Humidity	35%~95%RH, +40℃
3-9. Weight	Approximately 7.0g
3-10. Safety	TUV NO. 50075616



◆ POWER RELAY

DHRS3T Relay

4. ORDER CODE

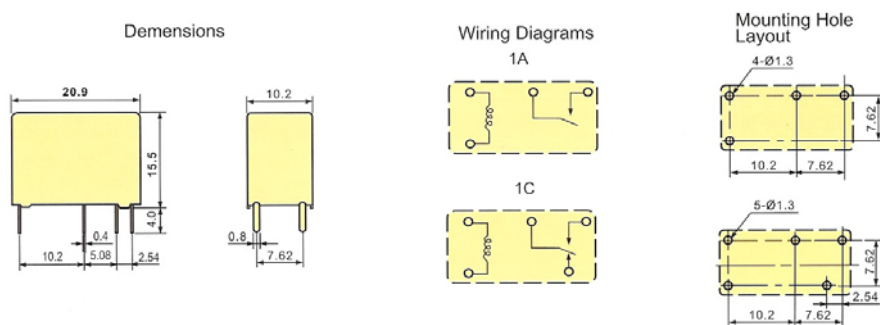


5. COIL DATA CHART

20℃

Model	Nominal Voltage VDC	Coil Resistance $\pm 10\% \Omega$	Operate Voltage $\leq VDC$	Release Voltage $\geq VDC$	Coil Power mW
DHRS3T-(S)-DC3V	3	20	2.25	0.3	450
DHRS3T-(S)-DC5V	5	55	3.75	0.5	
DHRS3T-(S)-DC6V	6	80	4.5	0.6	
DHRS3T-(S)-DC9V	9	180	6.75	0.9	
DHRS3T-(S)-DC12V	12	320	9.0	1.2	
DHRS3T-(S)-DC18V	18	720	13.5	1.8	
DHRS3T-(S)-DC24V	24	1280	18.0	2.4	
DHRS3T-(S)-DC48V	48	5120	36.0	4.8	
DHRS3TH-(S)-DC3V	3	45	2.25	0.3	200
DHRS3TH-(S)-DC5V	5	125	3.75	0.5	
DHRS3TH-(S)-DC6V	6	180	4.5	0.6	
DHRS3TH-(S)-DC9V	9	405	6.75	0.9	
DHRS3TH-(S)-DC12V	12	720	9.0	1.2	
DHRS3TH-(S)-DC18V	18	1620	13.5	1.8	
DHRS3TH-(S)-DC24V	24	2880	18.0	2.4	

6. DIMENSIONS(mm)

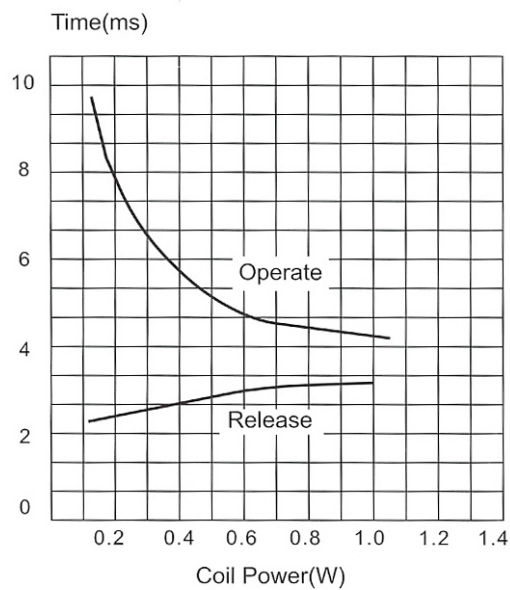


◆ POWER RELAY

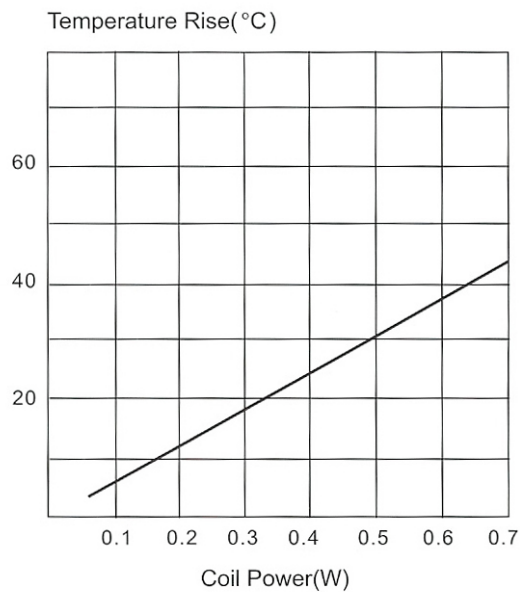
DHRS3T Relay

7. DHRS3T CHARACTERISTIC CHART DATA

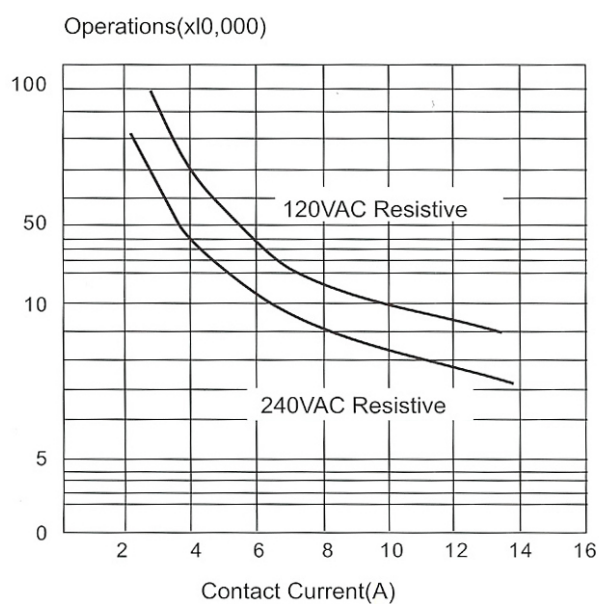
Timing



Coil Temperature Rise



Life Curves



◆ POWER RELAY

DHRS4 Relay



1. COIL DATA

1-1. Nominal Voltage	3, 5, 6, 9, 12, 24, 48VDC
1-2. Coil Resistance	Refer to Coil Data Chart
1-3. Operate Voltage	Refer to Coil Data Chart
1-4. Release Voltage	Refer to Coil Data Chart
1-5. Nominal Power	360mW, 450mW

2. CONTACT DATA

2-1. Contact Form	A-1 Form A, C-1 Form C
2-2. Contact Material	Ag Alloy
2-3. Contact Rating	1A : 15A 125VAC / 24VDC, 10A 250VAC 1C : 10A 120VAC / 24VDC, 10A / 6A 250VDC TV-5
2-4. Max. Switching Voltage	250VAC / 24VDC
2-5. Max. Switching Current	15A
2-6. Max. Switching Power	1,800VA, 360W
2-7. Min. Switching Load	5VDC, 100mA
2-8. Contact Resistance	Max. 100mΩ (6VDC 1A)
2-9. Life	
Electrical	100,000 operations
Mechanical	10,000,000 operations

3. GENERAL DATA

3-1. Insulation Resistance	Min. 1,000MΩ. 500VDC
3-2. Dielectric Strength	750VAC, 1min between open contacts 1,500VAC, 1min between coil and contacts
3-3. Operate Time	Max. 10ms
3-4. Release Time	Max. 5ms
3-5. Operate Temperature	-30℃ ~ +85℃
3-6. Shock Resistance	
Endurance	1,000m/s ²
Misoperation	100m/s ²
3-7. Vibration Resistance	
Endurance	10~55Hz, 1.5mm double amplitude
Misoperation	10~55Hz, 1.5mm double amplitude
3-8. Humidity	35%~95%RH, +40℃
3-9. Weight	Approximately 10.0g
3-10. Safety	UL NO. E164730 CSA NO. 1063016 TUV NO. 50062840

◆ POWER RELAY

DHRS4 Relay

4. ORDER CODE

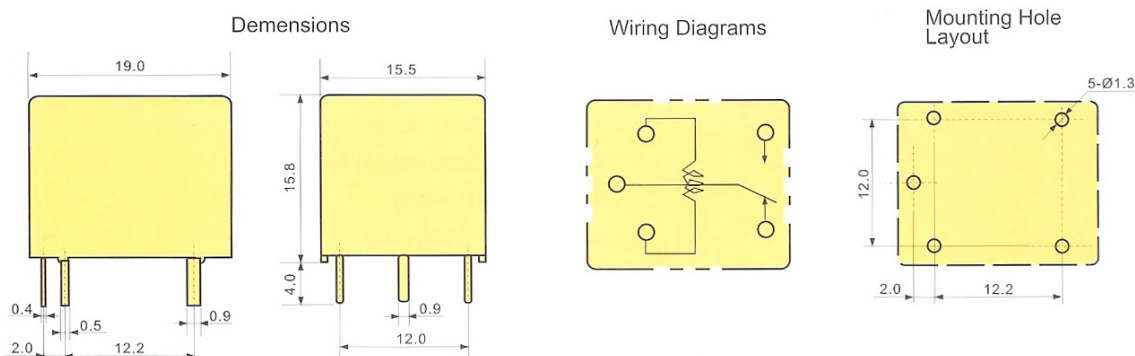
DHRS4	H	-	S	-	DC12V	-	A	
								CONTACT FORM
								A-1 Form A
								C-1 Form C
								COIL VOLTAGE
								DC3V, DC5V, DC6V, DC9V, DC12V, DC24V, DC48V
								ENCLOSURE
								S-Plastic Sealed Type
								COIL POWER
								H - High Sensitivity(360mW)
								NIL - Standard(450mW)
								MODEL OF RELAY

5. COIL DATA CHART

20℃

Model	Nominal Voltage VDC	Coil Resistance $\pm 10\% \Omega$	Operate Voltage $\leq VDC$	Release Voltage $\geq VDC$	Coil Power mW
DHRS4-(S)-DC3V	3	20	2.1	0.3	450
DHRS4-(S)-DC5V	5	55	3.5	0.5	
DHRS4-(S)-DC6V	6	80	4.2	0.6	
DHRS4-(S)-DC9V	9	180	6.3	0.9	
DHRS4-(S)-DC12V	12	320	8.4	1.2	
DHRS4-(S)-DC24V	24	1280	16.8	2.4	
DHRS4-(S)-DC48V	48	5120	33.6	4.8	
DHRS4H-(S)-DC3V	3	25	2.1	0.3	360
DHRS4H-(S)-DC5V	5	70	3.5	0.5	
DHRS4H-(S)-DC6V	6	100	4.2	0.6	
DHRS4H-(S)-DC9V	9	225	6.3	0.9	
DHRS4H-(S)-DC12V	12	400	8.4	1.2	
DHRS4H-(S)-DC24V	24	1600	16.8	2.4	
DHRS4H-(S)-DC48V	48	6400	33.6	4.8	

6. DIMENSIONS(mm)

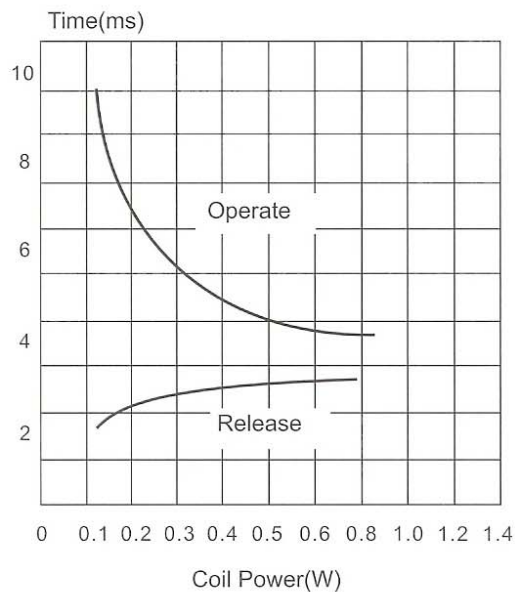


◆ POWER RELAY

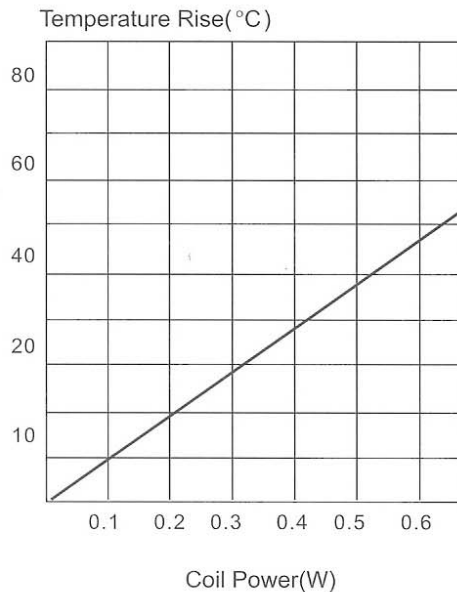
DHRS4 Relay

7. DHRS4 CHARACTERISTIC CHART DATA

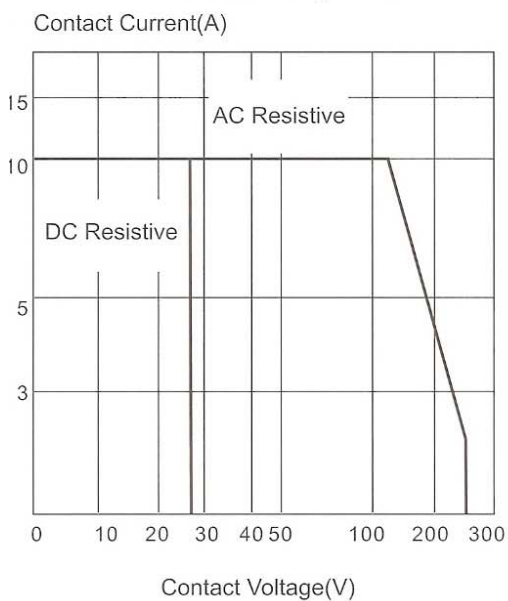
Timing



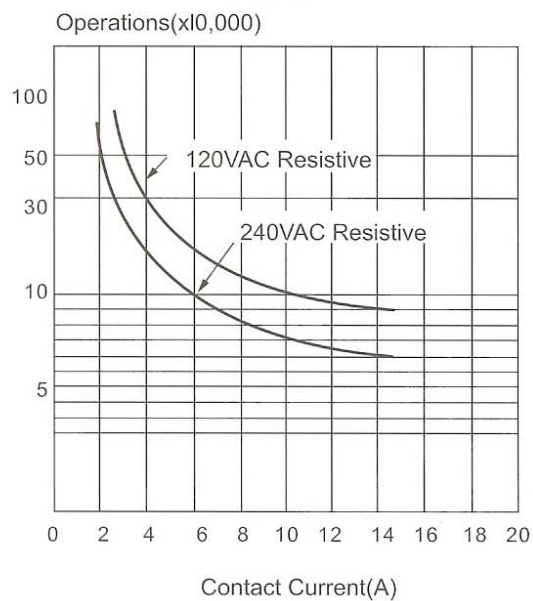
Coil Temperature Rise



Max.Switching Power



Life Curves



◆ POWER RELAY

DHRS4T Relay



1. COIL DATA

1-1. Nominal Voltage	3, 5, 6, 9, 12, 24, 48VDC
1-2. Coil Resistance	Refer to Coil Data Chart
1-3. Operate Voltage	Refer to Coil Data Chart
1-4. Release Voltage	Refer to Coil Data Chart
1-5. Nominal Power	360mW, 450mW, 720mW

2. CONTACT DATA

2-1. Contact Form	A-1 Form A, C-1 Form C
2-2. Contact Material	Ag Alloy
2-3. Contact Rating	12A 120VAC 10A 250VAC/24VDC 5A 120VAC/24VDC Inductive(COS ϕ =0.4, L/R=7ms) TV-5
2-4. Max. Switching Voltage	250VAC / 24VDC
2-5. Max. Switching Current	15A
2-6. Max. Switching Power	2,500VA, 240W
2-7. Min. Switching Load	5VDC, 100mA
2-8. Contact Resistance	Max. 100m Ω (6VDC 1A)
2-9. Life	
Electrical	100,000 operations
Mechanical	10,000,000 operations

3. GENERAL DATA

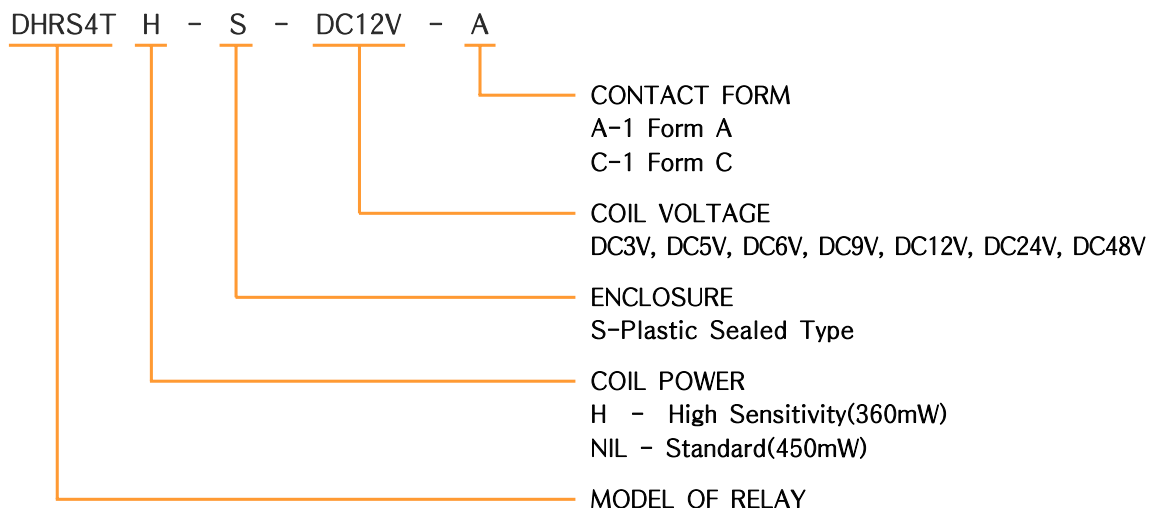
3-1. Insulation Resistance	Min. 1,000M Ω 500VDC
3-2. Dielectric Strength	1,000VAC, 1min between open contacts 1,800VAC, 1min between coil and contacts
3-3. Operate Time	Max. 10ms
3-4. Release Time	Max. 5ms
3-5. Operate Temperature	-40℃ ~ +85℃
3-6. Shock Resistance	
Endurance	1,000m/s ²
Misoperation	100m/s ²
3-7. Vibration Resistance	
Endurance	10~55Hz, 1.5mm double amplitude
Misoperation	10~55Hz, 1.5mm double amplitude
3-8. Humidity	35%~95%RH, +40℃
3-9. Weight	Approximately 12.0g
3-10. Safety	TUV NO. 50062840



◆ POWER RELAY

DHRS4T Relay

4. ORDER CODE

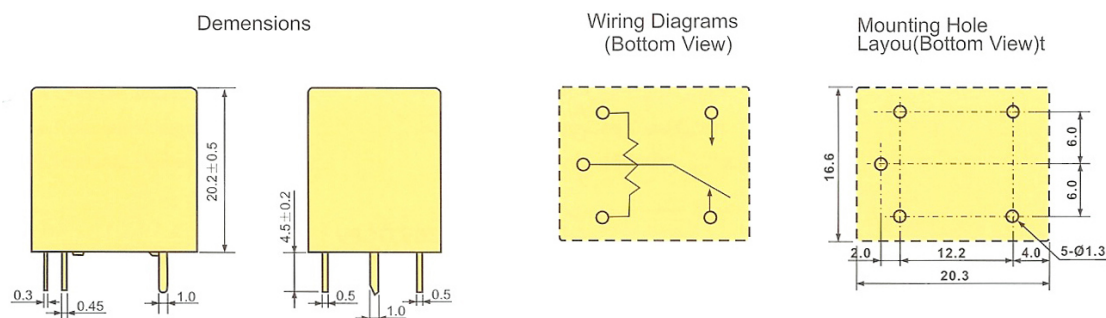


5. COIL DATA CHART

20℃

Model	Nominal Voltage VDC	Coil Resistance $\pm 10\% \Omega$	Operate Voltage $\leq VDC$	Release Voltage $\geq VDC$	Coil Power mW
DHRS4T-(S)-DC3V	3	20	2.1	0.3	450
DHRS4T-(S)-DC5V	5	55	3.5	0.5	
DHRS4T-(S)-DC6V	6	80	4.2	0.6	
DHRS4T-(S)-DC9V	9	180	6.3	0.9	
DHRS4T-(S)-DC12V	12	320	8.4	1.2	
DHRS4T-(S)-DC24V	24	1280	16.8	2.4	
DHRS4T-(S)-DC48V	48	5120	33.6	4.8	
DHRS4TH-(S)-DC3V	3	25	2.1	0.3	360
DHRS4TH-(S)-DC5V	5	70	3.5	0.5	
DHRS4TH-(S)-DC6V	6	100	4.2	0.6	
DHRS4TH-(S)-DC9V	9	225	6.3	0.9	
DHRS4TH-(S)-DC12V	12	400	8.4	1.2	
DHRS4TH-(S)-DC24V	24	1600	16.8	2.4	
DHRS4TH-(S)-DC48V	48	6400	33.6	4.8	

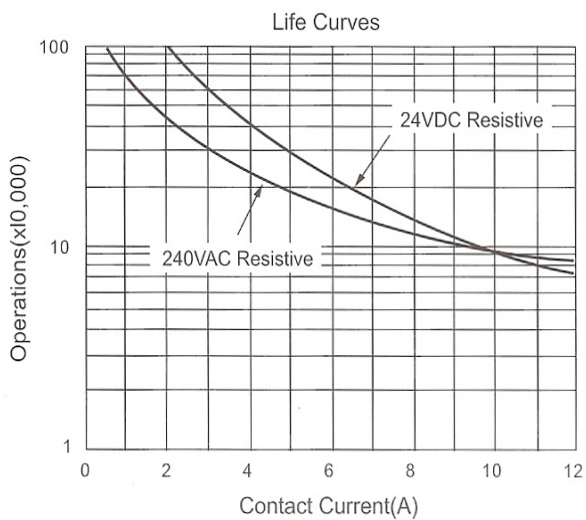
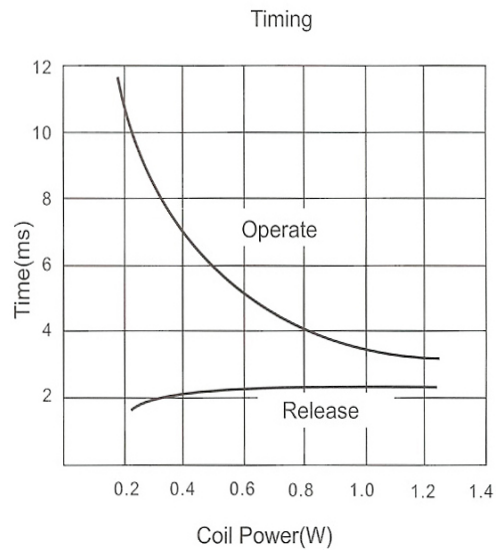
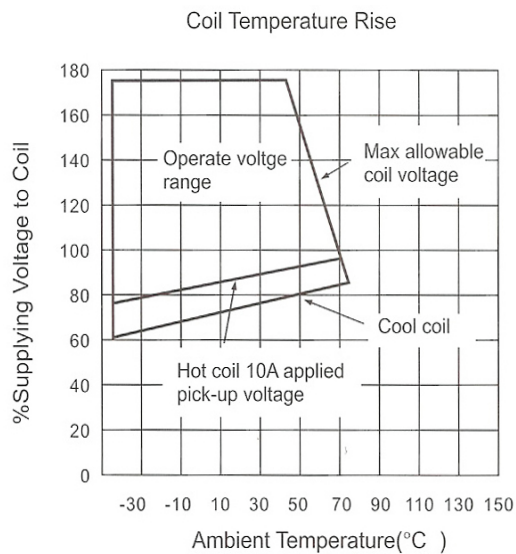
6. DIMENSIONS(mm)



◆ POWER RELAY

DHRS4T Relay

7. DHRS4T CHARACTERISTIC CHART DATA



Note: This data is based on the max. allowable temperature for E type insulation coil (120°C)



◆ POWER RELAY

DHRS4E Relay



1. COIL DATA

1-1. Nominal Voltage	3, 5, 6, 9, 12, 24, 48VDC
1-2. Coil Resistance	Refer to Coil Data Chart
1-3. Operate Voltage	Refer to Coil Data Chart
1-4. Release Voltage	Refer to Coil Data Chart
1-5. Nominal Power	360mW, 450mW

2. CONTACT DATA

2-1. Contact Form	A-1 Form A, C-1 Form C
2-2. Contact Material	Ag Alloy
2-3. Contact Rating	1A : 10A 250VAC / 24VDC, TV-5 1C : 10A 120VAC / 24VDC NO/NC : 10A/5A 250VAC(UL Rating)
2-4. Max. Switching Voltage	250VAC / 24VDC
2-5. Max. Switching Current	12A
2-6. Max. Switching Power	2,500VA, 240W
2-7. Min. Switching Load	5VDC, 100mA
2-8. Contact Resistance	Max. 100m Ω (6VDC 1A)
2-9. Life	
Electrical	100,000 operations
Mechanical	10,000,000 operations

3. GENERAL DATA

3-1. Insulation Resistance	Min. 1,000M Ω . 500VDC
3-2. Dielectric Strength	1,000VAC, 1min between open contacts 2,500VAC, 1min between coil and contacts
3-3. Operate Time	Max. 10ms
3-4. Release Time	Max. 5ms
3-5. Operate Temperature	-40℃ ~ +85℃
3-6. Shock Resistance	
Endurance	1,000m/s ²
Misoperation	100m/s ²
3-7. Vibration Resistance	
Endurance	10~55Hz, 1.5mm double amplitude
Misoperation	10~55Hz, 1.5mm double amplitude
3-8. Humidity	35%~95%RH, +40℃
3-9. Weight	Approximately 11.0g
3-10. Safety	UL NO. E164730 CSA NO. 1083662(LR 109368) TUV NO. 50062740 VDE NO. 40010488

◆ POWER RELAY

DHRS4E Relay

4. ORDER CODE

DHRS4 E - S - DC12V - A

CONTACT FORM

A-1 Form A

C-1 Form C

COIL VOLTAGE

DC3V, DC5V, DC6V, DC9V, DC12V, DC24V, DC48V

ENCLOSURE

S-Plastic Sealed Type

COIL POWER

H - High Sensitivity(360mW)

NIL - Standard(450mW)

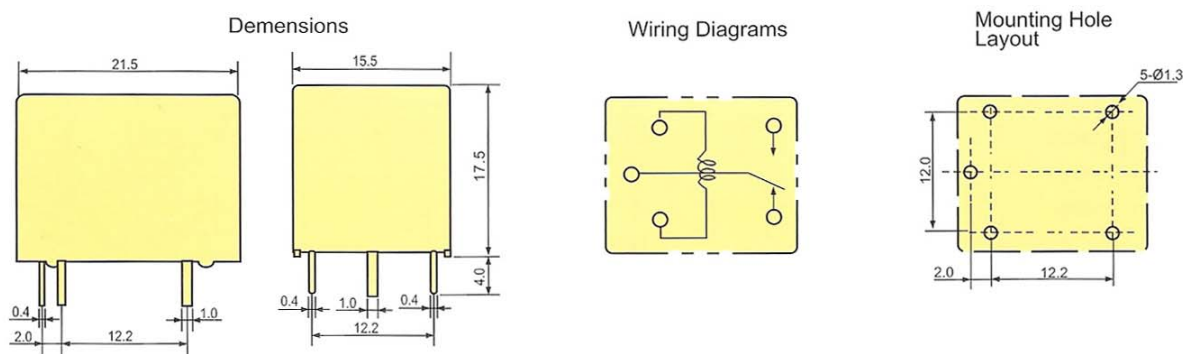
MODEL OF RELAY

5. COIL DATA CHART

20℃

Model	Nominal Voltage VDC	Coil Resistance $\pm 10\% \Omega$	Operate Voltage $\leq VDC$	Release Voltage $\geq VDC$	Coil Power mW
DHRS4E-(S)-DC3V	3	20	2.1	0.3	450
DHRS4E-(S)-DC5V	5	55	3.5	0.5	
DHRS4E-(S)-DC6V	6	80	4.2	0.6	
DHRS4E-(S)-DC9V	9	180	6.3	0.9	
DHRS4E-(S)-DC12V	12	320	8.4	1.2	
DHRS4E-(S)-DC24V	24	1280	16.8	2.4	
DHRS4E-(S)-DC48V	48	5120	33.6	4.8	
DHRS4EH-(S)-DC3V	3	25	2.1	0.3	360
DHRS4EH-(S)-DC5V	5	70	3.5	0.5	
DHRS4EH-(S)-DC6V	6	100	4.2	0.6	
DHRS4EH-(S)-DC9V	9	225	6.3	0.9	
DHRS4EH-(S)-DC12V	12	400	8.4	1.2	
DHRS4EH-(S)-DC24V	24	1600	16.8	2.4	
DHRS4EH-(S)-DC48V	48	6400	33.6	4.8	

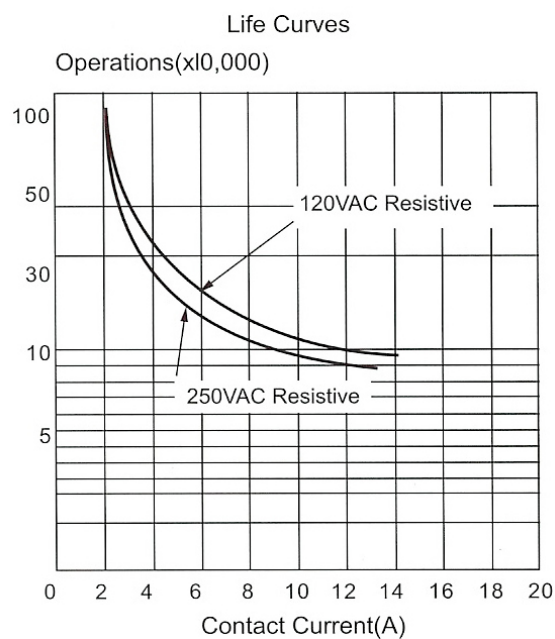
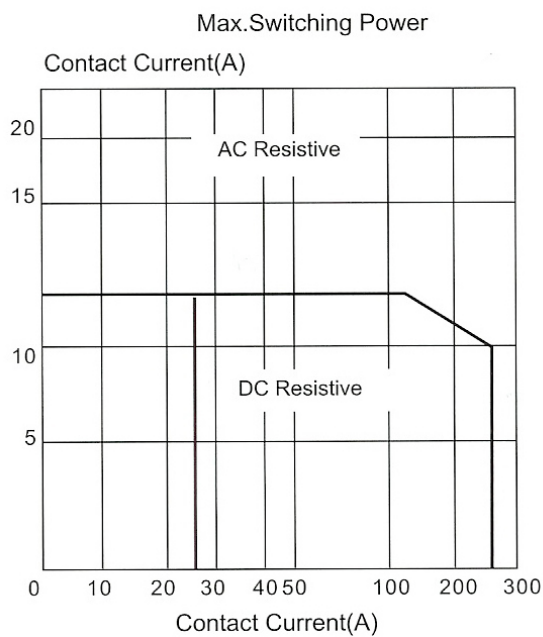
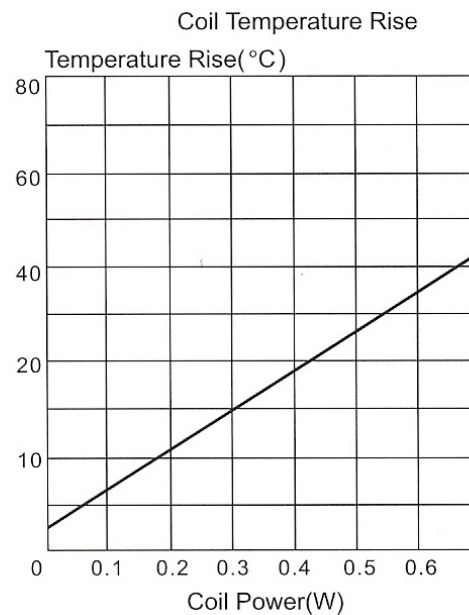
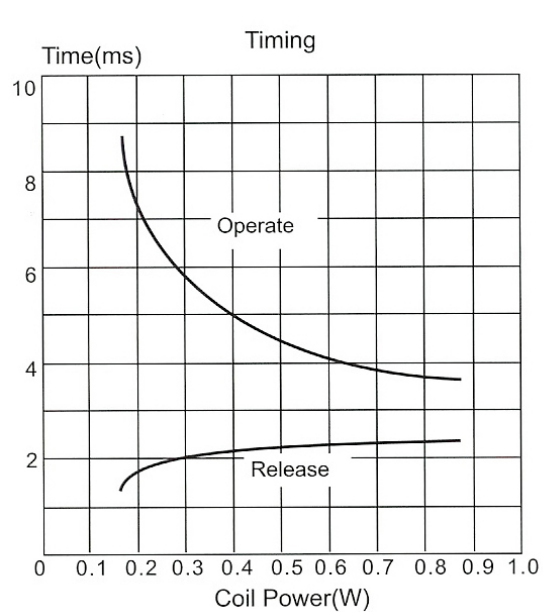
6. DIMENSIONS(mm)



◆ POWER RELAY

DHRS4E Relay

7. DHRS4E CHARACTERISTIC CHART DATA



◆ POWER RELAY

DV6 Relay



1. COIL DATA

1-1. Nominal Voltage	3, 5, 6, 9, 12, 24, 48VDC
1-2. Coil Resistance	Refer to Coil Data Chart
1-3. Operate Voltage	Refer to Coil Data Chart
1-4. Release Voltage	Refer to Coil Data Chart
1-5. Nominal Power	200mW

2. CONTACT DATA

2-1. Contact Form	A-1 Form A
2-2. Contact Material	Ag Alloy
2-3. Contact Rating	15A 125VAC, 10A 250VAC / 24VDC
2-4. Max. Switching Voltage	250VAC / 30VDC
2-5. Max. Switching Current	15A
2-6. Max. Switching Power	2,500VA, 240W
2-7. Min. Switching Load	5VDC, 100mA
2-8. Contact Resistance	Max. 100mΩ (6VDC 0.1A)
2-9. Life	
Electrical	100,000 operations
Mechanical	10,000,000 operations

3. GENERAL DATA

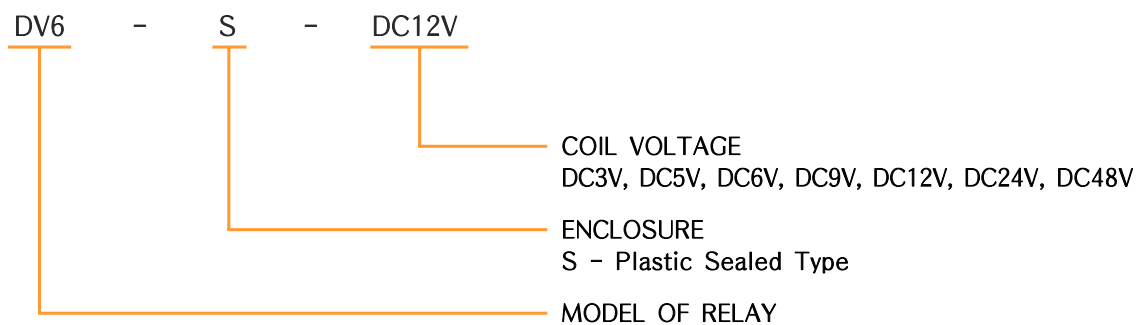
3-1. Insulation Resistance	Min. 1,000MΩ 500VDC
3-2. Dielectric Strength	750VAC, 1min between open contacts 2,500VAC, 1min between coil and contacts
3-3. Operate Time	Max. 15ms
3-4. Release Time	Max. 8ms
3-5. Operate Temperature	-30℃ ~ +70℃
3-6. Shock Resistance	
Endurance	1,000m/s ²
Misoperation	100m/s ²
3-7. Vibration Resistance	
Endurance	10~55Hz, 1.5mm double amplitude
Misoperation	10~55Hz, 1.5mm double amplitude
3-9. Humidity	35%~95%RH, +40℃
3-10. Weight	Approximately 9.0g
3-11. Safety	UL NO. E164730 CSA NO. 1460119(LR 109368) TUV NO. 50062655



◆ POWER RELAY

DV6 Relay

4. ORDER CODE

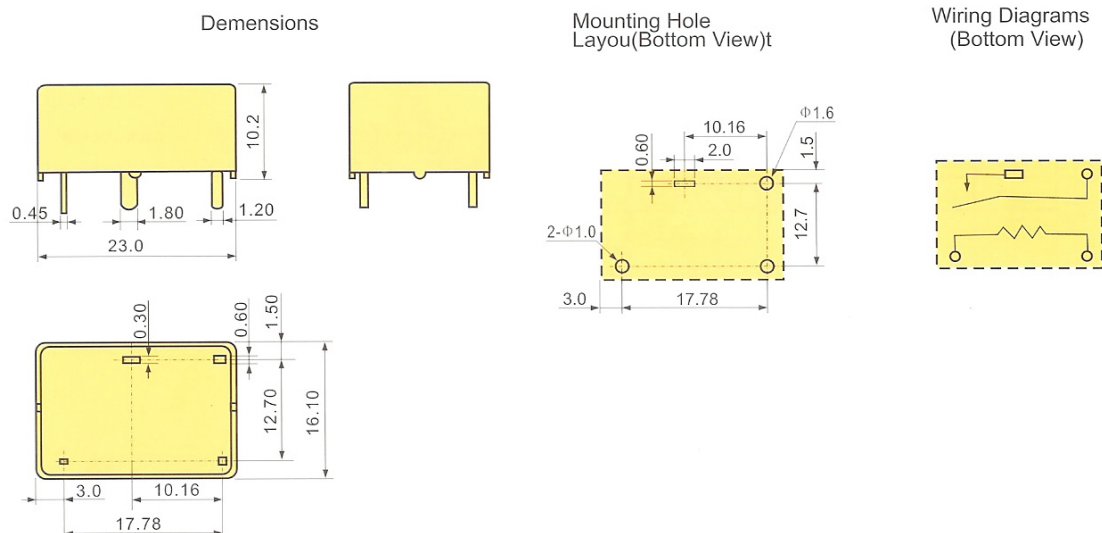


5. COIL DATA CHART

20℃

Model	Nominal Voltage VDC	Coil Resistance $\pm 10\% \Omega$	Operate Voltage $\leq VDC$	Release Voltage $\geq VDC$	Coil Power mW
DV6-(S)-DC3V	3	45	2.25	0.3	200
DV6-(S)-DC5V	5	125	3.75	0.5	
DV6-(S)-DC6V	6	180	4.5	0.6	
DV6-(S)-DC9V	9	405	6.75	0.9	
DV6-(S)-DC12V	12	720	9.0	1.2	
DV6-(S)-DC24V	24	2880	18.0	1.2	
DV6-(S)-DC48V	48	9216	36.0	2.4	250

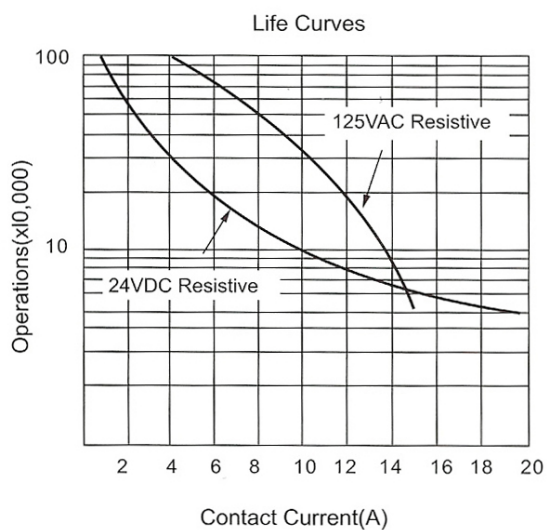
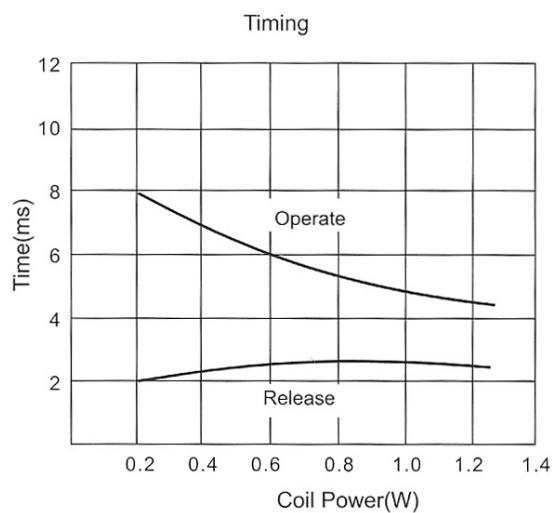
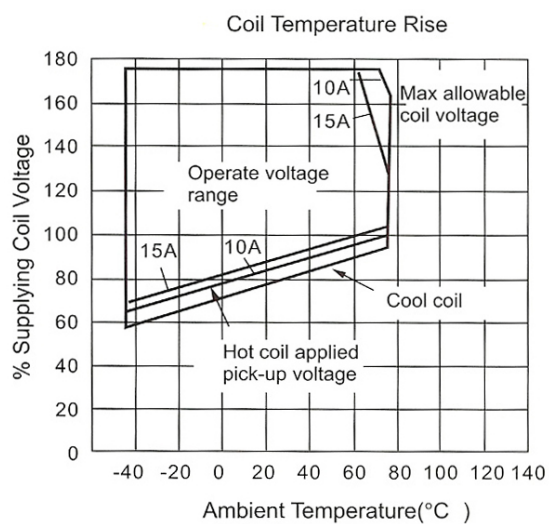
6. DIMENSIONS(mm)



◆ POWER RELAY

DV6 Relay

7. DV6 CHARACTERISTIC CHART DATA



◆ POWER RELAY

DHRM2 Relay



1. COIL DATA

1-1. Nominal Voltage	3, 5, 6, 9, 12, 24, 48VDC
1-2. Coil Resistance	Refer to Coil Data Chart
1-3. Operate Voltage	Refer to Coil Data Chart
1-4. Release Voltage	Refer to Coil Data Chart
1-5. Nominal Power	540mW, 720mW

2. CONTACT DATA

2-1. Contact Form	A-1 Form A, C-1 Form C
2-2. Contact Material	Ag Alloy
2-3. Contact Rating	Resistive : 16A 250VAC / 30VDC, TV-8 Inductive : 8A 250VAC / 30VDC(COS Φ =0.4, L/R=7ms)
2-4. Max. Switching Voltage	250VAC / 30VDC
2-5. Max. Switching Current	16A
2-6. Max. Switching Power	4,000VA, 480W
2-7. Min. Switching Load	5VDC, 100mA
2-8. Contact Resistance	Max. 50m Ω (6VDC 1A)
2-9. Life	
Electrical	100,000 operations
Mechanical	10,000,000 operations

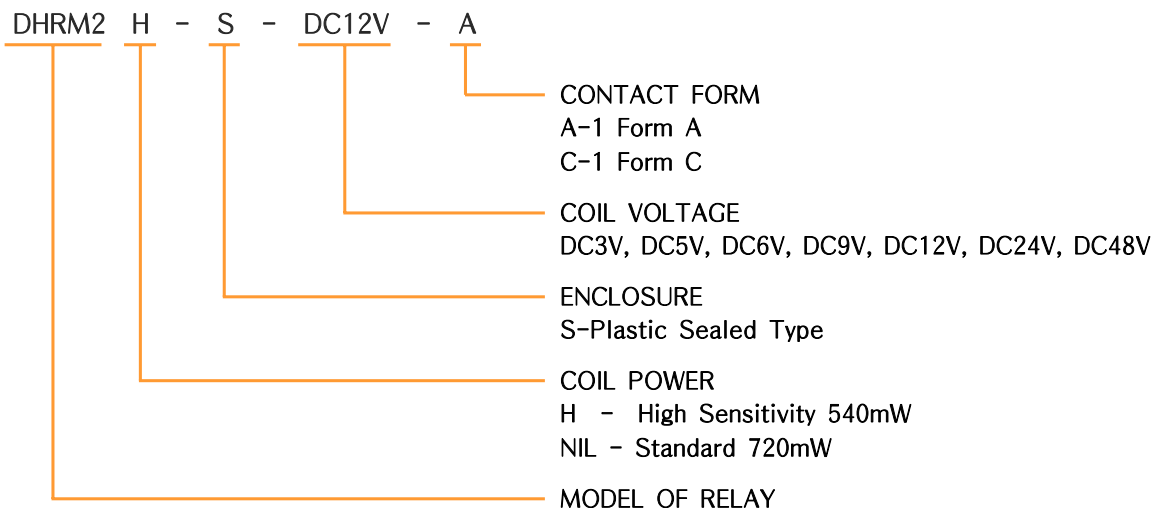
3. GENERAL DATA

3-1. Insulation Resistance	Min. 1,000M Ω . 500VDC
3-2. Dielectric Strength	1,000VAC, 1min between open contacts 4,500VAC, 1min between coil and contacts
3-3. Operate Time	Max. 15ms
3-4. Release Time	Max. 8ms
3-5. Operate Temperature	-30 $^{\circ}$ C ~ +55 $^{\circ}$ C (720mW) -30 $^{\circ}$ C ~ +70 $^{\circ}$ C (540mW)
3-6. Shock Resistance	
Endurance	1,000m/s ²
Misoperation	100m/s ²
3-7. Vibration Resistance	
Endurance	10~55Hz, 1.5mm double amplitude
Misoperation	10~55Hz, 1.5mm double amplitude
3-8. Humidity	35%~95%RH, +40 $^{\circ}$ C
3-9. Weight	Approximately 13.0g
3-10. Safety	UL NO. E164730 CSA NO. 1063015(LR 106040) TUV NO. 50062823

◆ POWER RELAY

DHRM2 Relay

4. ORDER CODE

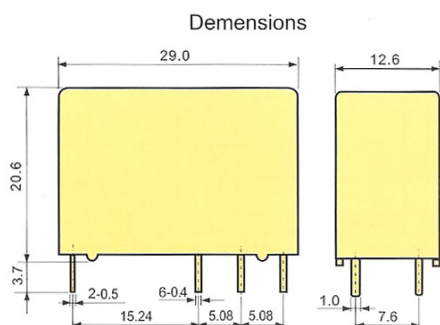


5. COIL DATA CHART

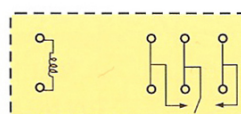
20℃

Model	Nominal Voltage VDC	Coil Resistance $\pm 10\% \Omega$	Operate Voltage $\leq VDC$	Release Voltage $\geq VDC$	Coil Power mW
DHRM2-(S)-DC3V	3	12.5	2.25	0.3	720
DHRM2-(S)-DC5V	5	35	3.75	0.5	
DHRM2-(S)-DC6V	6	50	4.5	0.6	
DHRM2-(S)-DC9V	9	112.5	6.75	0.9	
DHRM2-(S)-DC12V	12	200	9.0	1.2	
DHRM2-(S)-DC24V	24	800	18.0	2.4	
DHRM2-(S)-DC48V	48	3200	36.0	4.8	
DHRM2H-(S)-DC3V	3	17	2.25	0.3	540
DHRM2H-(S)-DC5V	5	46	3.75	0.5	
DHRM2H-(S)-DC6V	6	67	4.5	0.6	
DHRM2H-(S)-DC9V	9	150	6.75	0.9	
DHRM2H-(S)-DC12V	12	267	9.0	1.2	
DHRM2H-(S)-DC24V	24	1067	18.0	2.4	
DHRM2H-(S)-DC48V	48	4267	36.0	4.8	

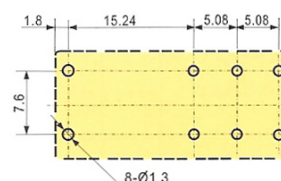
6. DIMENSIONS(mm)



Wiring Diagrams (Bottom View)



Mounting Hole Layout(Bottom View)

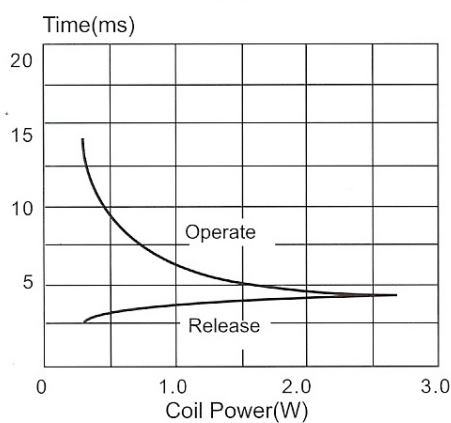


◆ POWER RELAY

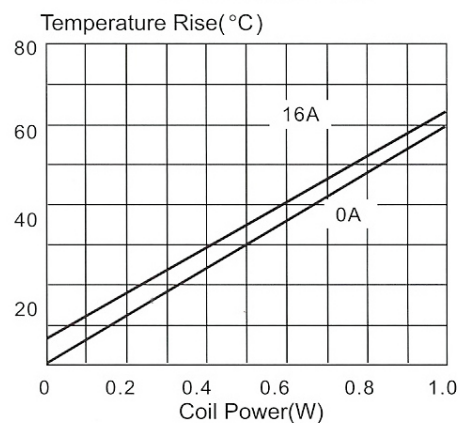
DHRM2 Relay

7. DHRM2 CHARACTERISTIC CHART DATA

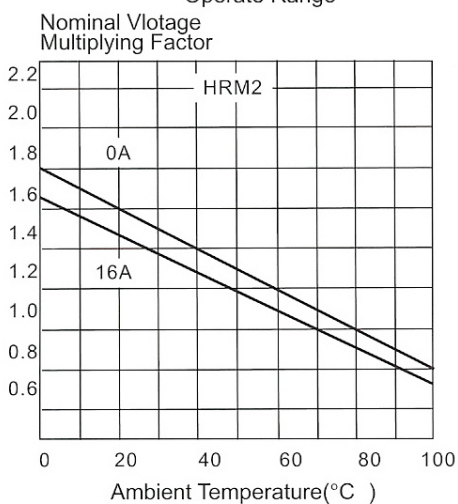
Timing



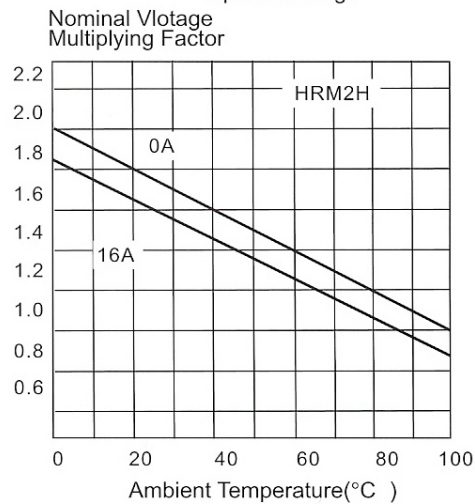
Coil Temperature Rise



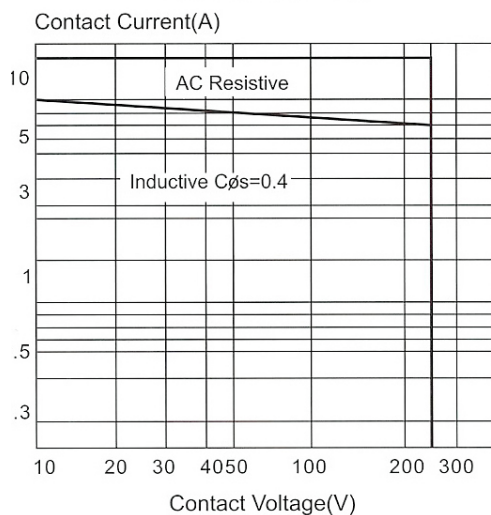
Operate Range



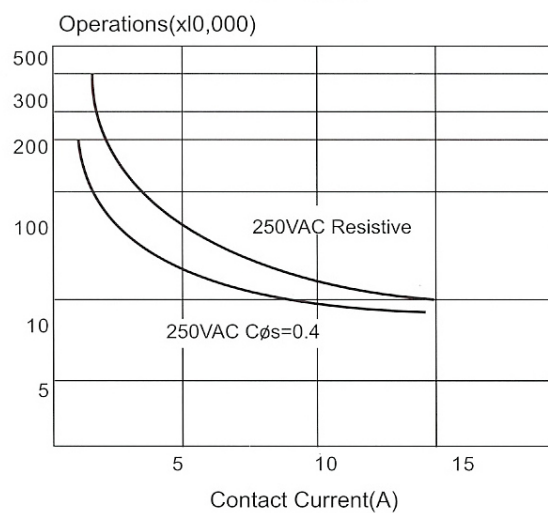
Operate Range



Max.Switching Power



Life Curves



◆ POWER RELAY

DHRM3 Relay



1. COIL DATA

1-1. Nominal Voltage	3, 5, 6, 9, 12, 24, 48VDC
1-2. Coil Resistance	Refer to Coil Data Chart
1-3. Operate Voltage	Refer to Coil Data Chart
1-4. Release Voltage	Refer to Coil Data Chart
1-5. Nominal Power	150mW, 250mW, 540mW

2. CONTACT DATA

2-1. Contact Form	A-1 Form A
2-2. Contact Material	Ag Alloy
2-3. Contact Rating	10A 250VAC / 30VDC, TV-5
2-4. Max. Switching Voltage	250VAC / 30VDC
2-5. Max. Switching Current	10A
2-6. Max. Switching Power	2,500VA, 300W
2-7. Min. Switching Load	5VDC, 100mA
2-8. Contact Resistance	Max. 100m Ω (6VDC 1A)
2-9. Life	
Electrical	100,000 operations
Mechanical	2,000,000 operations

3. GENERAL DATA

3-1. Insulation Resistance	Min. 1,000M Ω 500VDC
3-2. Dielectric Strength	1,000VAC, 1min between open contacts 4,000VAC, 1min between coil and contacts
3-3. Surge Strength	10,000VAC
3-4. Operate Time	Max. 15ms
3-5. Release Time	Max. 8ms
3-6. Operate Temperature	-40℃ ~ +70℃
3-7. Shock Resistance	
Endurance	1,000m/s ²
Misoperation	100m/s ²
3-8. Vibration Resistance	
Endurance	10~55Hz, 1.5mm double amplitude
Misoperation	10~55Hz, 1.5mm double amplitude
3-9. Humidity	35%~95%RH, +40℃
3-10. Weight	Approximately 10.0g
3-11. Safety	UL NO. E164730 CSA NO. 1063016(LR 109368) TUV NO. 50062740 VDE NO. 40018308



◆ POWER RELAY

DHRM3 Relay

4. ORDER CODE

DHRM3 H - S - DC12V - A

CONTACT FORM
A-1 Form A

COIL VOLTAGE
DC3V, DC5V, DC6V, DC9V, DC12V, DC24V, DC48V

ENCLOSURE
S-Plastic Sealed Type

COIL POWER
H - High Sensitivity 250mW
NIL - Standard 540mW

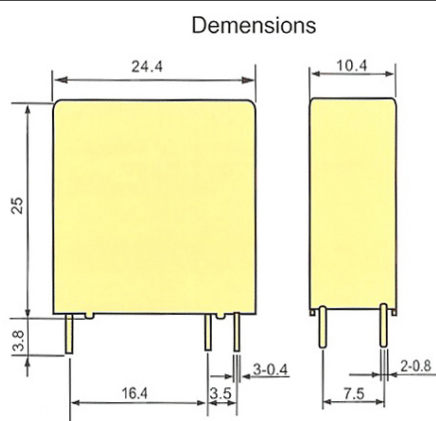
MODEL OF RELAY

5. COIL DATA CHART

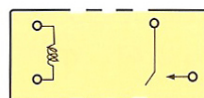
20℃

Model	Nominal Voltage VDC	Coil Resistance $\pm 10\% \Omega$	Operate Voltage $\leq VDC$	Release Voltage $\geq VDC$	Coil Power mW
DHRM3-(S)-DC3V	3	17	2.25	0.3	540
DHRM3-(S)-DC5V	5	47	3.75	0.5	
DHRM3-(S)-DC6V	6	67	4.5	0.6	
DHRM3-(S)-DC9V	9	150	6.75	0.9	
DHRM3-(S)-DC12V	12	267	9.0	1.2	
DHRM3-(S)-DC24V	24	1067	18.0	2.4	
DHRM3-(S)-DC48V	48	4267	36.0	4.8	
DHRM3H-(S)-DC3V	3	36	2.25	0.3	250
DHRM3H-(S)-DC5V	5	100	3.75	0.5	
DHRM3H-(S)-DC6V	6	144	4.5	0.6	
DHRM3H-(S)-DC9V	9	324	6.75	0.9	
DHRM3H-(S)-DC12V	12	576	9.0	1.2	
DHRM3H-(S)-DC24V	24	2304	18.0	2.4	
DHRM3H-(S)-DC48V	48	9216	36.0	4.8	

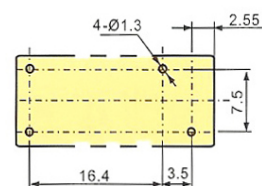
6. DIMENSIONS(mm)



Wiring Diagrams
(Bottom View)



Mounting Hole
Layout(Bottom View)

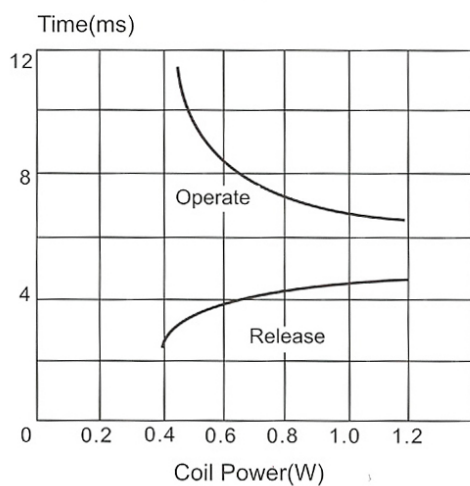


◆ POWER RELAY

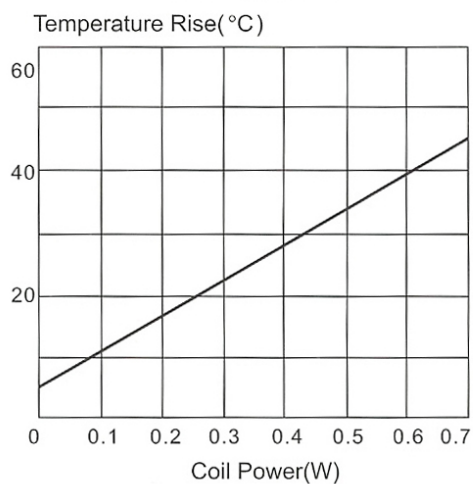
DHRM3 Relay

7. DHRM3 CHARACTERISTIC CHART DATA

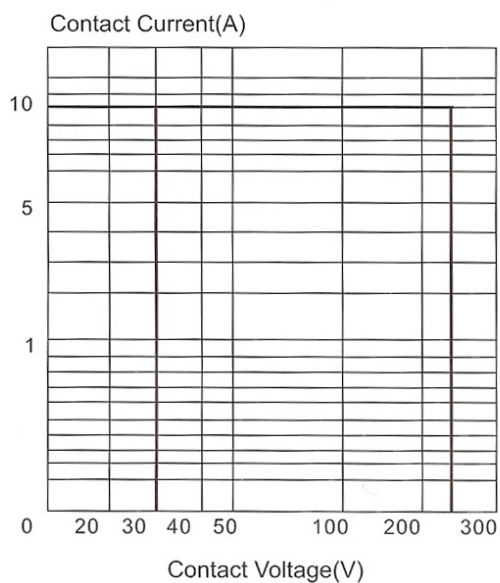
Timing



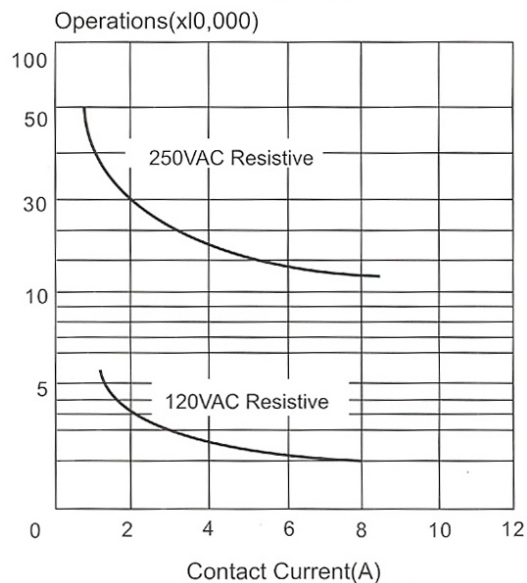
Coil Temperature Rise



Max. Switching Power



Life Curves



◆ POWER RELAY

DHCP1 Relay



1. COIL DATA

1-1. Nominal Voltage	5, 6, 9, 12, 24, 48VDC
1-2. Coil Resistance	Refer to Coil Data Chart
1-3. Operate Voltage	Refer to Coil Data Chart
1-4. Release Voltage	Refer to Coil Data Chart
1-5. Nominal Power	400mW

2. CONTACT DATA

2-1. Contact Form	A-1 Form A, C-1 Form C
2-2. Contact Material	Ag Alloy
2-3. Contact Rating	Resistive : 12A 250VAC / 30VDC Inductive : 5A 250VAC $\cos\Phi=0.4$
2-4. Max. Switching Voltage	380VAC / 30VDC
2-5. Max. Switching Current	12A
2-6. Max. Switching Power	3,000VA, 360W
2-7. Min. Switching Load	5VDC, 100mA
2-8. Contact Resistance	Max. 100m Ω (6VDC 1A)
2-9. Life	
Electrical	100,000 operations 50,000 operations (Inductive : $\cos\Phi=0.4$, L/R=7m/s)
Mechanical	20,000,000 operations

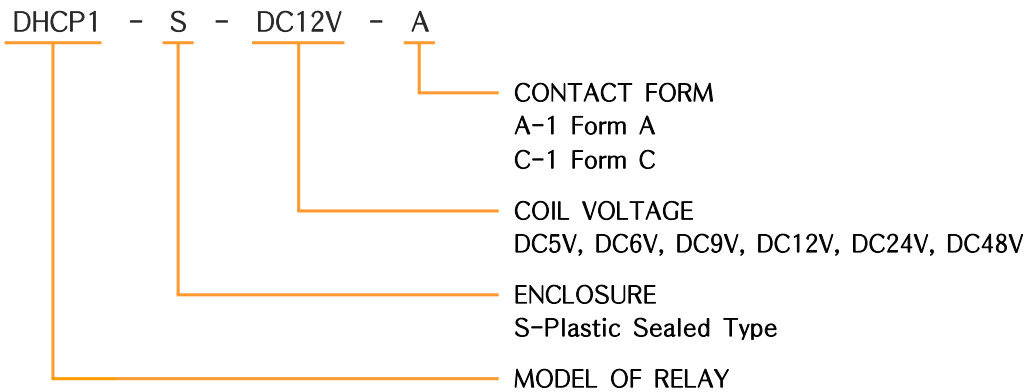
3. GENERAL DATA

3-1. Insulation Resistance	Min. 10,000M Ω 500VDC
3-2. Dielectric Strength	1,000VAC, 1min between open contacts 5,000VAC, 1min between coil and contacts
3-3. Operate Time	Max. 10ms
3-4. Release Time	Max. 5ms
3-5. Operate Temperature	-40℃ ~ +85℃
3-6. Shock Resistance	
Endurance	1,000m/s ²
Misoperation	100m/s ²
3-7. Vibration Resistance	
Endurance	10~55Hz, 1.5mm double amplitude
Misoperation	10~55Hz, 1.5mm double amplitude
3-8. Humidity	35%~95%RH, +40℃
3-9. Weight	Approximately 13.0g

◆ POWER RELAY

DHCP1 Relay

4. ORDER CODE



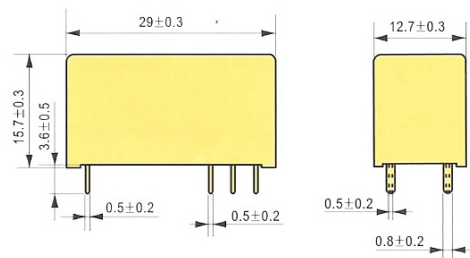
5. COIL DATA CHART

20℃

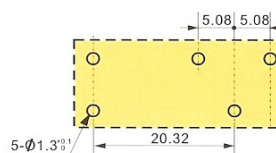
Model	Nominal Voltage VDC	Coil Resistance $\pm 10\% \Omega$	Operate Voltage $\leq VDC$	Release Voltage $\geq VDC$	Coil Power mW
DHCP1-(S)-DC5V	5	62.5	3.5	0.5	400
DHCP1-(S)-DC6V	6	90	4.2	0.6	
DHCP1-(S)-DC9V	9	202.5	6.3	0.9	
DHCP1-(S)-DC12V	12	360	8.4	1.2	
DHCP1-(S)-DC24V	24	1440	16.8	2.4	
DHCP1-(S)-DC48V	48	5760	33.6	4.8	

6. DEMENSIONS(mm)

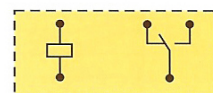
Dimensions(5mm)



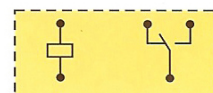
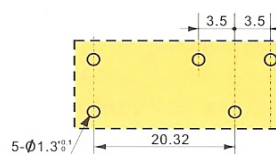
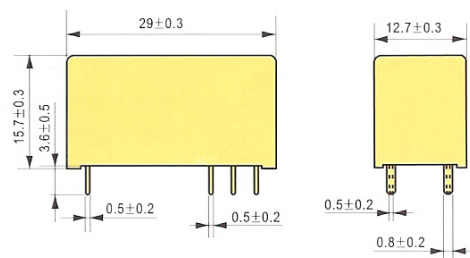
Wiring Diagrams (Bottom View)



Mounting Hole Layout(Bottom View)



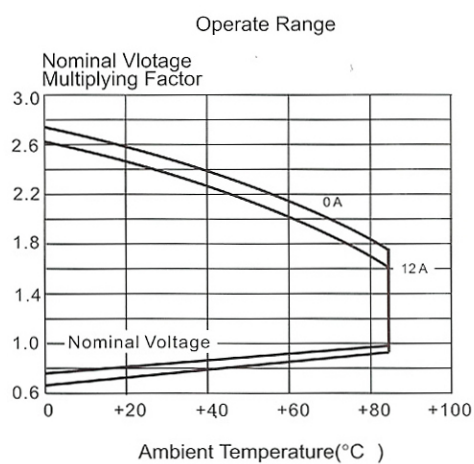
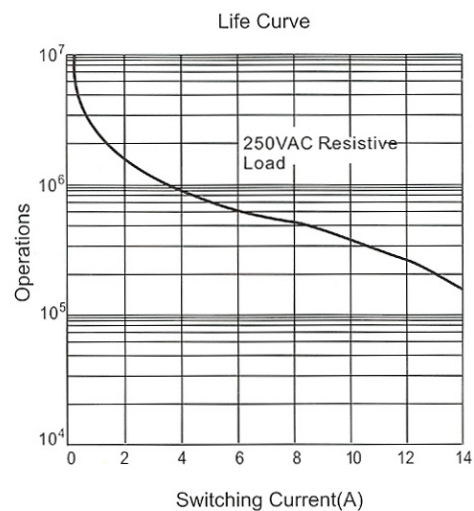
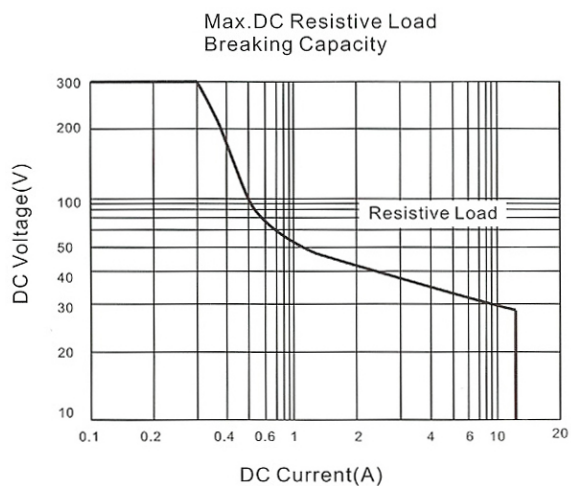
Dimensions(3.5mm)



◆ POWER RELAY

DHCP1 Relay

7. DHCP1 CHARACTERISTIC CHART DATA



◆ POWER RELAY

DHCP2 Relay



1. COIL DATA

1-1. Nominal Voltage	5, 6, 12, 24, 48VDC
1-2. Coil Resistance	Refer to Coil Data Chart
1-3. Operate Voltage	Refer to Coil Data Chart
1-4. Release Voltage	Refer to Coil Data Chart
1-5. Nominal Power	400mW

2. CONTACT DATA

2-1. Contact Form	A-2 Form A, C-2 Form C
2-2. Contact Material	Ag Alloy
2-3. Contact Rating	Resistive : 8A 250VAC / 30VDC Inductive : 4A 250VAC Cos Φ =0.4
2-4. Max. Switching Voltage	380VAC / 30VDC
2-5. Max. Switching Current	8A
2-6. Max. Switching Power	2,000VA, 240W
2-7. Min. Switching Load	5VDC, 100mA
2-8. Contact Resistance	Max. 100m Ω (6VDC 1A)
2-9. Life	
Electrical	100,000 operations 50,000 operations(Inductive:Cos Φ =0.4, L/R=7ms)
Mechanical	2,000,000 operations

3. GENERAL DATA

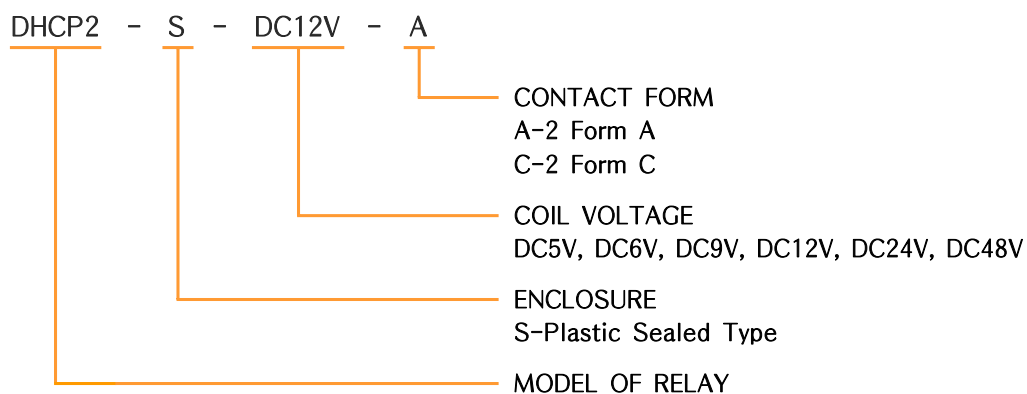
3-1. Insulation Resistance	Min. 10,000M Ω 500VDC
3-2. Dielectric Strength	1,000VAC, 1min between open contacts 5,000VAC, 1min between coil and contacts
3-3. Operate Time	Max. 10ms
3-4. Release Time	Max. 5ms
3-5. Operate Temperature	-40 $^{\circ}$ C ~ +85 $^{\circ}$ C
3-6. Shock Resistance	
Endurance	1,000m/s ²
Misoperation	100m/s ²
3-7. Vibration Resistance	
Endurance	10~55Hz, 1.5mm double amplitude
Misoperation	10~55Hz, 1.5mm double amplitude
3-8. Humidity	35%~95%RH, +40 $^{\circ}$ C
3-9. Weight	Approximately 13.0g
3-10. Safety	TUV NO. 50062453



◆ POWER RELAY

DHCP2 Relay

4. ORDER CODE

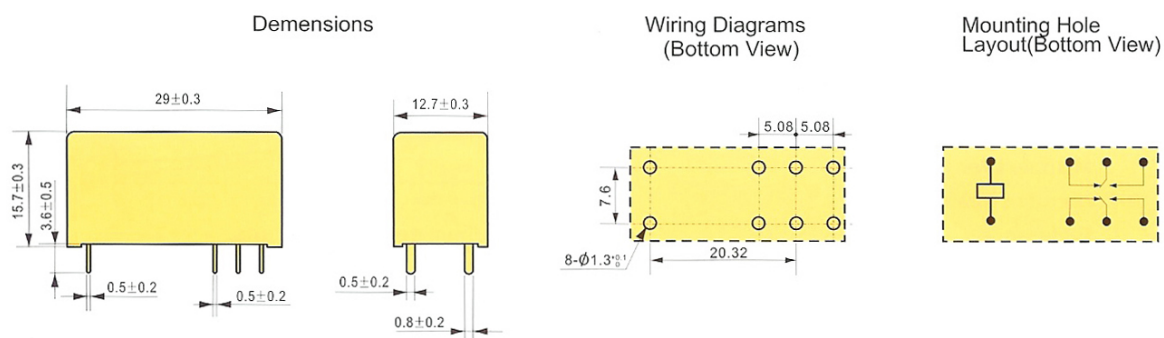


5. COIL DATA CHART

20℃

Model	Nominal Voltage VDC	Coil Resistance $\pm 10\% \Omega$	Operate Voltage $\leq VDC$	Release Voltage $\geq VDC$	Coil Power mW
DHCP2-(S)-DC5V	5	62.5	3.5	0.5	400
DHCP2-(S)-DC6V	6	90	4.2	0.6	
DHCP2-(S)-DC9V	9	202.5	6.3	0.9	
DHCP2-(S)-DC12V	12	360	8.4	1.2	
DHCP2-(S)-DC24V	24	1440	16.8	2.4	
DHCP2-(S)-DC48V	48	5760	33.6	4.8	

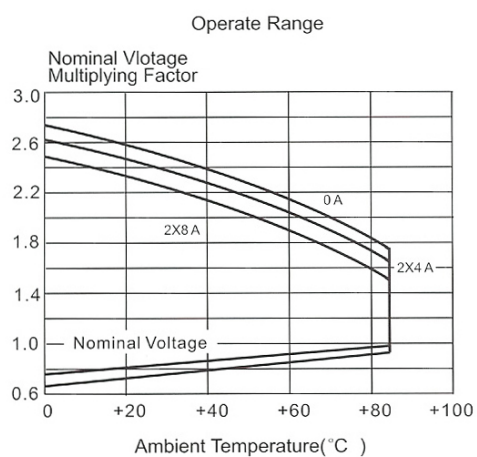
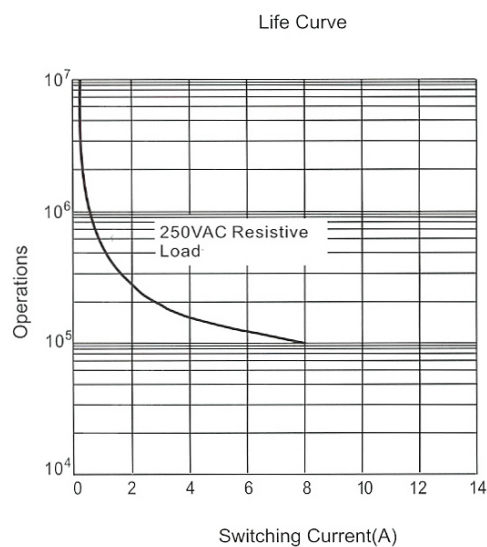
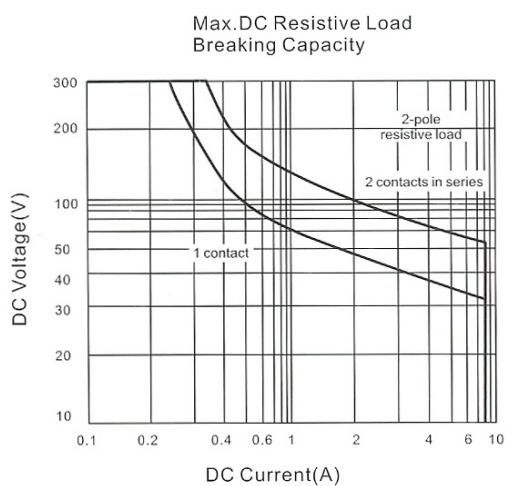
6. DEMENSIONS(mm)



◆ POWER RELAY

DHCP2 Relay

7. DHCP2 CHARACTERISTIC CHART DATA



◆ POWER RELAY



DHCP3 Relay

1. COIL DATA

1-1. Nominal Voltage	5, 6, 9, 12, 24, 48VDC
1-2. Coil Resistance	Refer to Coil Data Chart
1-3. Operate Voltage	Refer to Coil Data Chart
1-4. Release Voltage	Refer to Coil Data Chart
1-5. Nominal Power	400mW

2. CONTACT DATA

2-1. Contact Form	A-1 Form A, C-1 Form C
2-2. Contact Material	Ag Alloy
2-3. Contact Rating	Resistive : 16A 250VAC / 30VDC Inductive : 8A 250VAC $\cos\Phi=0.4$
2-4. Max. Switching Voltage	380VAC / 30VDC
2-5. Max. Switching Current	16A
2-6. Max. Switching Power	4,000VA, 240W
2-7. Min. Switching Load	5VDC, 100mA
2-8. Contact Resistance	Max. 100m Ω (6VDC 1A)
2-9. Life	
Electrical	100,000 operations 50,000 operations (Inductive : $\cos\Phi=0.4$, L/R=7ms)
Mechanical	20,000,000 operations

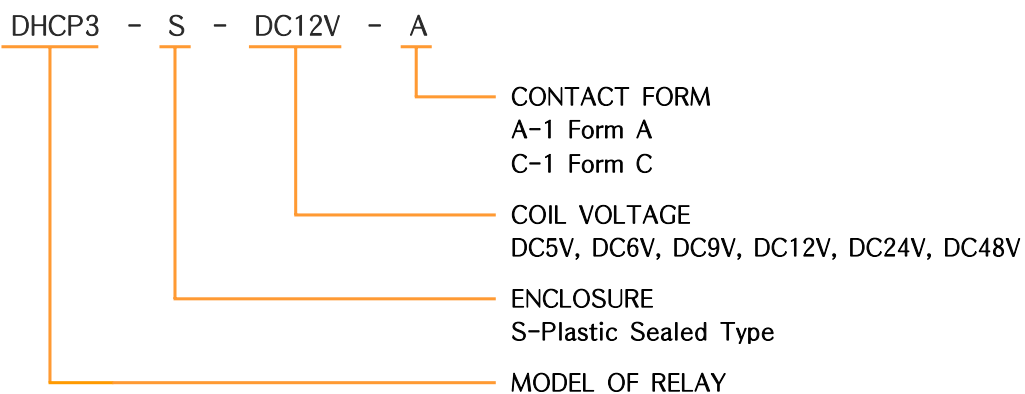
3. GENERAL DATA

3-1. Insulation Resistance	Min. 10,000M Ω . 500VDC
3-2. Dielectric Strength	1,000VAC, 1min between open contacts 5,000VAC, 1min between coil and contacts
3-3. Operate Time	Max. 10ms
3-4. Release Time	Max. 5ms
3-5. Operate Temperature	-40℃ ~ +85℃
3-6. Shock Resistance	
Endurance	1,000m/s ²
Misoperation	100m/s ²
3-7. Vibration Resistance	
Endurance	10~55Hz, 1.5mm double amplitude
Misoperation	10~55Hz, 1.5mm double amplitude
3-8. Humidity	35%~95%RH, +40℃
3-9. Weight	Approximately 13.0g

◆ POWER RELAY

DHCP3 Relay

4. ORDER CODE

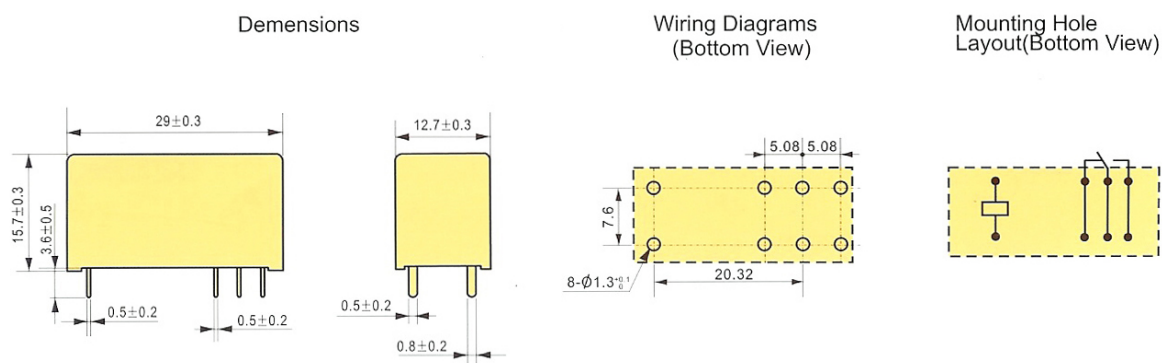


5. COIL DATA CHART

20℃

Model	Nominal Voltage VDC	Coil Resistance $\pm 10\% \Omega$	Operate Voltage $\leq VDC$	Release Voltage $\geq VDC$	Coil Power mW
DHCP3-(S)-DC5V	5	62.5	3.5	0.5	400
DHCP3-(S)-DC6V	6	90	4.2	0.6	
DHCP3-(S)-DC9V	9	202.5	6.3	0.9	
DHCP3-(S)-DC12V	12	360	8.4	1.2	
DHCP3-(S)-DC24V	24	1440	16.8	2.4	
DHCP3-(S)-DC48V	48	5760	33.6	4.8	

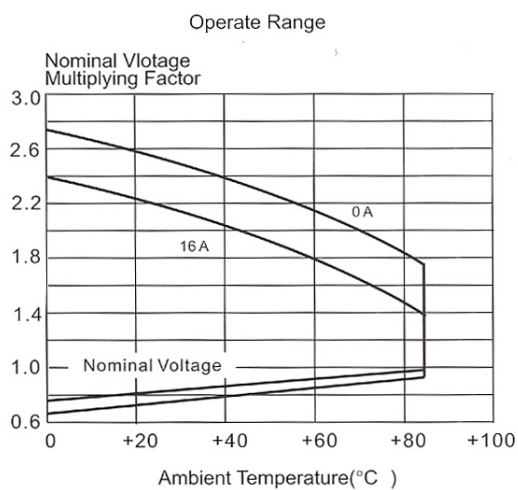
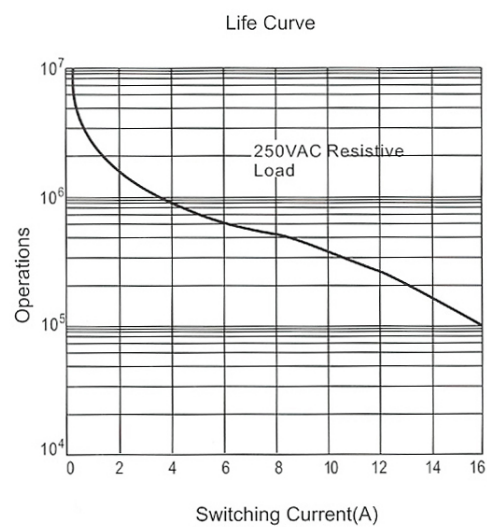
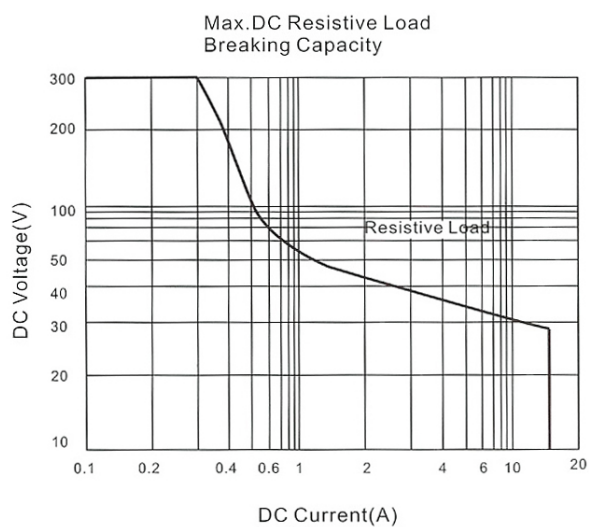
6. DIMENSIONS(mm)



◆ POWER RELAY

DHCP3 Relay

7. DHCP3 CHARACTERISTIC CHART DATA



◆ POWER RELAY

DCMP7 Relay



1. COIL DATA

1-1. Nominal Voltage	5, 6, 9, 12, 24, 48VDC
1-2. Coil Resistance	Refer to Coil Data Chart
1-3. Operate Voltage	Refer to Coil Data Chart
1-4. Release Voltage	Refer to Coil Data Chart
1-5. Nominal Power	900mW

2. CONTACT DATA

2-1. Contact Form	A-1 Form A, C-1 Form C
2-2. Contact Material	Ag Alloy
2-3. Contact Rating	A : 30A 250VAC / 24VDC C : NO : 20A 250VAC / 24VDC NC : 15A 250VAC / 24VDC
2-4. Max. Switching Voltage	250VAC / 24VDC
2-5. Max. Switching Current	30A
2-6. Max. Switching Power	7,500VA, 720W
2-7. Min. Switching Load	5VDC, 100mA
2-8. Contact Resistance	Max. 100mΩ (6VDC 1A)
2-9. Life	
Electrical	100,000 operations
Mechanical	10,000,000 operations

3. GENERAL DATA

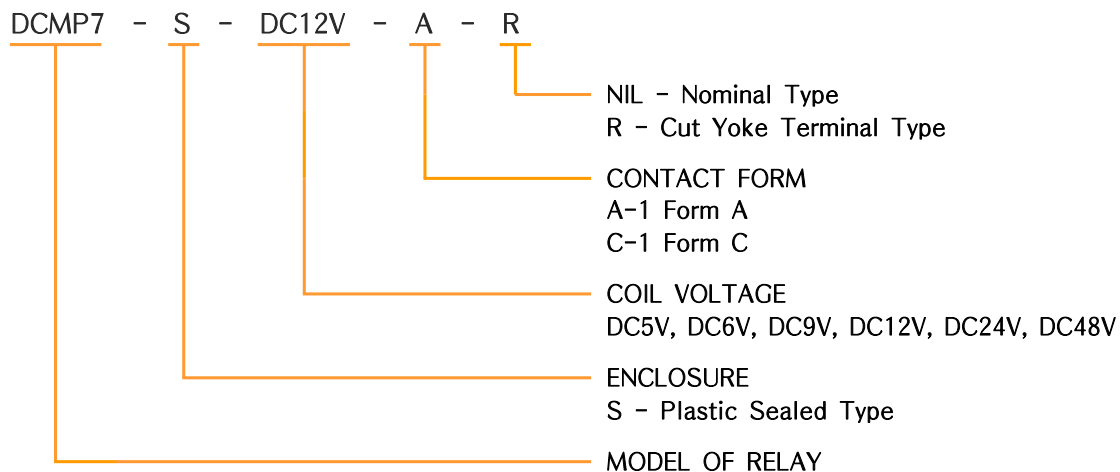
3-1. Insulation Resistance	Min. 1,000MΩ 500VDC
3-2. Dielectric Strength	1,500VAC, 1min between open contacts 2,500VAC, 1min between coil and contacts
3-3. Operate Time	Max. 15ms
3-4. Release Time	Max. 10ms
3-5. Operate Temperature	-30℃ ~ +85℃
3-6. Shock Resistance	
Endurance	1,000m/s ²
Misoperation	100m/s ²
3-7. Vibration Resistance	
Endurance	10~55Hz, 1.5mm double amplitude
Misoperation	10~55Hz, 1.5mm double amplitude
3-8. Humidity	35%~95%RH, +40℃
3-9. Weight	Approximately 27.0g
3-10. Safety	UL NO. E164730 VDE NO. 40009646 TUV NO. 50062740



◆ POWER RELAY

DCMP7 Relay

4. ORDER CODE



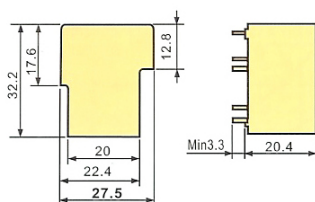
5. COIL DATA CHART

20℃

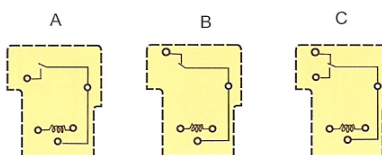
Model	Nominal Voltage VDC	Coil Resistance $\pm 10\% \Omega$	Operate Voltage $\leq VDC$	Release Voltage $\geq VDC$	Coil Power mW
DCMP7-(S)-DC5V	5	27.8	3.5	0.5	900
DCMP7-(S)-DC6V	6	40	4.2	0.6	
DCMP7-(S)-DC9V	9	90	6.3	0.9	
DCMP7-(S)-DC12V	12	160	8.4	1.2	
DCMP7-(S)-DC24V	24	640	16.8	2.4	
DCMP7-(S)-DC48V	48	2560	33.6	4.8	

6. DIMENSIONS(mm)

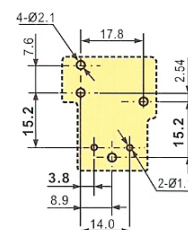
DCMP7 Dimensions



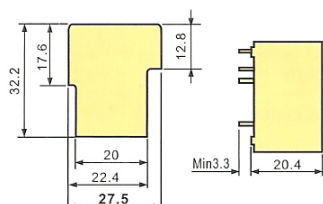
Wiring Diagrams (Bottom View)



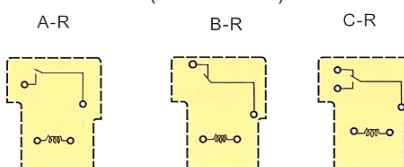
Mounting Hole Layout (Bottom View)



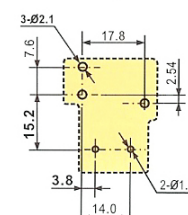
DCMP7-R Dimensions



Wiring Diagrams (Bottom View)



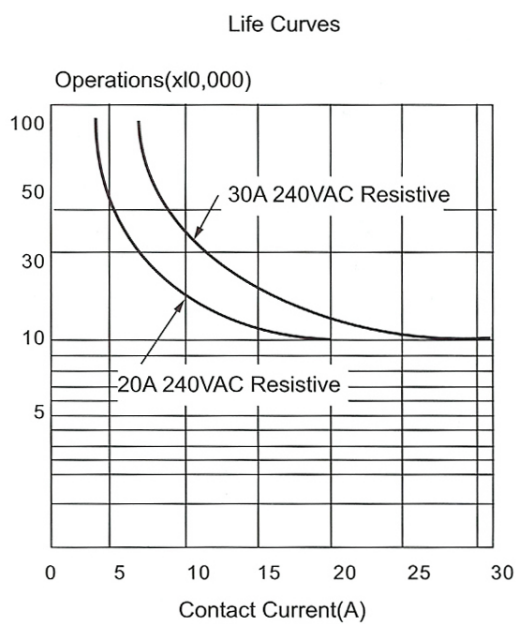
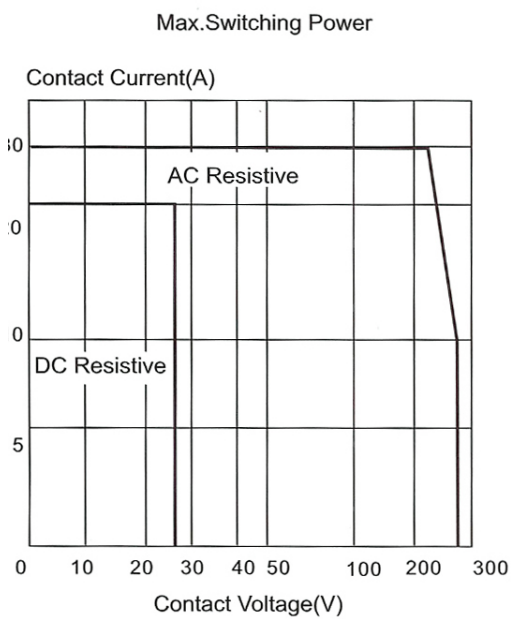
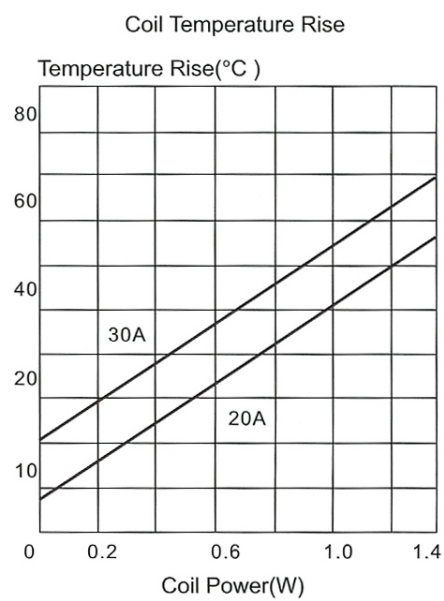
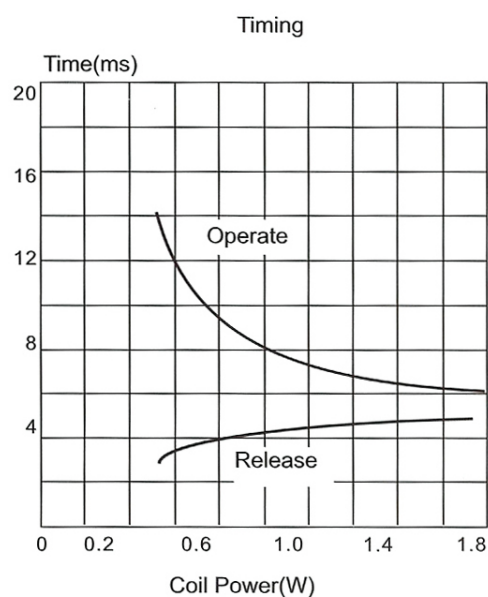
Mounting Hole Layout (Bottom View)



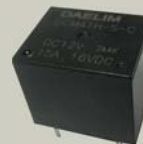
◆ POWER RELAY

DCMP7 Relay

7. DCMP7 CHARACTERISTIC CHART DATA



◆ AUTOMOTIVE RELAY



DCMA1 Relay

1. COIL DATA

1-1. Nominal Voltage	6, 12, 24VDC
1-2. Coil Resistance	Refer to Coil Data Chart
1-3. Operate Voltage	Refer to Coil Data Chart
1-4. Release Voltage	Refer to Coil Data Chart
1-5. Nominal Power	360mW, 800mW

2. CONTACT DATA

2-1. Contact Form	A-1 Form A, B-1 Form B, C-1 Form C
2-2. Contact Material	Ag Alloy
2-3. Contact Rating	15A / 14VDC Resistive (C-1 Form C) 20A / 14VDC Resistive (A-1 Form A)
2-4. Max. Switching Voltage	75VDC
2-5. Max. Switching Current	20A
2-6. Max. Switching Power	280W
2-7. Contact Resistance	Max. 100mΩ (6VDC 1A)
2-8. Life	
Electrical	100,000 operations at nominal load
Mechanical	10,000,000 operations

3. GENERAL DATA

3-1. Insulation Resistance	Min. 100MΩ. 500VDC
3-2. Dielectric Strength	750VAC, 1min between open contacts 1,000VAC, 1min between coil and contacts
3-3. Operate Time	Max. 15ms
3-4. Release Time	Max. 10ms
3-5. Operate Temperature	-40℃ ~ +85℃
3-6. Shock Resistance	
Endurance	1,000m/s ²
Misoperation	100m/s ²
3-7. Vibration Resistance	
Endurance	10~55Hz, 1.5mm double amplitude
Misoperation	10~55Hz, 1.5mm double amplitude
3-8. Weight	Approximately 10.0g

4. ORDER CODE

DCMA1	H	-	S	-	DC12V	-	A	
								CONTACT FORM
								A-1 Form A, B-1 Form B, C-1 Form C
								COIL VOLTAGE
								DC6V, DC12V, DC24V
								ENCLOSURE
								S-Plastic Sealed Type
								COIL POWER
								H - High Sensitivity
								NIL - Standard
								MODEL OF RELAY

◆ AUTOMOTIVE RELAY

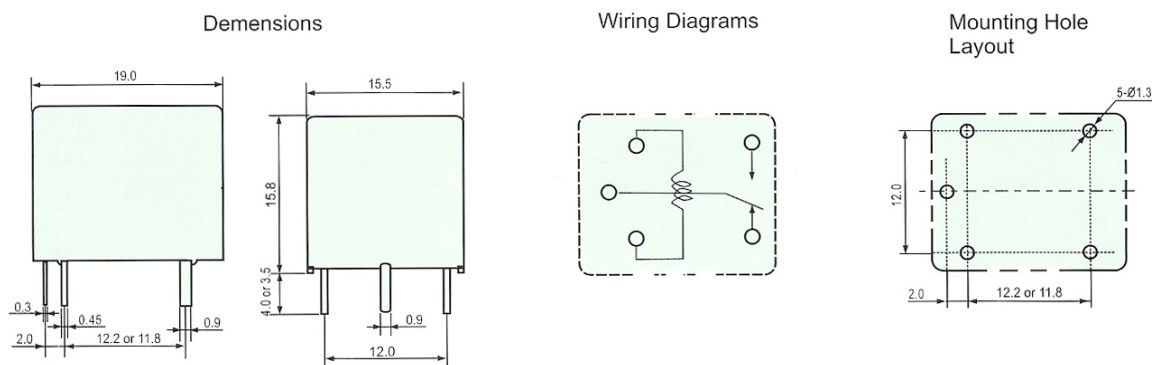
DCMA1 Relay

5. COIL DATA CHART

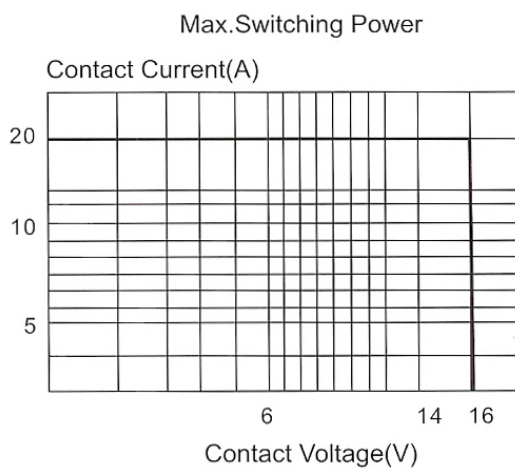
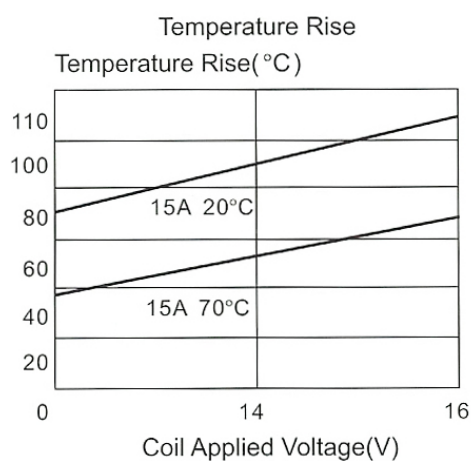
20℃

Model	Nominal Voltage VDC	Coil Resistance $\pm 10\% \Omega$	Operate Voltage $\leq VDC$	Release Voltage $\geq VDC$	Coil Power mW
DCMA1-(S)-DC6V	6	45	3.6	0.6	800
DCMA1-(S)-DC12V	12	180	7.2	1.2	
DCMA1-(S)-DC24V	24	720	14.4	2.4	
DCMA1H-(S)-DC12V	12	400	8.4	1.2	360
DCMA1H-(S)-DC24V	24	1600	16.8	4.8	

6. DIMENSIONS(mm)



7. DCMA1 CHARACTERISTIC CHART DATA



◆ AUTOMOTIVE RELAY



DCMA2 Relay

1. COIL DATA

1-1. Nominal Voltage	3, 5, 6, 9, 12, 24VDC
1-2. Coil Resistance	Refer to Coil Data Chart
1-3. Operate Voltage	Refer to Coil Data Chart
1-4. Release Voltage	Refer to Coil Data Chart
1-5. Nominal Power	1,100mW

2. CONTACT DATA

2-1. Contact Form	A-1 Form A, C-1 Form C, U-2 Form U, W-2 Form W, V-2 Form V
2-2. Contact Material	Ag Alloy
2-3. Contact Rating	Refer to Table1
2-4. Max. Switching Voltage	75VDC
2-5. Max. Switching Current	20A
2-6. Max. Switching Power	280W
2-7. Max. Load Current	Table 1
(14VDC Load Voltage)	

Load	A	C		W		U	V
		NO	NC	NO	NC		
Contact Rating Current	15A	15A	10A	2×7A	2×5A	2×10A	2×7A
Max. Make Current	60A	60A	12A	2×30A	2×5A	2×40A	2×8A
Max. Break Current	20A	20A	10A	2×15A	2×5A	2×20A	2×7A

2-8. Contact Resistance	Max. 100mΩ (6VDC 1A)
2-9. Life	
Electrical	100,000 operations
Mechanical	10,000,000 operations

3. GENERAL DATA

3-1. Insulation Resistance	Min. 100MΩ. 500VDC
3-2. Dielectric Strength	500VAC, 1min between open contacts 1,000VAC, 1min between coil and contacts
3-3. Operate Time	Max. 3ms
3-4. Release Time	Max. 1.5ms
3-5. Operate Temperature	-40℃ ~ +85℃
3-6. Shock Resistance	
Endurance	1,000m/s ²
Misoperation	100m/s ²
3-7. Vibration Resistance	
Endurance	10~55Hz, 1.5mm double amplitude
Misoperation	10~55Hz, 1.5mm double amplitude
3-8. Weight	Approximately 12.0g Approximately 8.0g (Open Type)

◆ AUTOMOTIVE RELAY

DCMA2 Relay

4. ORDER CODE

DCMA2 - S - DC12V - A

CONTACT FORM

A-1 Form A, C-1 Form C, U-2 Form U

W-2 Form W, V-2 Form V

COIL VOLTAGE

DC3V, DC5V, DC6V, DC9V, DC12V, DC24V

ENCLOSURE

S-Plastic Sealed Type

NIL - Open Type

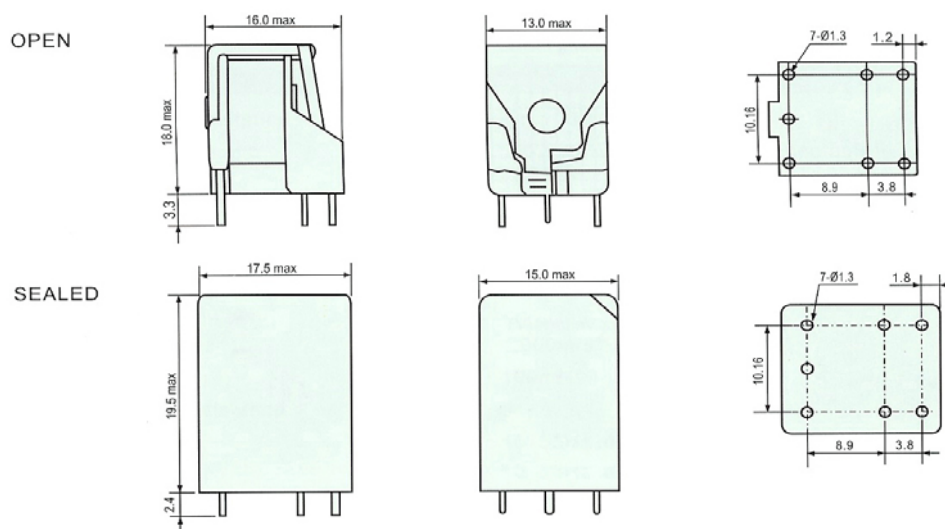
MODEL OF RELAY

5. COIL DATA CHART

20℃

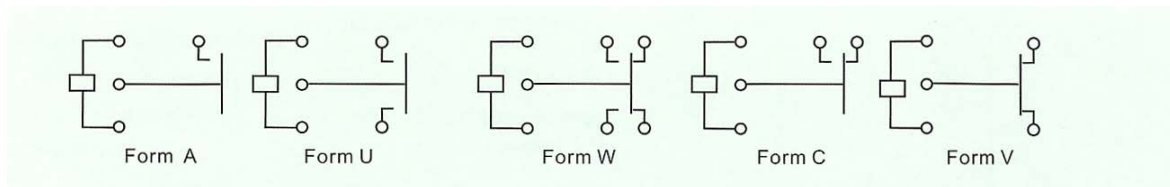
Model	Nominal Voltage VDC	Coil Resistance $\pm 10\% \Omega$	Operate Voltage $\leq VDC$	Release Voltage $\geq VDC$	Coil Power mW
DCMA2-(S)-DC3V	3	8.2	2.1	0.3	1,100
DCMA2-(S)-DC5V	5	22.7	3.5	0.5	
DCMA2-(S)-DC6V	6	32.7	4.2	0.6	
DCMA2-(S)-DC9V	9	76.6	6.3	0.9	
DCMA2-(S)-DC12V	12	130.9	8.4	1.2	
DCMA2-(S)-DC24V	24	523.6	16.8	4.8	

6. DIMENSIONS(mm)

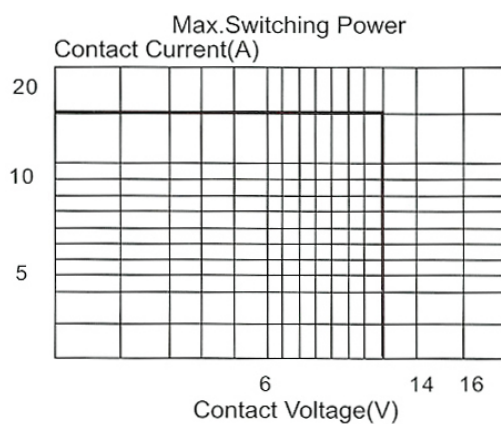
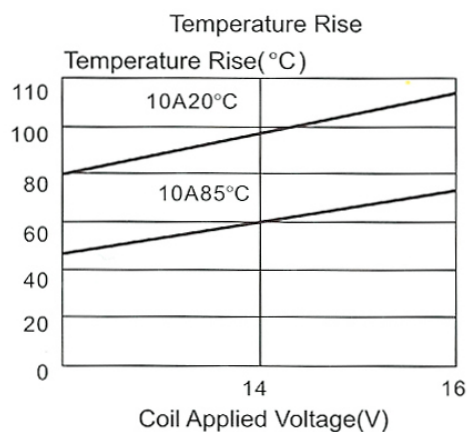


◆ AUTOMOTIVE RELAY

DCMA2 Relay



7. DCMA2 CHARACTERISTIC CHART DATA



◆ AUTOMOTIVE RELAY

DCMA31 Relay



1. COIL DATA

1-1. Nominal Voltage	6, 12, 24VDC
1-2. Coil Resistance	Refer to Coil Data Chart
1-3. Operate Voltage	Refer to Coil Data Chart
1-4. Release Voltage	Refer to Coil Data Chart
1-5. Nominal Power	1,600mW

2. CONTACT DATA

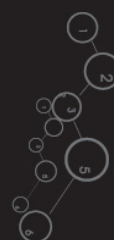
2-1. Contact Form	A-1 Form A, B-1 Form B, C-1 Form C
2-2. Contact Material	Ag Alloy
2-3. Contact Rating	30A 14VDC Resistive(1 Form C) 40A 14VDC Resistive(1 Form A) 30A 14VDC Resistive(1 Form B)
2-4. Max. Switching Voltage	75VDC
2-5. Max. Switching Current	40A
2-6. Max. Switching Power	420W(1 Form C), 560W(1 Form A)
2-7. Max. Load Current(14VDC Load Voltage)	

Load	A	B	C	
			NO	NC
Contact Rating Current	40A	30A	40A	30A
Max. Make Current	100A	60A	100A	30A
Max. Break Current	40A	30A	40A	30A

2-8. Contact Resistance	Max. 100mΩ (6VDC 1A)
2-9. Life	
Electrical	100,000 operations
Mechanical	10,000,000 operations

3. GENERAL DATA

3-1. Insulation Resistance	Min. 100MΩ 500VDC
3-2. Dielectric Strength	500VAC, 1min between open contacts 500VAC, 1min between coil and contacts
3-3. Operate Time	Max. 10ms
3-4. Release Time	Max. 10ms
3-5. Operate Temperature	-40℃ ~ +85℃
3-6. Shock Resistance	
Endurance	1,000m/s ²
Misoperation	100m/s ²
3-7. Vibration Resistance	
Endurance	10~55Hz, 1.5mm double amplitude
Misoperation	10~55Hz, 1.5mm double amplitude
3-8. Humidity	35%~95%RH, +40℃
3-9. Weight	Approximately 37.0g (With Shoulder) Approximately 32.0g (No Shoulder)



◆ AUTOMOTIVE RELAY

DCMA31 Relay

4. ORDER CODE

DCMA31 - DC12V - A - R - D - NIL

- NIL - With Shoulder
NS - No Shoulder
- D - With Diode
NIL - Standard
- R - With Resistance
6V-180Ω, 12V-680Ω, 24V-2,700Ω
NIL-Standard
- Contact Arrangement
A-1 Form A, B-1 Form B, C-1 form C
- Coil Voltage
- MODEL OF RELAY

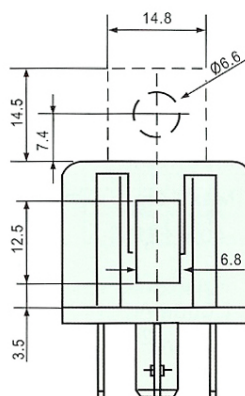
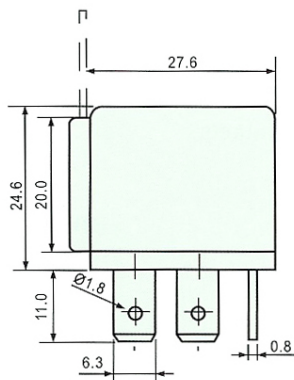
5. COIL DATA CHART

20℃

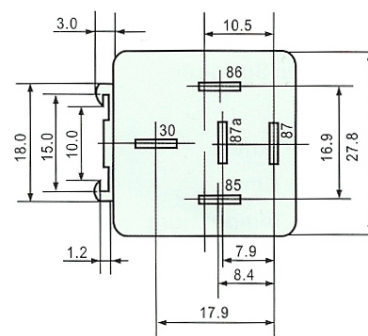
Model	Nominal Voltage VDC	Coil Resistance $\pm 10\% \Omega$	Operate Voltage $\leq VDC$	Release Voltage $\geq VDC$	Coil Power mW
DCMA31-DC6V	6	22.5	4.2	0.6	1,600
DCMA31-DC12V	12	90	8.4	1.2	
DCMA31-DC24V	24	360	16.8	2.4	

6. DIMENSIONS(mm)

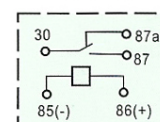
Dimensions



Mounting Hole Layout

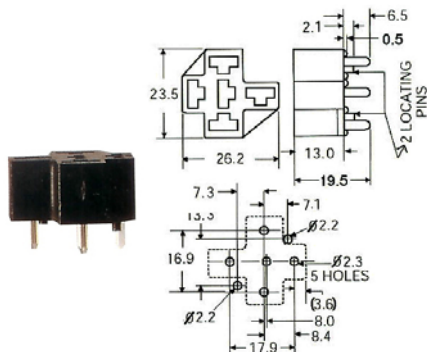


Wiring Diagrams

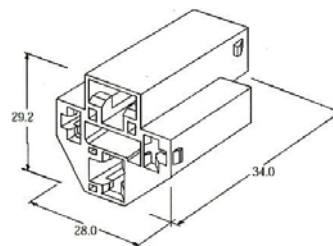


◆ AUTOMOTIVE RELAY

DCMA31 Relay

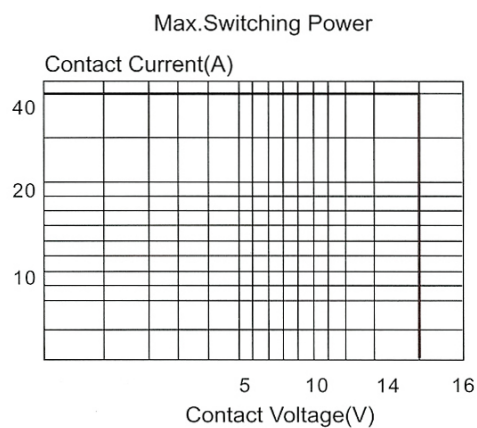
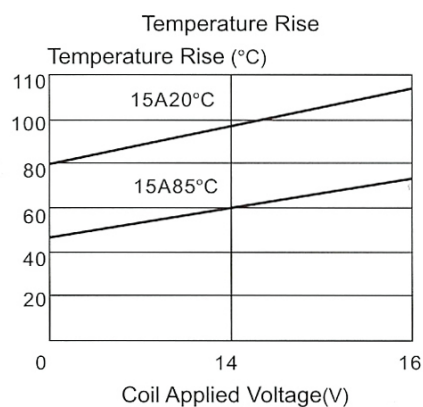


<PCB Socket>



<Wire Harness Socket>

7. DCMA31 CHARACTERISTIC CHART DATA



◆ AUTOMOTIVE RELAY



DCMA4 Relay

1. COIL DATA

1-1. Nominal Voltage	6, 9, 12, 24VDC
1-2. Coil Resistance	Refer to Coil Data Chart
1-3. Operate Voltage	Refer to Coil Data Chart
1-4. Release Voltage	Refer to Coil Data Chart
1-5. Nominal Power	1,600mW

2. CONTACT DATA

2-1. Contact Form	A-1 Form A, C-1 Form C
2-2. Contact Material	Ag Alloy
2-3. Contact Rating	30A 14VDC Resistive (1C) 40A 14VDC Resistive (1A)
2-4. Max. Switching Voltage	75VDC
2-5. Max. Switching Current	40A
2-6. Max. Switching Power	420W(1C), 560W(1A)
2-7. Max. Load Current(12VDC Load Voltage)	

Load	A	C	
		NO	NC
Contact Rating Current	40A	40A	30A
Max. Make Current	100A	100A	30A
Max. Break Current	40A	40A	30A

2-8. Contact Resistance	Max. 100mΩ (6VDC 1A)
2-9. Life	
Electrical	100,000 operations
Mechanical	10,000,000 operations

3. GENERAL DATA

3-1. Insulation Resistance	Min. 100MΩ. 500VDC
3-2. Dielectric Strength	500VAC, 1min between open contacts 500VAC, 1min between coil and contacts
3-3. Operate Time	Max. 5ms
3-4. Release Time	Max. 3ms
3-5. Operate Temperature	-40℃ ~ +85℃
3-6. Shock Resistance	
Endurance	Min. 100m/s ²
Misoperation	Min. 1,000m/s ²
3-7. Vibration Resistance	
Endurance	10~55Hz, 1.5mm double amplitude
Misoperation	10~55Hz, 1.5mm double amplitude
3-8. Weight	Approximately 21.0g Approximately 15.0g (Open Type)



◆ AUTOMOTIVE RELAY

DCMA4 Relay

4. ORDER CODE

DCMA4 - S - DC12V - A - U

E - EUROPEAN FOOTPRINT
 U - USA FOOTPRINT

CONTACT ARRANGEMENT
 A-1 Form A, C-1 Form C

COIL VOLTAGE
 DC6V, DC9V, DC12V, DC24V

ENCLOSURE
 S-Washable
 NIL-Open Type

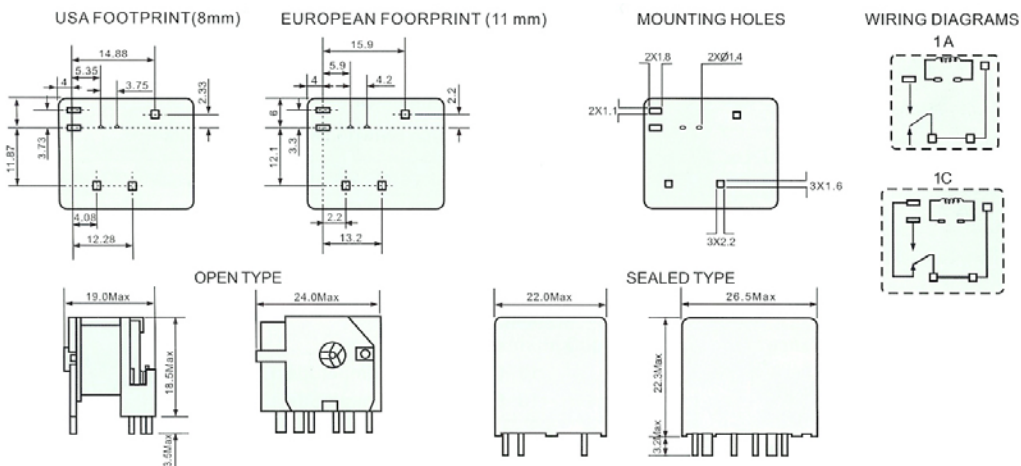
MODEL OF RELAY

5. COIL DATA CHART

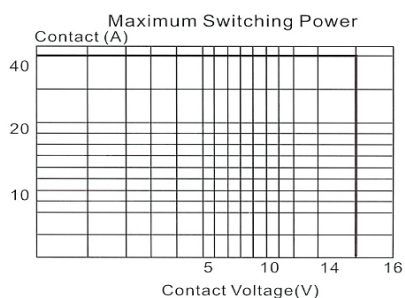
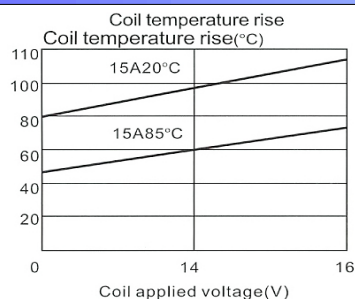
20℃

Model	Nominal Voltage VDC	Coil Resistance $\pm 10\% \Omega$	Operate Voltage $\leq VDC$	Release Voltage $\geq VDC$	Coil Power mW
DCMA4-(S)-DC6V	6	22.5	3.6	0.6	1,600
DCMA4-(S)-DC9V	9	51	5.4	0.9	
DCMA4-(S)-DC12V	12	90	7.8	1.2	
DCMA4-(S)-DC24V	24	360	14.4	4.8	

6. DEMENSIONS(mm)



7. DCMA4 CHARACTERISTIC CHART DATA



◆ AUTOMOTIVE RELAY



DCMA51 Relay

1. COIL DATA

1-1. Nominal Voltage	6, 9, 12, 24VDC
1-2. Coil Resistance	Refer to Coil Data Chart
1-3. Operate Voltage	Refer to Coil Data Chart
1-4. Release Voltage	Refer to Coil Data Chart
1-5. Nominal Power	600mW, 800mW

2. CONTACT DATA

2-1. Contact Form	A-1 Form A, B-1 form B, C-1 Form C
2-2. Contact Material	Ag Alloy
2-3. Contact Rating	20A 14VDC Resistive
2-4. Max. Switching Voltage	16VDC
2-5. Max. Carrying Current	35A / 10min. 25A / 1Hr.
2-6. Max. Switching Load	35A
2-7. Max. Inrush Current	60A
2-8. Min. Switching Load	6VDC 1A
2-9. Contact Resistance	Max. 50mΩ (6VDC 1A)
2-10. Life	
Electrical	100,000 operations
Mechanical	10,000,000 operations

3. GENERAL DATA

3-1. Insulation Resistance	Min. 100MΩ. 500VDC
3-2. Dielectric Strength	500VAC, 1min between open contacts 500VAC, 1min between coil and contacts
3-3. Operate Time	Max. 10ms
3-4. Release Time	Max. 10ms
3-5. Operate Temperature	-30℃ ~ +85℃
3-6. Shock Resistance	
Endurance	Min. 100m/s ²
Misoperation	Min. 1,000m/s ²
3-7. Vibration Resistance	
Endurance	10~55Hz, 1.5mm double amplitude
Misoperation	10~55Hz, 1.5mm double amplitude
3-8. Weight	Approximately 6.0g

4. ORDER CODE

DCMA51	-	S	-	DC12V	-	A	
							CONTACT FORM
							A-1 Form A, B-1 Form B, C-1 Form C
							COIL VOLTAGE
							DC6V, DC9V, DC12V, DC24V
							ENCLOSURE
							S-Washable
							NIL - Flux Free
							MODEL OF RELAY (Contact Gap 0.3mm)



◆ AUTOMOTIVE RELAY

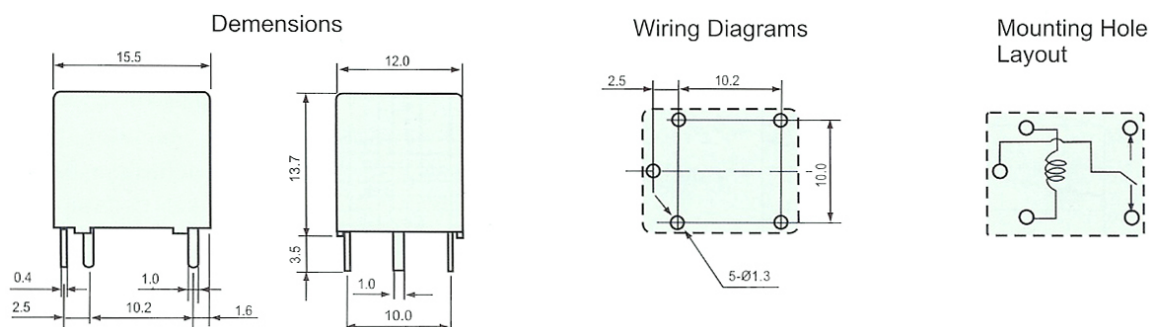
DCMA51 Relay

5. COIL DATA CHART

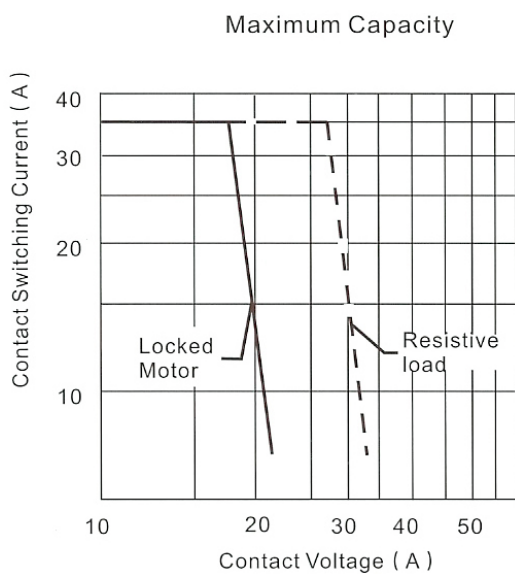
20℃

Model	Nominal Voltage VDC	Coil Resistance $\pm 10\% \Omega$	Operate Voltage $\leq VDC$	Release Voltage $\geq VDC$	Coil Power mW
DCMA51H-(S)-DC6V	6	60	3.6	0.6	600
DCMA51H-(S)-DC9V	9	135	5.4	0.9	
DCMA51H-(S)-DC12V	12	240	7.2	1.2	
DCMA51H-(S)-DC24V	24	960	14.4	2.4	
DCMA51-(S)-DC6V	6	45	3.6	0.6	800
DCMA51-(S)-DC9V	9	100	5.4	0.9	
DCMA51-(S)-DC12V	12	180	7.2	1.2	
DCMA51-(S)-DC24V	24	720	14.4	2.4	

6. DEMENSIONS(mm)



7. DCMA51 CHARACTERISTIC CHART DATA



◆ AUTOMOTIVE RELAY

DMR502 Relay



1. COIL DATA

1-1. Nominal Voltage	12, 24VDC
1-2. Coil Resistance	Refer to Coil Data Chart
1-3. Operate Voltage	Refer to Coil Data Chart
1-4. Release Voltage	Refer to Coil Data Chart
1-5. Nominal Power	1,600mW

◆ Coil Data Chart

Nominal Voltage VDC	Pick-up Voltage VDC	Drop-out Voltage VDC	Coil Resistance($\Omega \pm 10\%$)	Nominal Current(mA)
12	70%	10%	90.9	132
24			360	67

2. CONTACT DATA

2-1. Contact Form	A-1 Form A, C-1 Form C
2-2. Contact Material	Ag Alloy
2-3. Contact Rating	30A / 40A 12VDC 20A 24VDC
2-4. Max. Switching Voltage	28VDC
2-5. Max. Switching Current	20A
2-6. Max. Switching Power	560W
2-7. Initial Contact Resistance	100m Ω
2-8. Life	
Electrical	100,000 operations
Mechanical	10,000,000 operations

3. GENERAL DATA

3-1. Initial Insulation Resistance	Min. 100M Ω . 500VDC
3-2. Dielectric Strength	500VAC, 1min between open contacts 1,000VAC, 1min between coil and contacts
3-3. Operate Time	Max. 15ms
3-4. Release Time	Max. 10ms
3-5. Operate Temperature	-40 $^{\circ}$ C ~ +80 $^{\circ}$ C
3-6. Humidity	35% ~ 85% RH
3-6. Shock Resistance	
Functional	10G
Destructive	100G
3-7. Vibration Resistance	1.5mm, 10~55Hz
3-8. Weight	Approximately 18.0g

4. ORDER CODE

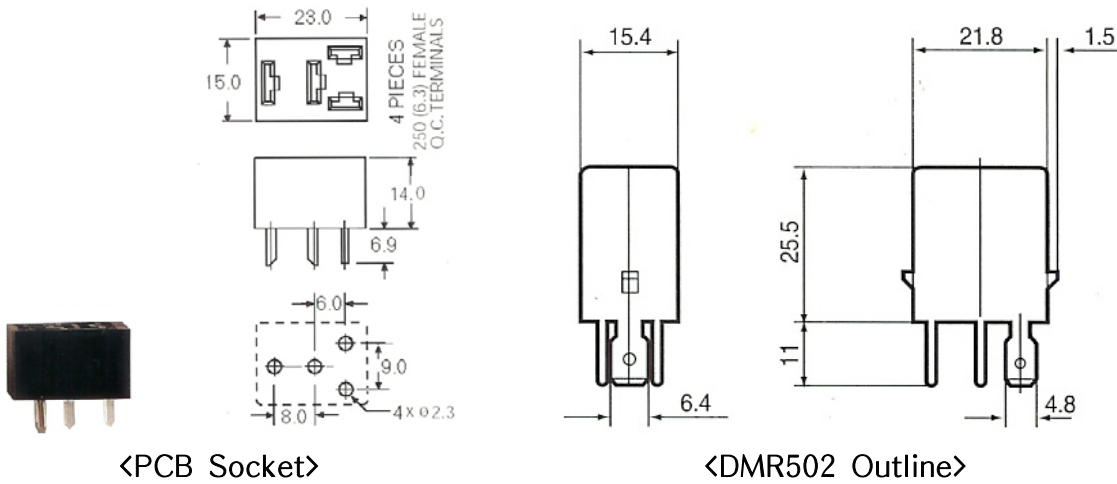
DMR502	-	1A	-	PD	-	12	
							COIL VOLTAGE
							DC12V, DC24V
							P : Pin Type
							D : DC Voltage
							CONTACT FORM
							A-1 Form A, C-1 Form C
							MODEL OF RELAY

◆ AUTOMOTIVE RELAY

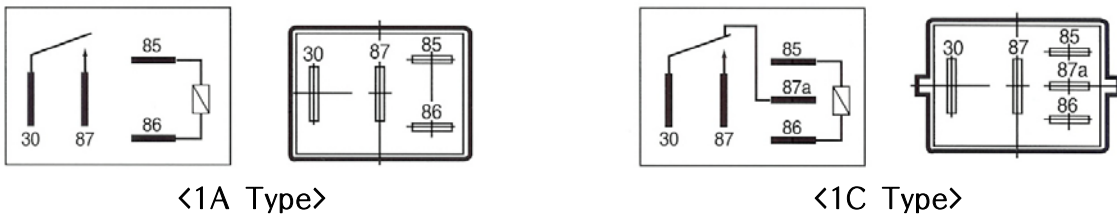
DMR502 Relay

5. DEMENSIONS(mm)

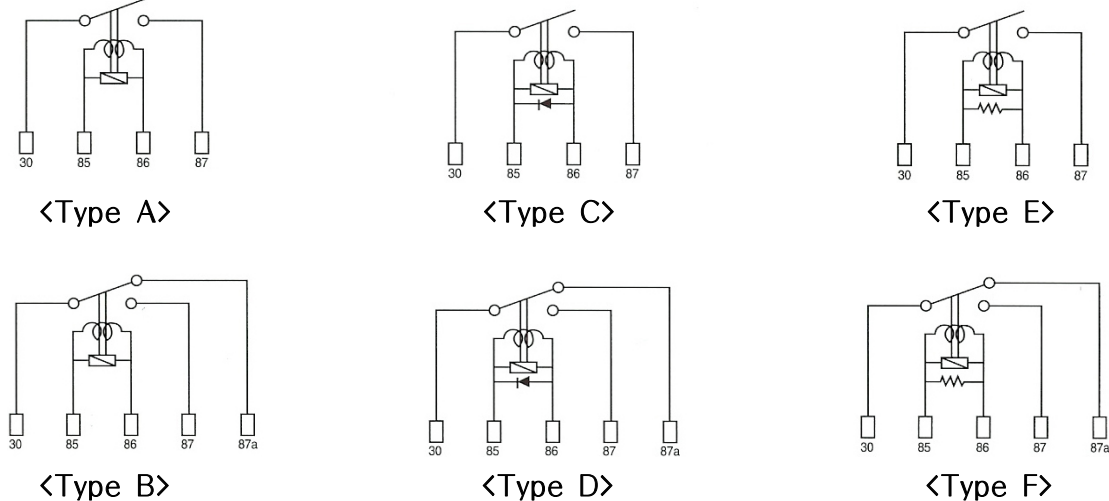
◆ PCB Socket & Outline



◆ Terminal Arrangement



◆ Wiring Diagram



◆ AUTOMOTIVE RELAY

MINI ISO(H) Relay



1. COIL DATA

1-1. Nominal Voltage	12VDC
1-2. Coil Resistance	Refer to Coil Data Chart
1-3. Operate Voltage	Refer to Coil Data Chart
1-4. Release Voltage	Refer to Coil Data Chart
1-5. Nominal Power	2,500mW

◆ Coil Data Chart

Nominal Voltage VDC	Pick-up Voltage VDC	Drop-out Voltage VDC	Coil Resistance($\Omega \pm 10\%$)	Nominal Current(mA)
12	70%	10%	57	210mA

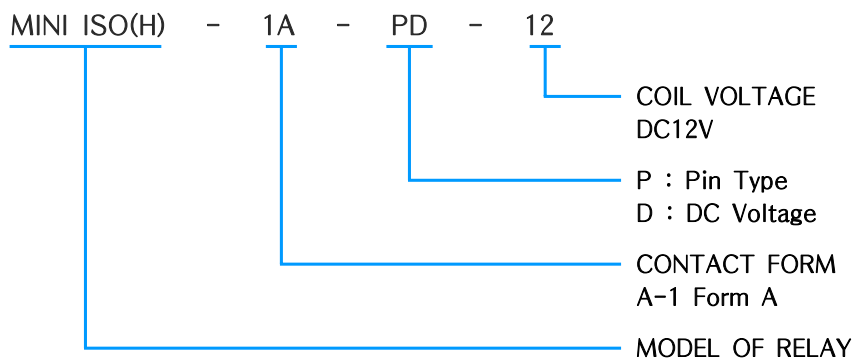
2. CONTACT DATA

2-1. Contact Form	A-1 Form A
2-2. Contact Material	Ag Alloy
2-3. Contact Rating	70A / 12VDC
2-4. Max. Switching Voltage	12VDC
2-5. Max. Switching Current	70A
2-6. Max. Switching Power	840W
2-7. Initial Contact Resistance	100m Ω
2-8. Life	
Electrical	100,000 operations
Mechanical	10,000,000 operations

3. GENERAL DATA

3-1. Initial Insulation Resistance	100M Ω . 500VDC
3-2. Dielectric Strength	750VAC, 1min between open contacts 1,000VAC, 1min between coil and contacts
3-3. Operate Time	Max. 15ms
3-4. Release Time	Max. 10ms
3-5. Operate Temperature	-40℃ ~ +80℃
3-6. Humidity	35% ~ 85% RH
3-7. Shock Resistance	
Functional	10G
Destructive	100G
3-8. Vibration Resistance	1.5mm, 10~55Hz
3-9. Weight	Approximately 31.0g

4. ORDER CODE

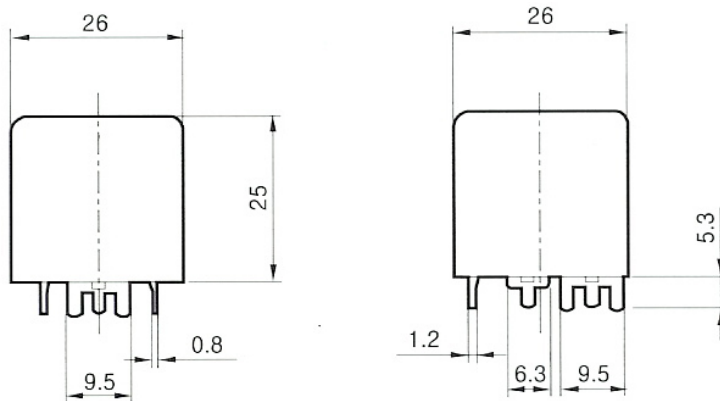


◆ AUTOMOTIVE RELAY

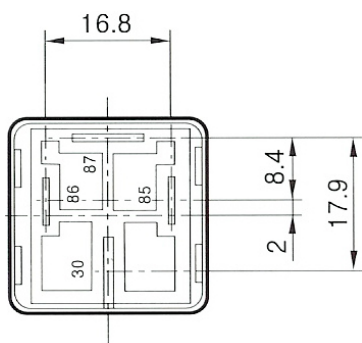
MINI ISO(H) Relay

5. DIMENSIONS(mm)

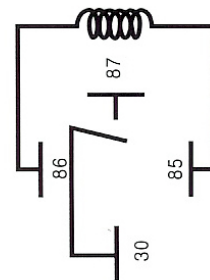
◆ Outline



◆ Board Layout & Wiring Diagram



<Board Layout>



<Wiring Diagram>

◆ AUTOMOTIVE RELAY

POWER Relay



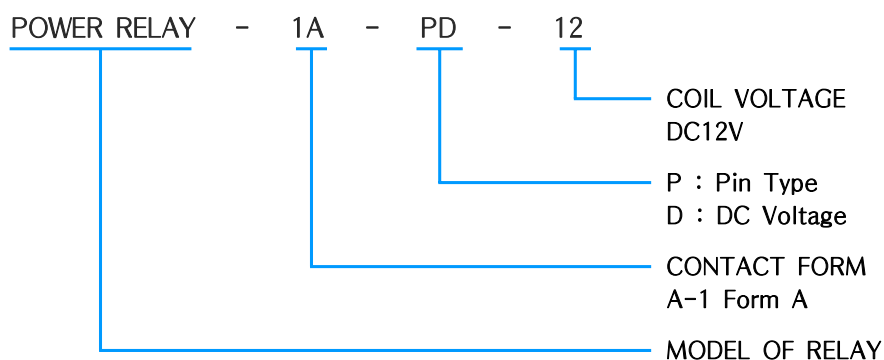
1. APPLICATIONS

- 1-1. MOTORCYCLES, MOPEDS
- 1-2. COMPRESSOR IN AUTOMOTIVE AIR CONDITIONERS
- 1-3. HALOGEN LAMP
- 1-4. POWER WINDOWS
- 1-5. SUN ROOF

2. CONTACT & COIL DATA

Rated Voltage		DC 12V
Operating Voltage Range		DC 9V ~ DC 16V
Operating Temperature Range		-35℃ ~ +80℃
Rated Load Current		DC 12V, 20A
Characteristics	Operating Voltage	DC 8V Max. (at 24±5℃)
	Release Voltage	DC 0.5V Min. DC 6V Max.
	Rated Coil Current	120mA +15%~20%(at 24±5℃)
	Voltage Drop	DC 0.2V Max. at 20A(0.3A Max. at after durability test)
	Insulation Resistance	Min. 100mΩ by 500V megger
	Electrical Life	100,000
	Mechanical Life	10,000,000
Weight		Approximately No Bracket : 25.0g / Bracket : 28.0g

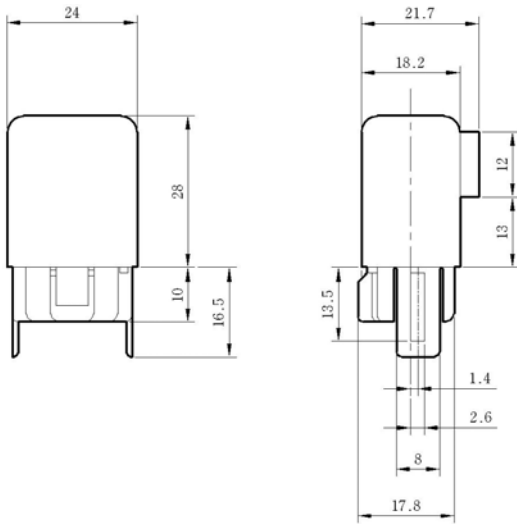
3. ORDER CODE



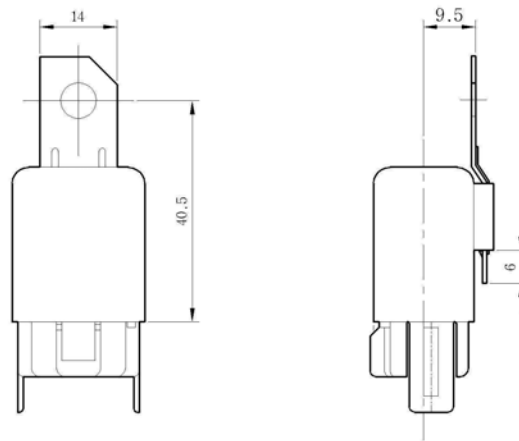
◆ AUTOMOTIVE RELAY

POWER Relay

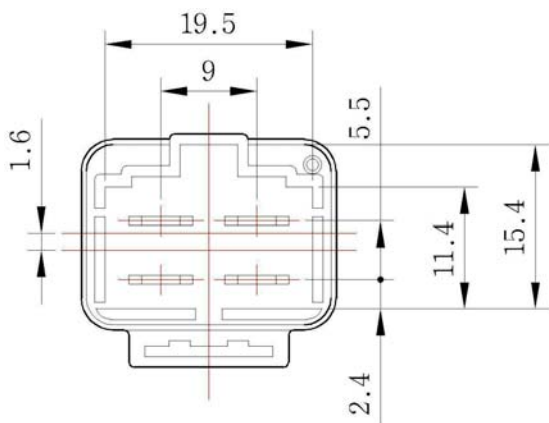
4. DIMENSIONS(mm)



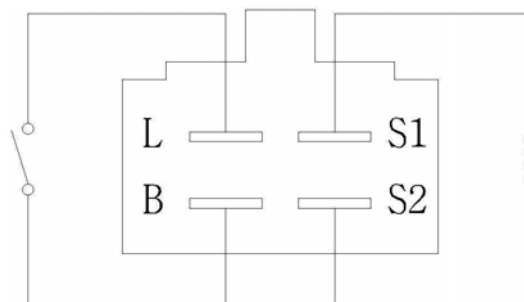
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<Outline Dimensions Bracket>



<Board Layout>

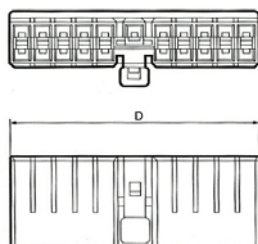


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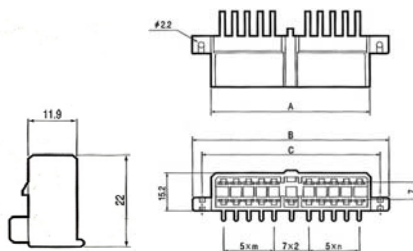
DAELIM ELECTRONICS CO.

1-1. Material	Housing - Nylon66 / Terminal - Brass / Tin Plate
1-2. Current Rating	10A
1-3. Insulation Resistance	100mΩ Min. at 500VDC
1-4. Dielectric with standing voltage	1,500VAC, 1minute
1-5. Operating Temperature Range	-30℃ ~ +80℃

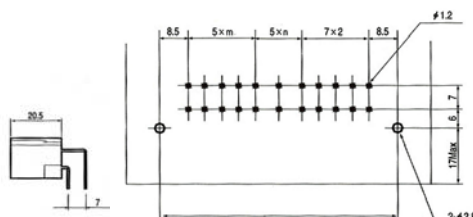
Part Name	No. of Pos.	Dimensions(mm)						Color
		A	B	C	D	m	n	
Plug. Housing	7P				25			Natural
	9P				30			Natural
	13P				40			Natural
	17P				50			Natural
	21P				60			Natural
Recep. Housing	7P	28.4	43	36			1	Natural
	9P	33.4	48	41		1	1	Natural
	13P	43.4	58	51		2	2	Natural
	17P	53.4	68	61		3	3	Natural
	21P	63.4	78	71		4	4	Natural



<Plug Housing>



<Receptacle Housing>



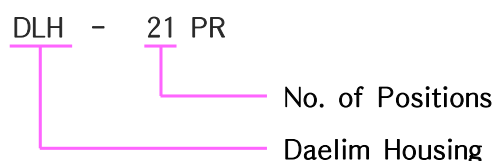
<PCB Layout for Recep. Housing>

DLW - 21 PE

No. of Positions

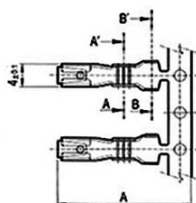
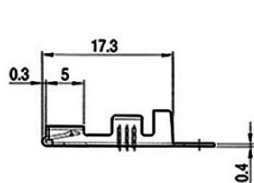
Daelim Wafer

<Receptacle Housing>

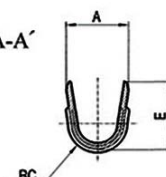


<Plug Housing>

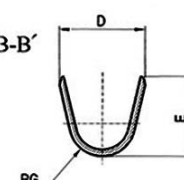
Part Name	Wire Range	Material	Thick	Finish	Dimensions(mm)					
					A	B	C	D	E	F
DLT-PAR01	20~18	Brass(C2680T)	0.4	1.0 μ m~1.2 μ mTin over 0.3 μ m Min. Copper	2.9	2.6	0.9	3.9	3.8	1.6
DLT-PAR03	14~12	Brass(C2680T)	0.4	1.0 μ m~1.2 μ mTin over 0.3 μ m Min. Copper	3.8	4.2	1.6	5.2	4.9	2.0



SECTION : A-A'

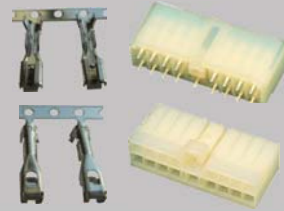


SECTION : B-B'



◆ Wire To Board Connectors

PA Series Vertical type

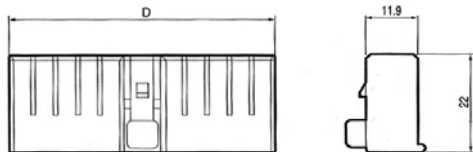
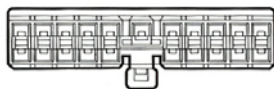


1. GENERAL DATA

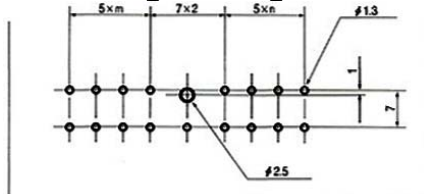
1-1. Material	Housing - Nylon66 Terminal - Brass / Tin Plate
1-2. Current Rating	10A
1-3. Insulation Resistance	100m Ω Min. at 500VDC
1-4. Dielectric with standing voltage	1,500VAC, 1minute
1-5. Operating Temperature Range	-30℃ ~ +80℃

2. Dimensions(mm)

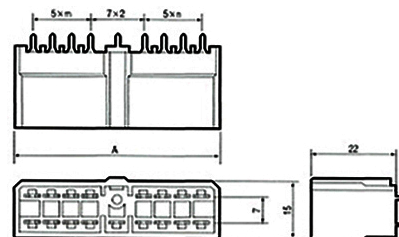
Part Name	No. of Pos.	Dimensions(mm)				Color
		A	D	m	n	
Plug. Housing	9P		30			Natural
	17P		50			Natural
Recep. Housing	9P	33.4		1	1	Natural
	17P	53.4		3	3	Natural



<Plug Housing>



<PCB Layout for Recep. Housing>



<Receptacle Housing>

3. ORDER CODE

DLW - 17 PS

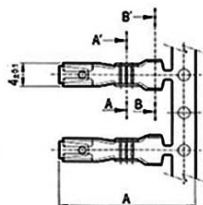
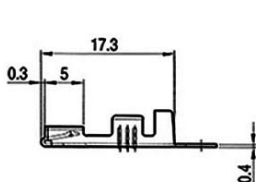
DLW - Daelim Wafer
17 - No. of Positions
PS - <Receptacle Housing>

DLH - 17 PR

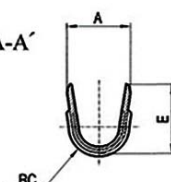
DLH - Daelim Housing
17 - No. of Positions
PR - <Plug Housing>

4. RECEPTACLE TERMINAL DATA

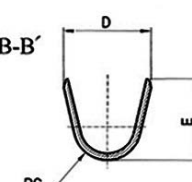
Part Name	Wire Range	Material	Thick	Finish	Dimensions(mm)						Q'ty/Reel
					A	B	C	D	E	F	
DLT-PAR01	20~18	Brass(C2680T)	0.4	1.0 μ m~1.2 μ m Tin over 0.3 μ m Min. Copper	2.9	2.6	0.9	3.9	3.8	1.6	5,000
DLT-PAR03	14~12	Brass(C2680T)	0.4	1.0 μ m~1.2 μ m Tin over 0.3 μ m Min. Copper	3.8	4.2	1.6	5.2	4.9	2.0	4,000



SECTION : A-A'



SECTION : B-B'



Wire To Board Connectors

MIC Series Horizontal type



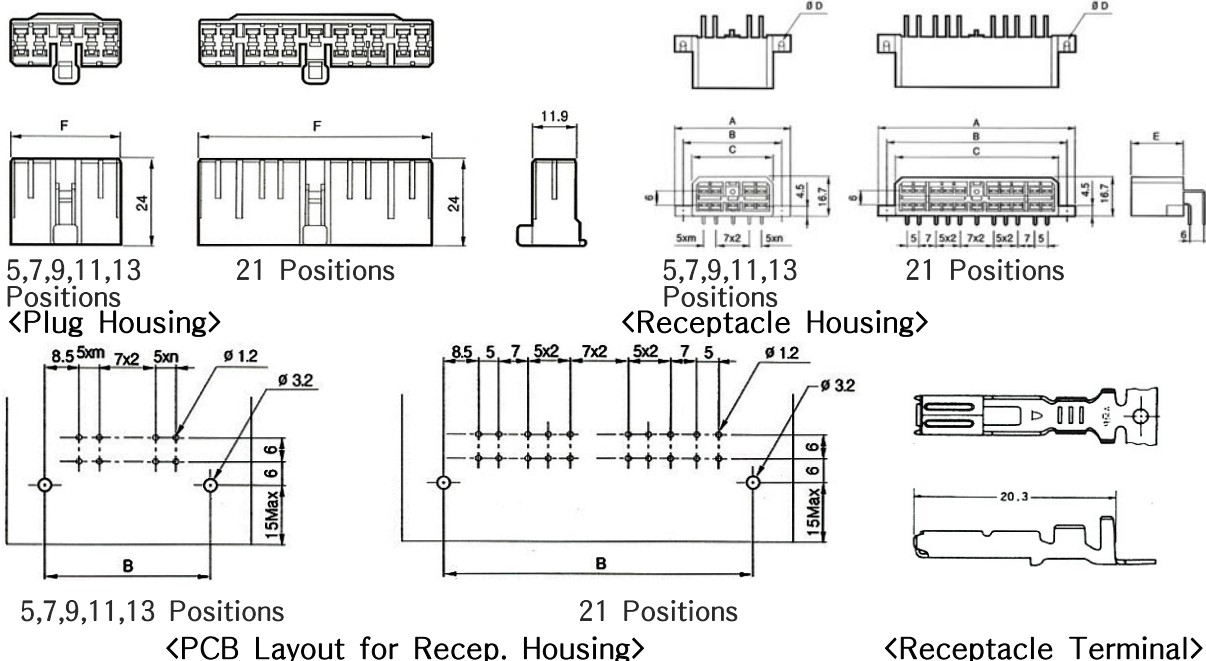
1. GENERAL DATA

1-1. Material	Housing - Nylon66 / Terminal - Brass / Pre-Tin
1-2. Current Rating	Rec' Terminal - Material : Brass Finish : Pre-Tin
1-3. Insulation Resistance	10A 350VDC / 250VAC
1-4. Dielectric with standing voltage	100mΩ Min. at 500VDC
1-5. Operating Temperature Range	1,800VAC, 1minute -30℃ ~ +80℃

2. DIMENSIONS(mm)

Part Name	No. of Pos.	Dimensions(mm)							
		A	B	C	D	E	F	m	n
Plug. Housing	5P						20		
	7P						25		
	9P						30		
	11P						35		
	13P						40		
	21P						64		
Recep. Housing	5P	38	31	23.6	2.3	22			
	7P	43	36	28.6	2.3	22			1
	9P	48	41	33.6	2.3	22		1	1
	11P	53	46	38.6	2.3	22		1	2
	13P	58	51	43.6	2.2	22		2	2
	21P	82	75	67.6	2.2	21.4		See Figure	

Part Name	Wire Range		Wire Insulation (Diameter:mm)	Dimension(mm)			Material	Finish
	AWG	mm ²		L	E	W		
Rec' Terminal	22-18	0.3-0.85	1.5-2.6	20.3	2.75	4	Brass	Pre-Tin



3. ORDER CODE

DLW - A 21 PE

No. of Positions
Daelim Wafer
<Receptacle Housing>

DLH - A 21 PR

No. of Positions
Daelim Housing
<Plug Housing>

◆ Wire To Board Connectors

MKC Series Horizontal type



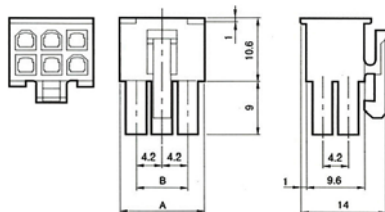
1. GENERAL DATA

1-1. Material	Housing - Nylon66 / Terminal - Brass / Pre-Tin
1-2. Voltage Rating	500V
1-3. Current Rating	9A
1-4. Insulation Resistance	Min. 1,000mΩ
1-5. Dielectric with standing voltage	1,500VAC, 1minute

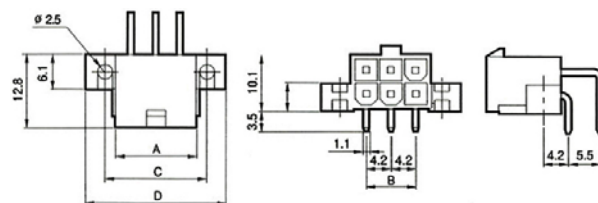
2. DIMENSIONS(mm)

Part Name	No. of Pos.	Dimensions(mm)				Part Name	No. of Pos.	Dimensions(mm)			
		A	B	C	D			A	B	C	D
Plug. Housing	02	5.4	0			Recep. Housing	02	5.4	0	9.0	15.4
	04	9.6	4.2				04	9.6	4.2	13.2	19.6
	06	13.8	8.4				06	13.8	8.4	17.4	13.8
	08	18.0	12.6				08	18.0	12.6	25.8	32.2
	10	22.2	16.8				10	22.2	16.8	25.8	32.2
	12	26.4	21.0				12	26.4	21.0	30.0	36.4
	14	30.6	25.2				14	30.6	25.2	34.2	40.6
	16	34.8	29.4				16	34.8	29.4	38.4	44.6
	18	39.0	33.6				18	39.0	33.6	42.6	48.0
	20	43.2	37.3				20	43.2	37.3	46.8	53.2
	22	47.4	42.0				22	47.4	42.0	51.0	57.4
	24	51.6	46.2				24	51.6	46.2	55.2	61.6

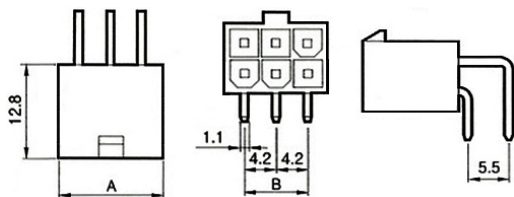
Part Name	Terminal	Wire Gauge	Insulation Diameter	Contact Material
Rec' Terminal	4,000pcs/Reel	AWG #18 ~ #28	φ 1.8Max, φ 3.1Max	Tin Plated, Phosphor Bronze



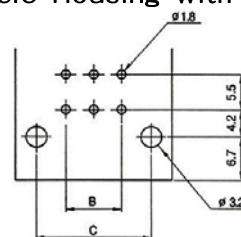
<Plug Housing>



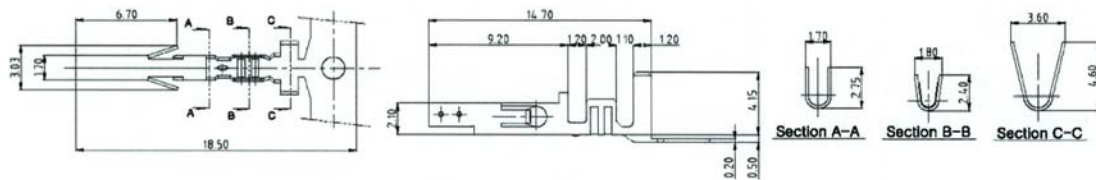
<Receptacle Housing with wings>



<Receptacle Housing without Wings>



<PCB Layout>



<Rec' Terminal Layout>

3. ORDER CODE

DLW - 24 E

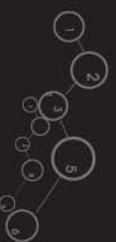
No. of Positions
Daelim Wafer

<Receptacle Housing>

DLH - 24 R

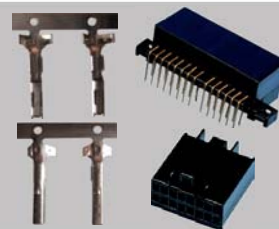
No. of Positions
Daelim Housing

<Plug Housing>



◆ Wire To Board Connectors

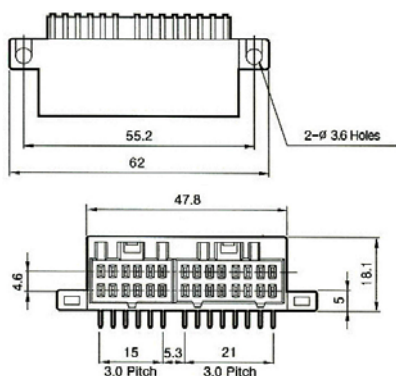
DLI Series Horizontal type



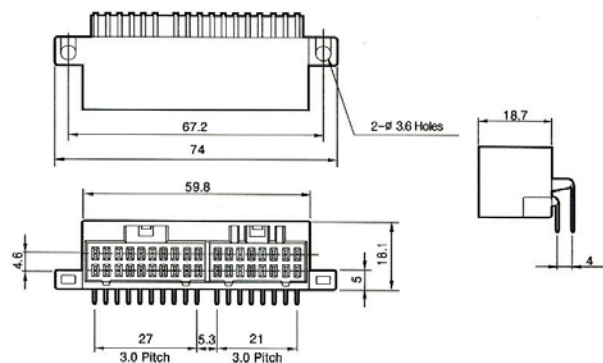
1. GENERAL DATA

1-1. Material	Housing - Nylon66
	Terminal - Brass / Pre-Tin
1-2. Current Rating	10A 350VDC or 250VAC
1-3. Insulation Resistance	100mΩ Min. at 500VDC
1-4. Dielectric with standing voltage	1,800VAC, 1minute
1-5. Operating Temperature Range	-30℃ ~ +80℃

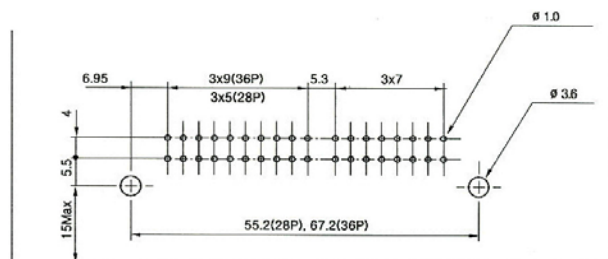
2. DIMENSIONS(mm)



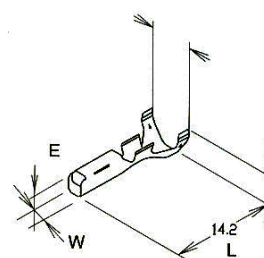
<DLW-A28PE>



<DLW-A36PE>



<PCB Layout>



<Rec' Terminal>

Part Name	Terminal	Wire Range		Wire Insulation (Diameter:mm)	Dimension(mm)			Material	Finish
		AWG	mm ²		L	E	W		
Rec' Terminal	5,000pcs/Reel	22-20	0.3-0.5	1.8-2.0	14.2	2.3	1.8	Cu Alloy	Pre-Tin

3. ORDER CODE

DLW - A 36 PE

No. of Positions

Daelim Wafer

<Receptacle Housing>

◆ Wire To Board Connectors

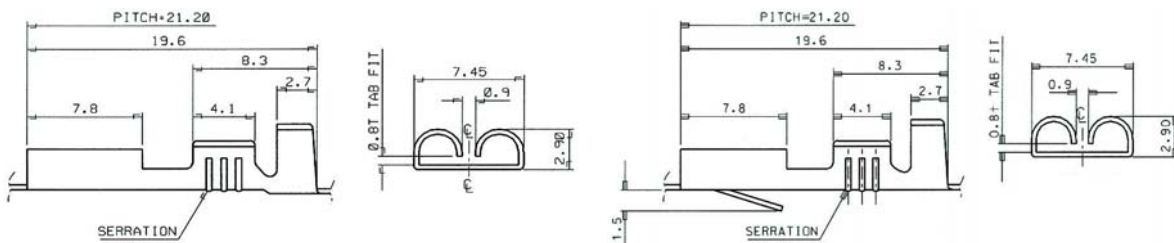
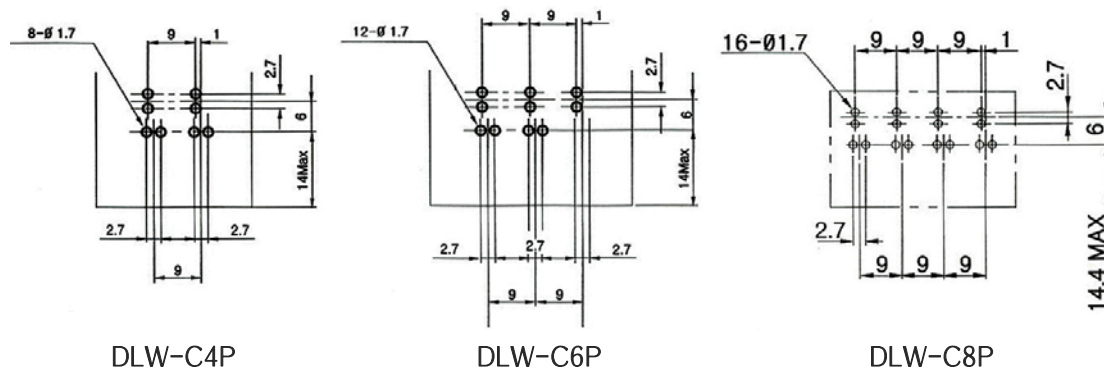
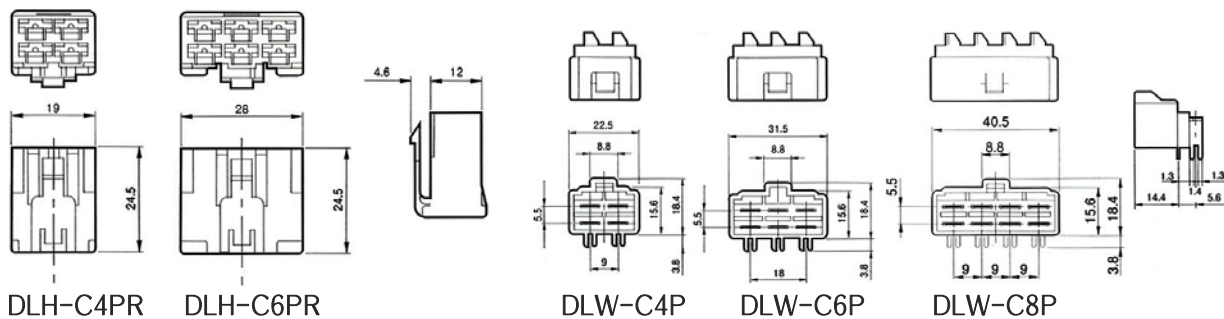
250S Series



1. GENERAL DATA

1-1. Material	Housing - Nylon66(Natural) / Terminal - Brass / Tin Plate Rec' Terminal - Brass 0.35mm Thickness
1-2. Current Rating	30A 12VDC
1-3. Insulation Resistance	Min. 100mΩ at 500VDC
1-4. Dielectric with standing voltage	3,000VAC, 1minute

2. DIMENSIONS(mm)



3. ORDER CODE

DLW - C 6 P
 No. of Positions
 Daelim Wafer
 <Receptacle Housing>

DLH - C 6 PR
 No. of Positions
 Daelim Housing
 <Plug Housing>

◆ Resistor Sensors



Resistor Sensors

1. RESISTOR SENSOR GENERAL DATA & DIMENSIONS(mm)

Material	Diameter ($\varnothing$ d mm)	Resistance (Ω /M)	Standard Specifications	
			L	Resistance(m Ω)
Constantan	1.1 ± 0.030	0.516	10	18.0
			10	20.0
	1.0 ± 0.025	0.624	15	25.0
			15	30.0

2. RESISTOR SENSOR ORDER CODE

DSNR - 10 180

Resistance(m Ω) ex) 20.0(m Ω) $\rightarrow$ 200 / 30.0(m Ω) $\rightarrow$ 300

L(mm)

Name of Sensor



◆ Fuse Holders



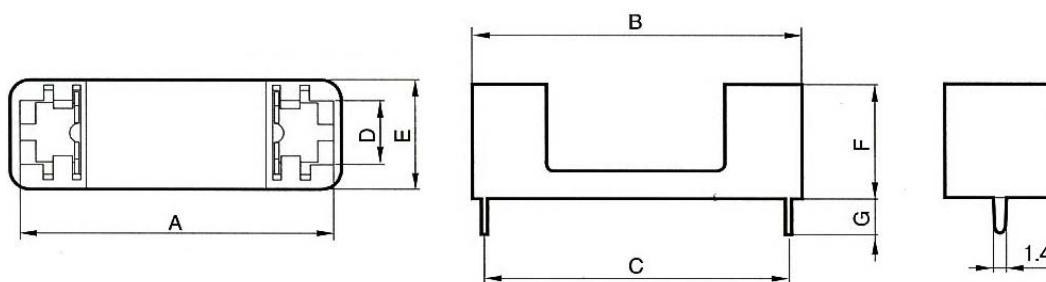
Fuse Holders

1. FUSE HOLDER GENERAL DATA

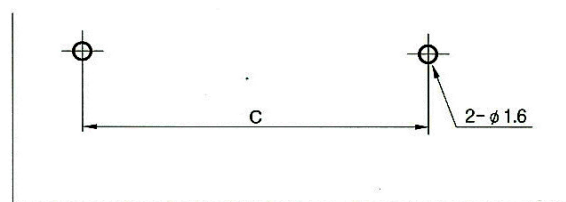
1-1. Material	Base - Nylon66(Black) Fuse Clip - Brass / Tin Plate
1-2. Current & Voltage Rating	5A, 250VAC

2. FUSE HOLDER DIMENSIONS(mm)

Part No	Dimensions(mm)					Applicable Fuse
	A	B	C	D	E	
DLFH-30	32.3	34	32	6.6	11.2	$\phi 6.4 \times 31.8\text{mm}$



<DLFH-30 Layout>



<DLFH-30 PCB Layout>

Wire To Board Connectors

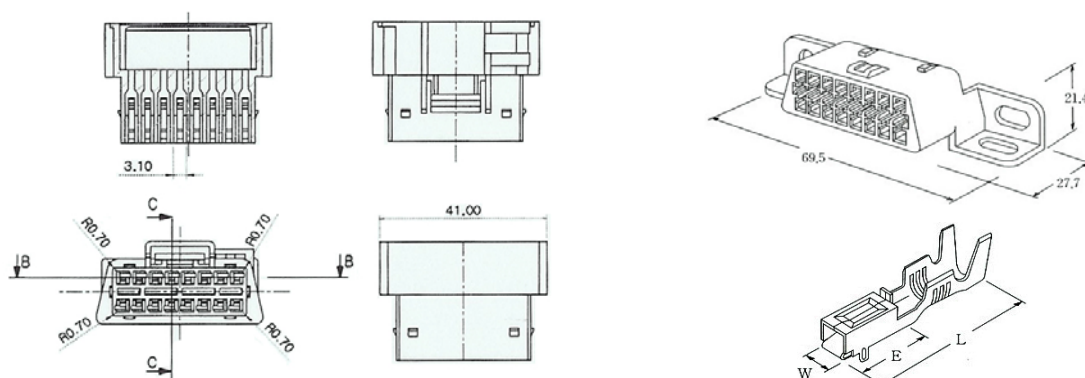
DLH-18P Housing



1. GENERAL DATA

1-1. Features	1) Non-Waterproof connector with TAB size of 1.8mm(0.070 Inch)
	2) Connector for On Board Diagnosis circuit
	3) Rear Holder connection structure of double locking function
	4) Excellent contact stability, reliability and durability
1-2. Application	Unit
1-3. Contact Material	Copper Alloy
1-4. Contact Plating	Pre-Tin
1-5. Connector Material	PBT
1-6. Applicable Wire	AVS, AVSS 0.3~0.5mm ² (AWG #22 - #20)
1-7. Terminal Locking Force	Below 14.0Kg.f
1-8. Contact Resistance	Over DC 500V 100MΩ
1-9. Dielectric Strength	AC 1,000V(min)
1-10. Temperature Range	-40℃ ~ 120℃
1-11. Current Rating	9A
1-12. Components	Separation Type Rear Holder
1-13. Waterproof	Non-waterproof Connector

2. DIMENSIONS(mm)



<DLH-18P Housing>

Part No.	Wire Range		Tab Thick.	Material		Dimension(mm)			Q'ty / Reel
	AWG	mm ²		Thick.	Finish	L	E	W	
ST 730618-3(Rec')	22-20	0.3-0.5	0.8	0.25	Copper Alloy Pre-Tin	16.2	6.95	2.6	5,000

3. ORDER CODE

DLH - 18 P Housing

DLH : Daelim Housing
18 : No. of Positions

◆ Plug / Receptacle Connectors

M-ZIF(Medical Zero Insertion Force) 260P



1. CHARACTERISTIC

- | | |
|---------------------------|----------------------------|
| 1-1. Metal Housing | 1-2. EMI / RFI Shielding |
| 1-3. 260 Contact Cavities | 1-4. Single Hand Actuation |
| 1-5. Square Post Contacts | |

2. APPLICATION

- | | |
|------------------------|--|
| 2-1. Medical | 2-2. Entertainment |
| 2-3. Telecommunication | 2-4. Commercial / Industrial Manufacturing |
| 2-5. Test & Instrument | |

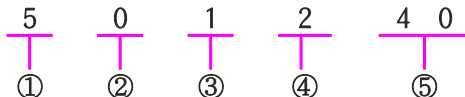
3. ELECTRICAL CHARACTERISTIC

- | | |
|--|--|
| 3-1. Current : 5A | 3-2. Contact Resistance : 15mΩ (Max) |
| 3-3. Dielectric withstanding Voltage : 1,200VAC, 5mA | 3-4. Insulation Resistance : 5,000MΩ (min) 500VDC |
| 3-5. Durability : 20,000 cycle/Min | 3-6. Plating : Contact area : 0.8μm Gold over 3.6μm Nickel |

4. ORDER CODE / DIMENSIONS(mm)

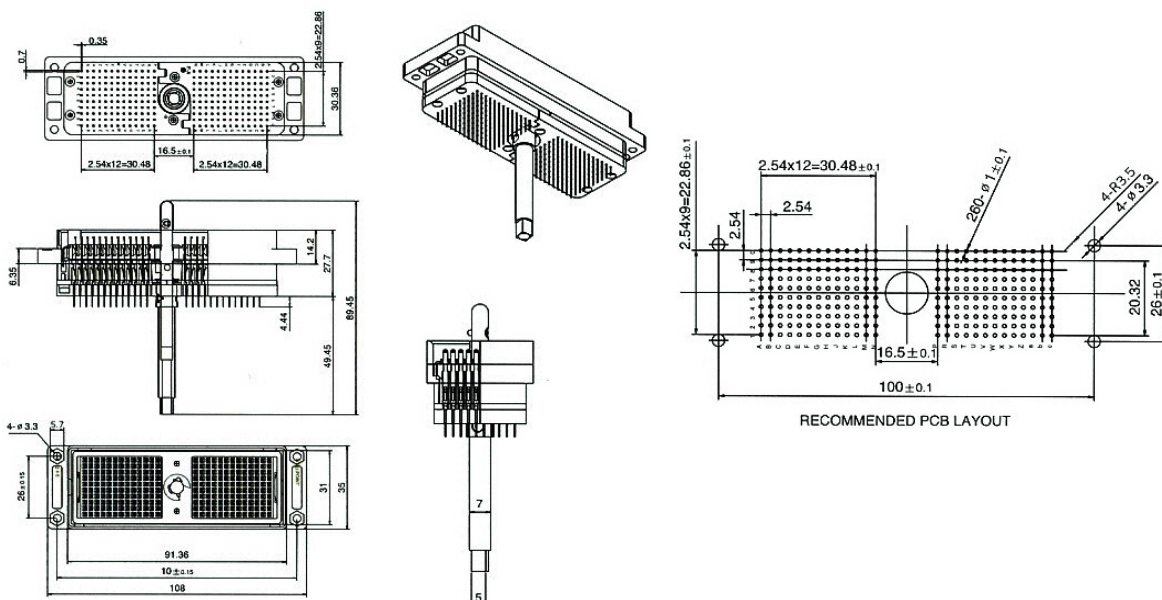


◆ Ordering Information



- | | |
|---------------------------------------|---|
| ① 5 : ZIF Connector Number | ④ 1 : Plastic Body Type / 2 : Metal Body Type |
| ② 0 : ZIF Connector product | ⑤ 10 : 60pin / 20 : 96pin / 30 : 156pin |
| ③ 1 : Plug Type / 2 : Receptacle Type | 40 : 260pin / 50 : 360pin |

◆ Dimensions



◆ Plug / Receptacle Connectors

M-ZIF(Medical Zero Insertion Force) 260P

4. ORDER CODE / DIMENSIONS(mm)

◆ Ordering Information



5 0 2 2 4 0
① ② ③ ④ ⑤

① 5 : ZIF Connector Number

② 0 : ZIF Connector product

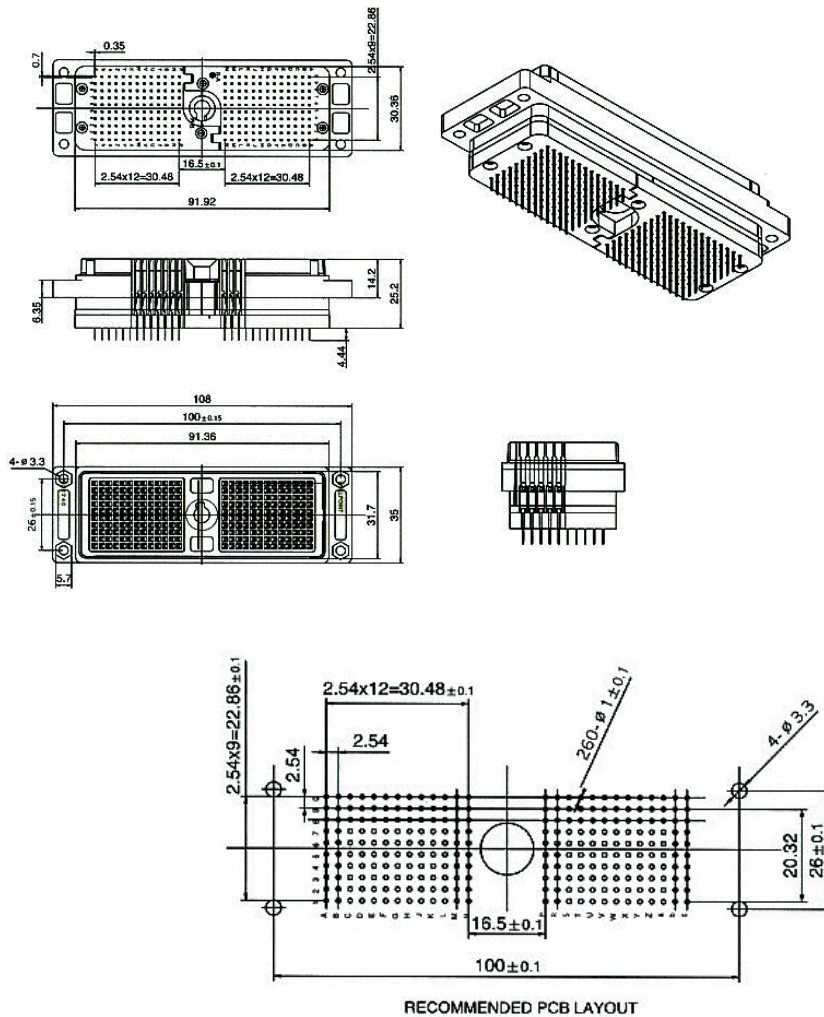
③ 1 : Plug Type / 2 : Receptacle Type

④ 1 : Plastic Body Type / 2 : Metal Body Type

⑤ 10 : 60pin / 20 : 96pin / 30 : 156pin

40 : 260pin / 50 : 360pin

◆ Dimensions



◆ PCMCIA CONNECTOR

Non Ejector Type



1. CHARACTERISTIC

1-1. Single(3.3V, 5V - All Possible)

1-2. Double(3.3V, 5V - All Possible)

2. APPLICATION

2-1. Settop Box

2-2. ADSL Modem

3. ELECTRICAL CHARACTERISTIC

3-1. Voltage : 200V

3-2. Current : 0.5A

3-3. Contact Resistance : 40mΩ Max.

3-4. Dielectric withstanding Voltage : 500VAC

3-5. Insulation Resistance : 1,000MΩ Min.

4. MECHANICAL CHARACTERISTIC

4-1. Contact Retention to Housing : 1.0Kg.f Min.

4-2. Mating Force : 4.0Kg.f Max.

4-3. Unmating Force : 0.68 Kg.f Min.

4-4. Durability : 10,000 cycles

5. PHYSIAL CHARACTERISTIC

5-1. Housing : Black PBT(G30%), UL 94V-0

5-2. Contact : Copper Alloy

5-3. Plating : Nickel with Gold Plating 0.1μm

5-4. Card Travel : 5mm

5-5. Temperature : -20℃ ~ +60℃

6. ORDER CODE / DIMENSIONS(mm)

◆ Ordering Information

7 1 1 3 0 0 - A
① ② ③ ④ ⑤

① 7 : PCMCIA Connector Number

② 1 : Single Deck Type, 2 : Double Deck Type

③ 1 : HEADER(United Type)

1) Single 2) Double 3) Non Eject Type

2 : HEADER(Separated Type)

1) Single 2) Double

3 : MECHANISM

1) Upper Mechanism 2) Lower Mechanism

3) Mechanism(Separation) 4) Non Eject Type

④ Stand Off length

0mm : 00, 2mm : 20, 4mm : 40

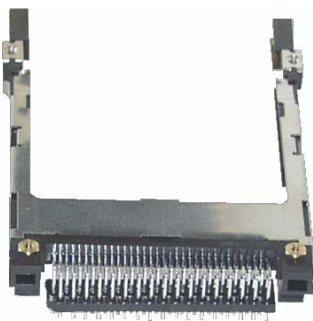
5mm : 50, 5.5mm : 55

⑤ Stand Off Foam

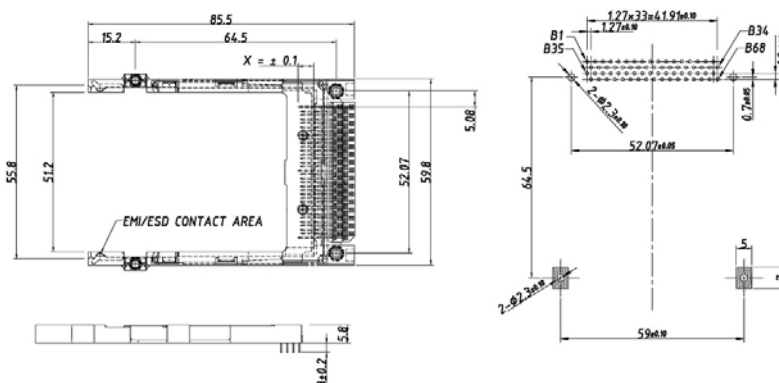
A : Single Type(Basic)

B : Double Type(Using for Otax)

C : Hook Type



◆ Dimensions



Ejector Type



1-1. Single(3.3V, 5V - All Possible)

1-2. Double(3.3V, 5V - All Possible)

2-1. Settop Box

2-2. ADSL Modem

3-1. Voltage : 200V

3-2. Current : 0.5A

3-3. Contact Resistance : 40mΩ Max.

3-4. Dielectric Withstanding Voltage : 500VAC

3-5. Insulation Resistance : 1,000M Ω Min.

4-1. Contact Retention to Housing : 1.0Kg.f Min.

4-2. Mating Force : 4.0Kg.f Max.

4-3. Unmating Force : 0.68 Kg.f Min.

4-4. Durability : 10,000 cycles

5-1. Housing : Black PBT(G30%), UL 94V-0

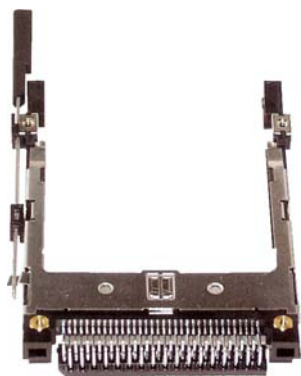
5-2. Contact : Copper Alloy

5-3. Plating : Nickel with Gold Plating $0.1\mu\text{m}$

5-4. Card Travel : 5mm

5-5. Temperature : $-20^{\circ}\text{C} \sim +60^{\circ}\text{C}$

◆ Ordering Information



$\begin{array}{r} 7 \\ \hline \textcircled{1} \end{array}$
 $\begin{array}{r} 1 \\ \hline \textcircled{2} \end{array}$
 $\begin{array}{r} 1 \ 1 \\ \hline \textcircled{3} \end{array}$
 $\begin{array}{r} 5 \ 0 \\ \hline \textcircled{4} \end{array}$
 $\begin{array}{r} \text{B} \\ \hline \textcircled{5} \end{array}$

① 7 : PCMCIA Connector Number

④ Stand Off length

② 1 : Single Deck Type, 2 : Double Deck Type

0mm : 00, 2mm : 20, 4mm : 40
5mm : 50, 5.5mm : 55

③ 1 : HEADER(United Type)

⑤ Stand Off Foam

1) Single 2) Double 3) Non Eject Type
2 : HEADER(Separated Type)

A : Single Type(Basic)
B : Double Type(Using for Otax)

1) Single 2) Double

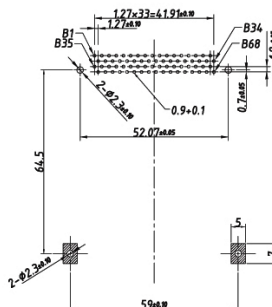
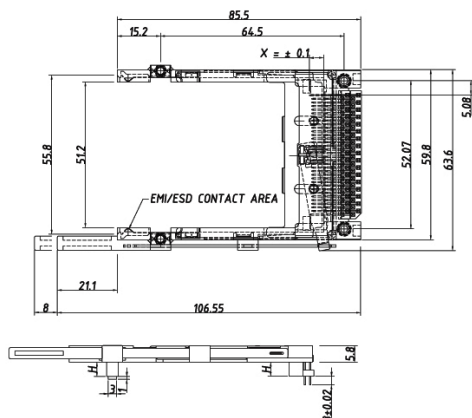
C : Hook Type

3 : MECHANISM

1) Upper Mechanism 2) Lower Mechanism

3) Mechanism(Separation) 4) Non Eject Type

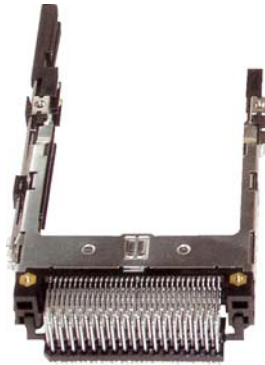
◆ Dimensions



◆ PCMCIA CONNECTOR

Ejector Type

6. ORDER CODE / DIMENSIONS(mm)



◆ Ordering Information

7 2 1 2 5 0 - B
① ② ③ ④ ⑤

① 7 : PCMCIA Connector Number

② 1 : Single Deck Type 2 : Double Deck Type

③ 1 : HEADER(United Type)

1) Single 2) Double 3) Non Eject Type

2 : HEADER(Separated Type)

1) Single 2) Double

3 : MECHANISM

1) Upper Mechanism 2) Lower Mechanism

3) Mechanism(Separation) 4) Non Eject Type

④ Stand Off length

0mm : 00, 2mm : 20, 4mm : 40

5mm : 50, 5.5mm : 55

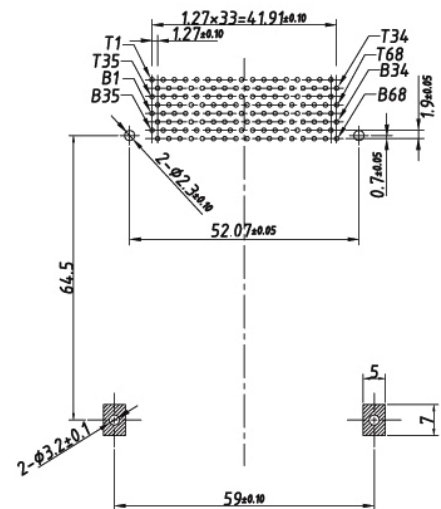
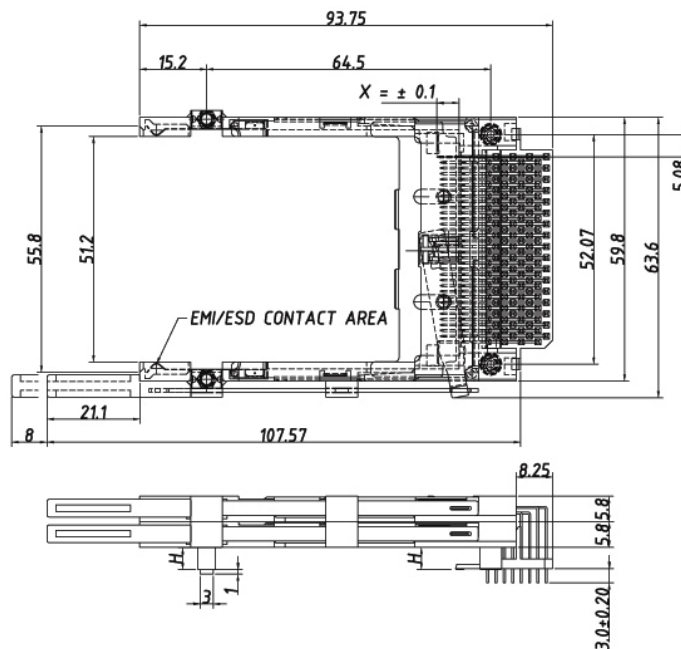
⑤ Stand Off Foam

A : Single Type(Basic)

B : Double Type(Use to Otax)

C : Hook Type

◆ Dimensions



◆ Smart Card Connector

1 SLOT



1. APPLICATION

- 1-1. Digital STB
- 1-2. Smart Card Reader
- 1-3. Gas/Power/Water Meter, Security

2. ELECTRICAL PROPERTIES

- 2-1. Insulation Resistance : 5,000Ω Min.
- 2-2. Dielectric Withstanding : 750Vrms Min.
- 2-3. Current Carrying Capacity : 10μA Min, 1A Max.
- 2-4. Contact Resistance : 100M Max.
- 2-5. Card Sensor Type : Normally Closed

3. MATERIAL

- 3-1. Housing : PBT 30% Glass Filled, Color Black, Rated UL 94V-0
- 3-2. Contacts and Switch : Phosphor Bronze
- 3-3. Plating : Nickel all over with 3μm mini on contact area Gold on contact area atra:see catalogue part number key Tin/Lead 3μm mini on soldertails Bare edge allowed

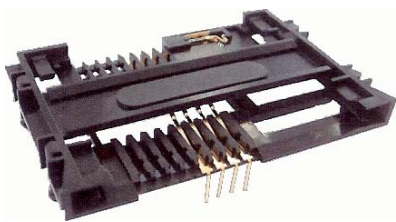
4. ENVIRONMENT

- 4-1. Operating Temperture : -20℃ ~ +70℃
- 4-2. Storage Temperature : -40℃ ~ +8℃
- 4-3. Printed Circuit Board Thickness : 1.6mm

5. ORDER CODE / DIMENSIONS(mm)

◆ Ordering Information

$\frac{6}{\text{①}}$ $\frac{1}{\text{②}}$ $\frac{0}{\text{③}}$ $\frac{1}{\text{④}}$ $\frac{00}{\text{⑤}}$ - $\frac{A}{\text{⑥}}$



① 6 : Smart Card Connector Number

② 1 : 1Slot, 2 : 2Slot

③ Switch Contact Type
0 : Close Type, 1 : Open Type

④ Switch Contact Type

1 : 8P 2 : 16P

⑤ Stand Off

00 : 0mm 55 : 5.5mm

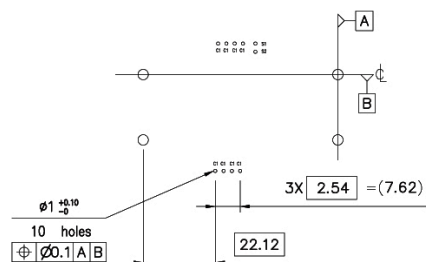
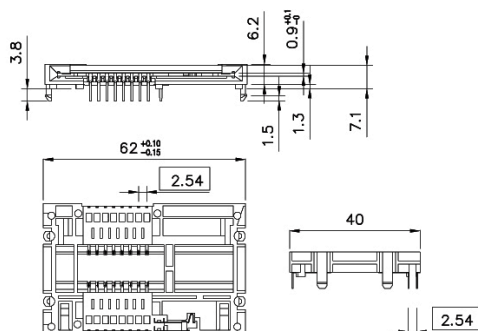
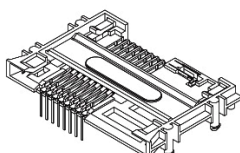
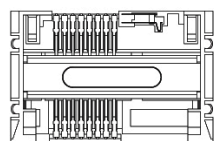
⑥ Contact Plating(Selective Gold)

A : Ni/SN/AU = 45 μ"/120 μ"/30 μ"

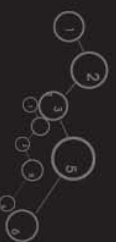
B : Ni/SN/AU = 45 μ"/120 μ"/15 μ"

C : Ni/SN/AU = 45 μ"/120 μ"/3 μ"

◆ Dimensions



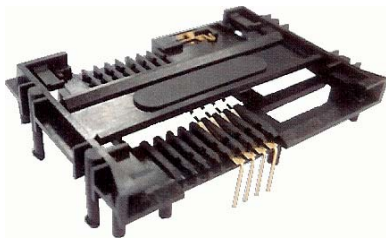
SCALE 3:2



◆ Smart Card Connector

1 SLOT

5. ORDER CODE / DIMENSIONS(mm)



◆ Ordering Information

6 1 0 1 5 5 - A
 ① ② ③ ④ ⑤ ⑥

① 6 : Smart Card Connector Number

② 1 : 1Slot, 2 : 2Slot

③ Switch Contact Type
0 : Close Type, 1 : Open Type

④ Switch Contact Type

1 : 8P 2 : 16P

⑤ Stand Off

00 : 0mm 55 : 5.5mm

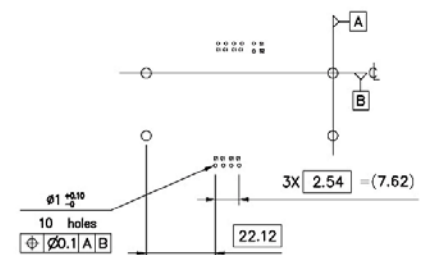
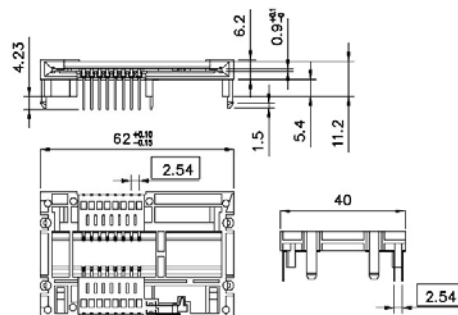
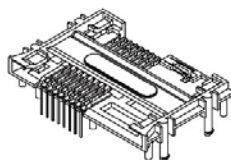
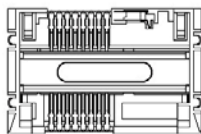
⑥ Contact Plating(Selective Gold)

A : NI/SN/AU = 45 μ "/120 μ "/30 μ "

B : NI/SN/AU = 45 μ "/120 μ "/15 μ "

C : NI/SN/AU = 45 μ "/120 μ "/3 μ "

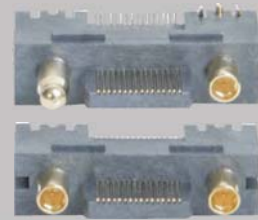
◆ Dimensions



SCALE 3:2

◆ I/O 16P Male Connector

I/O 16P Male Connector



1. CHARACTERISTIC

1-1. RF Connector Use : Mini Coax' Male Connector (SMD Type)

2. APPLICATION

2-1. Satellite Radio

2-2. DMB(Digital Multimedia Broadcasting)

2-3. Navigation

3. ELECTRICAL CHARACTERISTIC

3-1. Voltage : 50V

3-2. Current : 2A

3-3. Contact Resistance : 30mΩ Max.

3-4. Dielectric Withstanding Voltage : 500VAC

3-5. Insulation Resistance : 500MΩ Min.

3-6. Impedance : 50Ω

4. MECHANICAL CHARACTERISTIC

4-1. Insertion Force : 25-50mm Min.

4-2. Withdrawal Force : 25-50mm Min.

4-3. Durability : 10,000 cycles

5. PHYSIAL CHARACTERISTIC

5-1. Housing : LCP(G30%), UL 94V-0

5-2. Contact : Phosphor Bronze

5-3. Plating : Gold Plating 0.2μm

5-4. Temperature : -40℃ ~ +90℃

5-5. Soldering Temperature : 260±5℃/3sec

5-6. Frequency Range : DC 0~2.8GHz

6. ORDER CODE / DIMENSIONS(mm)

◆ Ordering Information

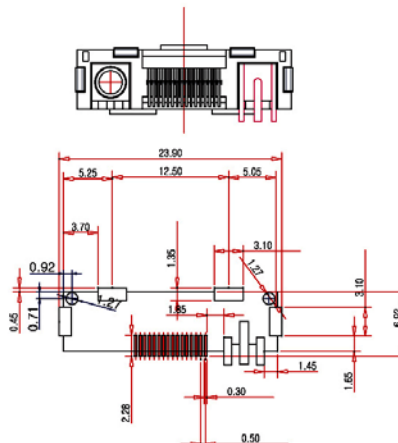
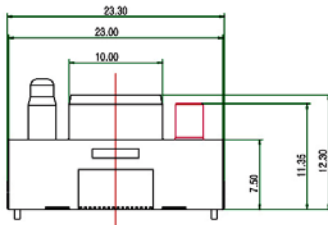
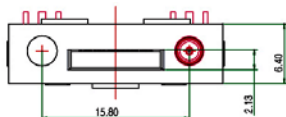
2 0 2 2 2 0 - R
① ② ③ ④ ⑤ ⑥



① 2 : I/O 16P Connector
② 0 : I/O Connector Product
③ 1 : Male(Plug) Type
2 : Female(Socket) Type
④ 1 : Dip Type 2 : SMD Type
3 : Headset Type

⑤ 00 : Double Boss Type 10 : Boss don't use Type
20 : Single R•F Connector use Type
30 : Double R•F Connector use Type
40 : Single R•F Cable use Type
50 : Single R•F Cable use Type
⑥ L : When R•F Connector use(Use to Left)
R : When R•F Connector use(Use to Right)
N : When R•F Connector don't use(Boss Use to Double)
A : When R•F Connector use to Double(Boss don't Use to Double)

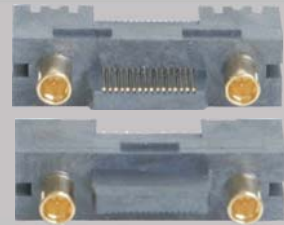
◆ Dimensions



DAELIM ELECTRONICS CO.

◆ I/O 16P Male Connector

I/O 16P Male Connector



1. CHARACTERISTIC

- 1-1. RF Connector Use : Mini Coax' Male Connector (Edge Type)
- 1-2. Cable Ass'y Working Possible

2. APPLICATION

- 2-1. Satellite Radio
- 2-2. DMB(Digital Multimedia Broadcasting)
- 2-3. Navigation

3. ELECTRICAL CHARACTERISTIC

- 3-1. Voltage : 50V
- 3-2. Current : 2A
- 3-3. Contact Resistance : 30m Ω Max.
- 3-4. Dielectric Withstanding Voltage : 500VAC
- 3-5. Insulation Resistance : 500M Ω Min.
- 3-6. Impedance : 50 Ω

4. MECHANICAL CHARACTERISTIC

- 4-1. Insertion Force : 25-50mm Min.
- 4-2. Withdrawal Force : 25-50mm Min.
- 4-3. Durability : 10,000 cycles

5. PHYSIAL CHARACTERISTIC

- 5-1. Housing : LCP(G30%), UL 94V-0
- 5-2. Contact : Phosphor Bronze
- 5-3. Plating : Gold Plating 0.2 μ m
- 5-4. Temperature : -40 $^{\circ}$ C ~ +90 $^{\circ}$ C
- 5-5. Soldering Temperature : 260 $\pm$ 5 $^{\circ}$ C/3sec
- 5-6. Frequency Range : DC 0~2.8GHz



◆ I/O 16P Male Connector

I/O 16P Male Connector

6. ORDER CODE / DIMENSIONS(mm)

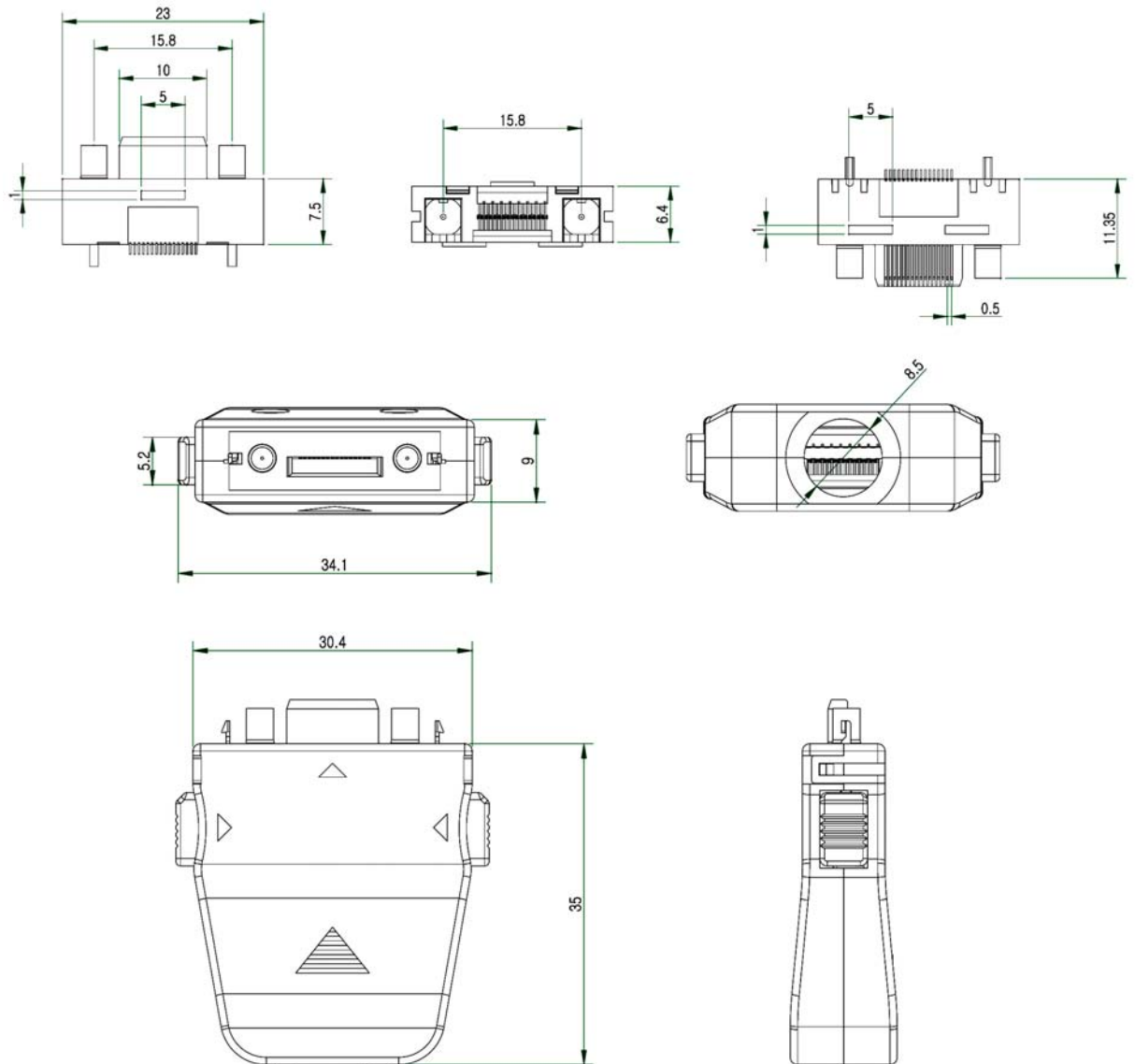
◆ Ordering Information



2 0 1 3 3 0 - A
 ① ② ③ ④ ⑤ ⑥

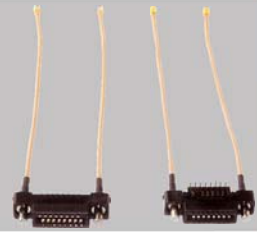
- ① 2 : I/O 16P Connector
- ② 0 : I/O Connector Product
- ③ 1 : Male(Plug) Type
2 : Female(Socket) Type
- ④ 1 : Dip Type 2 : SMD Type
3 : Headset Type
- ⑤ 00 : Double Boss Type 10 : Boss don't use Type
20 : Single R•F Connector use Type
30 : Double R•F Connector use Type
40 : Single R•F Cable use Type
50 : Single R•F Cable use Type
- ⑥ L : When R•F Connector use(Use to Left)
R : When R•F Connector use(Use to Right)
N : When R•F Connector don't use(Boss Use to Double)
A : When R•F Connector use to Double(Boss don't Use to Double)

◆ Dimensions



◆ I/O 16P Female Connector

I/O 16P Female Connector



1. CHARACTERISTIC

1-1. RF Connector Use : MCX + UMP Type Cable

2. APPLICATION

2-1. Satellite Radio

3. ELECTRICAL CHARACTERISTIC

3-1. Voltage : 14V

3-2. Current : 1A

3-3. Contact Resistance : 50mΩ Max.

3-4. Dielectric Withstanding Voltage : 150VAC

3-5. Insulation Resistance : 1,000MΩ Min.

3-6. Impedance : 50Ω

4. MECHANICAL CHARACTERISTIC

4-1. Insertion Force : 20~50mm Min.

4-2. Withdrawal Force : 20~50mm Min.

4-3. Durability : 5,000 cycles

5. PHYSIAL CHARACTERISTIC

5-1. Housing : High Temperature Thermoplastic(G30%), UL 94V-0

5-2. Contact : Phosphor Bronze

5-3. Plating : Nickel with Gold Plating 0.1μm

5-4. Temperature : -20℃ ~ +80℃

5-5. Soldering Temperature : 260±5℃/3sec

6. ORDER CODE / DIMENSIONS(mm)



◆ Ordering Information

8 0 2 2 0 0 D 1 0 0
① ② ③ ④ ⑤ ⑥ ⑦

① 80 : I/O Connector Number

② 1 : Male(Plug) Type 2: Female(Socket) Type

③ 2 : 2ROW(Double)

④ 0 : Straight 1 : Right Angle

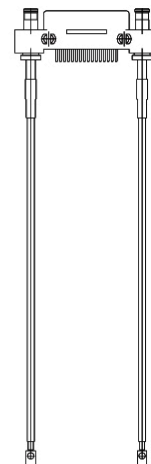
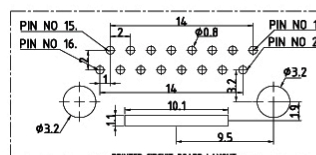
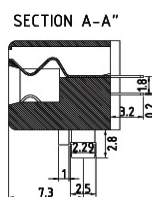
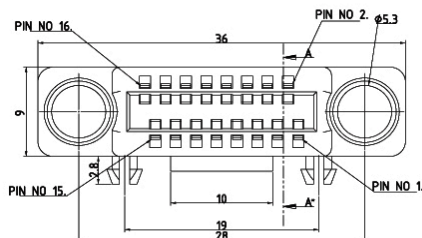
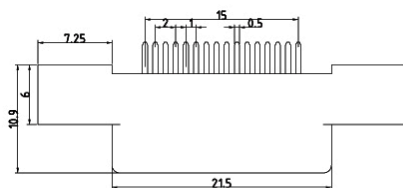
⑤ 0 : Gold Plating 1 : Tin Plating

⑥ D : R•F 2pcs Use

S : R•F 1pc Use

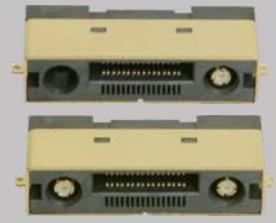
⑦ 100 : 100mm 50 : 50mm
Length All Possible

◆ Dimensions



◆ I/O 16P Female Connector

I/O 16P Female Connector



1. CHARACTERISTIC

1-1. RF Connector Use : Mini Coax' Female Connector (SMD Type)

2. APPLICATION

2-1. Satellite Radio

2-2. DMB(Digital Multimedia Broadcasting)

2-3. Navigation

3. ELECTRICAL CHARACTERISTIC

3-1. Voltage : 50V

3-2. Current : 2A

3-3. Contact Resistance : 30mΩ Max.

3-4. Dielectric Withstanding Voltage : 500VAC

3-5. Insulation Resistance : 500MΩ Min.

3-6. Impedance : 50Ω

4. MECHANICAL CHARACTERISTIC

4-1. Insertion Force : 25-50mm Min.

4-2. Withdrawal Force : 25-50mm Min.

4-3. Durability : 10,000 cycles

5. PHYSIAL CHARACTERISTIC

5-1. Housing : LCP(G30%), UL 94V-0

5-2. Contact : Phosphor Bronze

5-3. Plating : Gold Plating 0.2μm

5-4. Temperature : -40℃ ~ +90℃

5-5. Soldering Temperature : 260±5℃/3sec

5-6. Frequency Range : DC 0~2.8GHz

6. ORDER CODE / DIMENSIONS(mm)

◆ Ordering Information

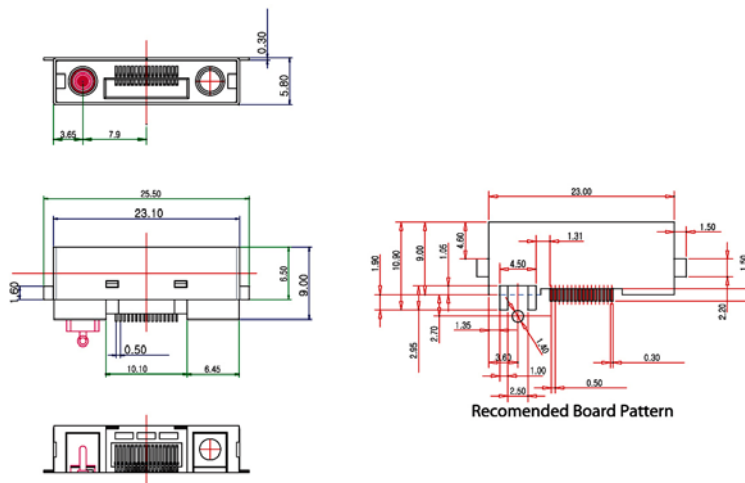
2 0 2 2 2 0 - L
① ② ③ ④ ⑤ ⑥



① 2 : I/O 16P Connector
② 0 : I/O Connector Product
③ 1 : Male(Plug) Type
2 : Female(Socket) Type
④ 1 : Dip Type 2 : SMD Type
3 : Headset Type

⑤ 00 : Double Boss Type 10 : Boss don't use Type
20 : Single R•F Connector use Type
30 : Double R•F Connector use Type
40 : Single R•F Cable use Type
50 : Single R•F Cable use Type
⑥ L : When R•F Connector use(Use to Left)
R : When R•F Connector use(Use to Right)
N : When R•F Connector don't use(Boss Use to Double)
A : When R•F Connector use to Double(Boss don't Use to Double)

◆ Dimensions



◆ I/O 16P Female Connector

I/O 16P Female Connector

6. ORDER CODE / DIMENSIONS(mm)

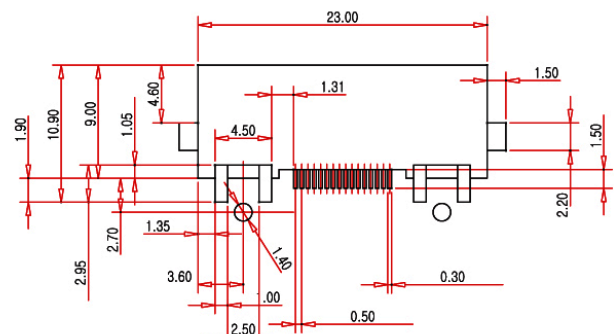
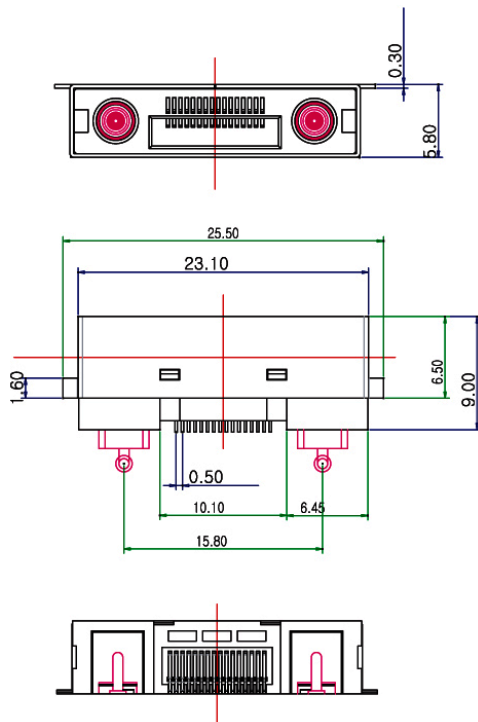
◆ Ordering Information



2 0 2 2 3 0 - A
 ① ② ③ ④ ⑤ ⑥

- | | |
|--------------------------------|--|
| ① 2 : I/O 16P Connector | ⑤ 00 : Double Boss Type 10 : Boss don't use Type |
| ② 0 : I/O Connector Product | 20 : Single R•F Connector use Type |
| ③ 1 : Male(Plug) Type | 30 : Double R•F Connector use Type |
| 2 : Female(Socket) Type | 40 : Single R•F Cable use Type |
| ④ 1 : Dip Type 2 : SMD Type | 50 : Single R•F Cable use Type |
| 3 : Headset Type | ⑥ L : When R•F Connector use(Use to Left) |
| | R : When R•F Connector use(Use to Right) |
| | N : When R•F Connector don't use(Boss Use to Double) |
| | A : When R•F Connector use to Double(Boss don't Use to Double) |

◆ Dimensions



Recommended Board Pattern

- 1-1. RF Connector Use : Mini Coax' Male Connector (SMD Type) 1-2. Bracket Use
1-3. RF Connector not Use : Mini Coax' Male Connector + SMB Type Cable

- ## 2-1. Satellite Radio 2-2. DMB(Digital Multimedia Broadcasting)

- 3-1. Voltage : 50V
3-3. Contact Resistance : 30mΩ Max.
3-5. Insulation Resistance : 500MΩ Min.
- 3-2. Current : 2A
3-4. Dielectric Withstanding Voltage : 500VAC
3-6. Impedance : 50Ω

- 4-1. Insertion Force : 25-50mm Min. 4-2. Withdrawal Force : 25-50mm Min.
4-3. Durability : 30,000 cycles

- 5-1. Housing : LCP(G30%), UL 94V-0
5-2. Contact : Phosphor Bronze
5-3. Plating : Gold Plating 0.2 μ m
5-4. Temperature : -40℃ ~ +90℃
5-5. Soldering Temperature : 260 $\pm$ 5℃/3sec

6. ORDER CODE / DIMENSIONS(mm)

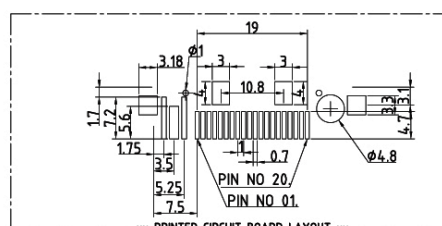
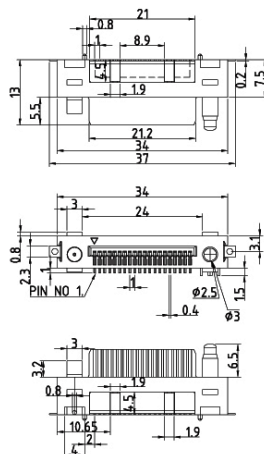
◆ Ordering Information



$\begin{array}{c} 9 \\ \hline \textcircled{1} \end{array}$
 $\begin{array}{c} 0 \\ \hline \textcircled{2} \end{array}$
 $\begin{array}{c} 1 \\ \hline \textcircled{3} \end{array}$
 $\begin{array}{c} 2 \\ \hline \textcircled{4} \end{array}$
 $\begin{array}{c} 20 \\ \hline \textcircled{5} \end{array}$
 $\begin{array}{c} R \\ \hline \textcircled{6} \end{array}$

- ① 9 : I/O Connector Number ⑤ 00 : Double Boss Type 10 : Boss don't use Type
 ② 0 : I/O Connector Product 20 : Single R•F Connector use Type
 ③ 1 : Male(Plug) Type 30 : Double R•F Connector use Type
 2 : Female(Socket) Type 40 : Single R•F Cable use Type
 50 : Single R•F Cable use Type
 ④ 1 : Dip Type 2 : SMD Type ⑥ L : When R•F Connector use(Use to Left)
 R : When R•F Connector use(Use to Right)
 N : When R•F Connector don't use(Boss Use to Double)
 A : When R•F Connector use to Double(Boss don't Use to Double)

◆ Dimensions



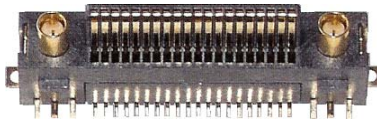
◆ I/O 20P Male Connector

I/O 20P Male Connector

6. ORDER CODE / DIMENSIONS(mm)

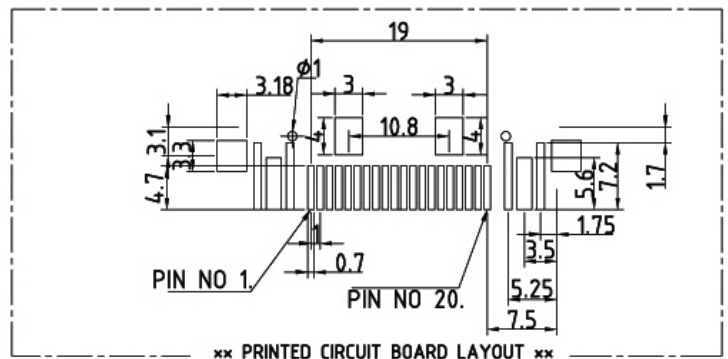
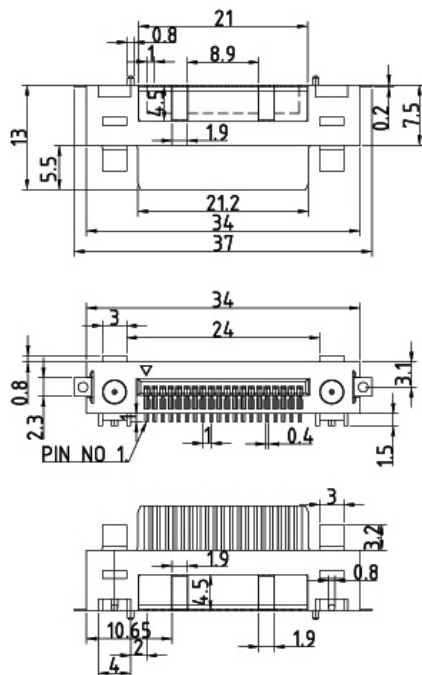
◆ Ordering Information

9 0 1 2 3 0 - A
 ① ② ③ ④ ⑤ ⑥



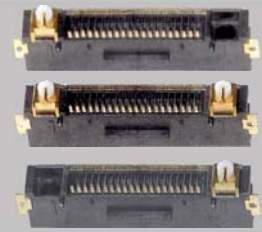
- | | |
|--------------------------------|--|
| ① 2 : I/O Connector Number | ⑤ 00 : Double Boss Type 10 : Boss don't use Type |
| ② 0 : I/O Connector Product | 20 : Single R•F Connector use Type |
| ③ 1 : Male(Plug) Type | 30 : Double R•F Connector use Type |
| 2 : Female(Socket) Type | 40 : Single R•F Cable use Type |
| ④ 1 : Dip Type 2 : SMD Type | 50 : Single R•F Cable use Type |
| | ⑥ L : When R•F Connector use(Use to Left) |
| | R : When R•F Connector use(Use to Right) |
| | N : When R•F Connector don't use(Boss Use to Double) |
| | A : When R•F Connector use to Double(Boss don't Use to Double) |

◆ Dimensions



◆ I/O 20P Female Connector

I/O 20P Female Connector



1. CHARACTERISTIC

1-1. RF Connector Use : Mini Coax' Female Connector (SMD Type)

2. APPLICATION

2-1. Satellite Radio

2-2. DMB(Digital Multimedia Broadcasting)

3. ELECTRICAL CHARACTERISTIC

3-1. Voltage : 50V

3-2. Current : 2A

3-3. Contact Resistance : 30mΩ Max.

3-4. Dielectric Withstanding Voltage : 500VAC

3-5. Insulation Resistance : 500MΩ Min.

3-6. Impedance : 50Ω

4. MECHANICAL CHARACTERISTIC

4-1. Insertion Force : 25-50mm Min.

4-2. Withdrawal Force : 25-50mm Min.

4-3. Durability : 30,000 cycles

5. PHYSIAL CHARACTERISTIC

5-1. Housing : LCP(G30%), UL 94V-0

5-2. Contact : Phosphor Bronze

5-3. Plating : Gold Plating 0.2μm

5-4. Temperature : -40℃ ~ +90℃

5-5. Soldering Temperature : 260±5℃/3sec

6. ORDER CODE / DIMENSIONS(mm)

◆ Ordering Information

9 0 2 2 2 0 - L
① ② ③ ④ ⑤ ⑥



① 9 : I/O Connector Number

⑤ 00 : Double Boss Type 10 : Boss don't use Type

② 0 : I/O Connector Product

20 : Single R•F Connector use Type

③ 1 : Male(Plug) Type

30 : Double R•F Connector use Type

2 : Female(Socket) Type

40 : Single R•F Cable use Type

50 : Single R•F Cable use Type

④ 1 : Dip Type

2 : SMD Type

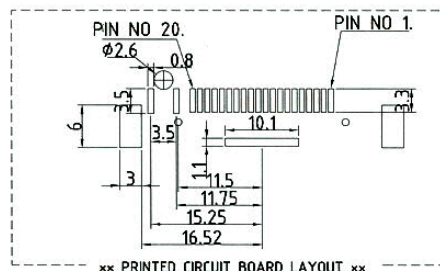
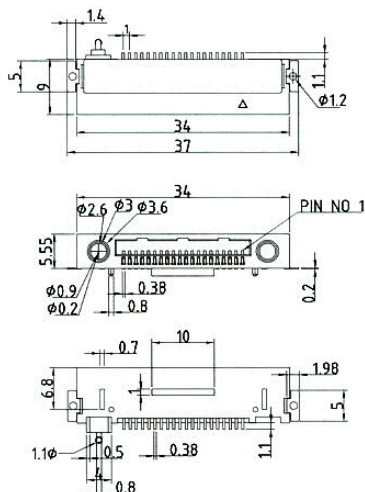
⑥ L : When R•F Connector use(Use to Left)

R : When R•F Connector use(Use to Right)

N : When R•F Connector don't use(Boss Use to Double)

A : When R•F Connector use to Double(Boss don't Use to Double)

◆ Dimensions



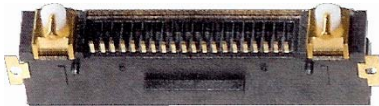
◆ I/O 20P Female Connector

I/O 20P Female Connector

6. ORDER CODE / DIMENSIONS(mm)

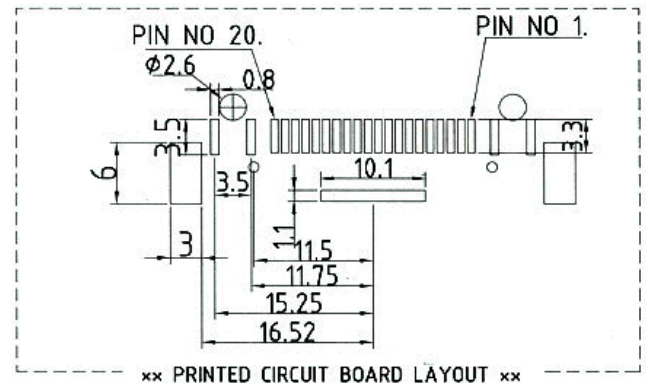
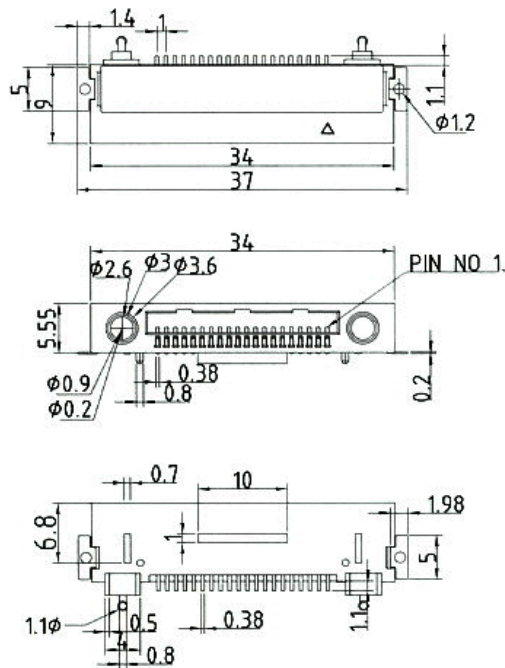
◆ Ordering Information

$\frac{9}{\text{①}}$
 $\frac{0}{\text{②}}$
 $\frac{2}{\text{③}}$
 $\frac{2}{\text{④}}$
 $\frac{30}{\text{⑤}}$
 $\frac{A}{\text{⑥}}$



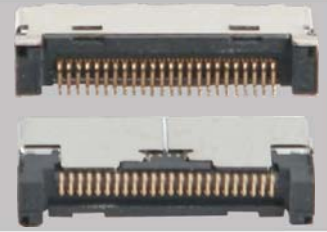
- | | |
|--------------------------------|--|
| ① 2 : I/O Connector Number | ⑤ 00 : Double Boss Type 10 : Boss don't use Type |
| ② 0 : I/O Connector Product | 20 : Single R•F Connector use Type |
| ③ 1 : Male(Plug) Type | 30 : Double R•F Connector use Type |
| 2 : Female(Socket) Type | 40 : Single R•F Cable use Type |
| ④ 1 : Dip Type 2 : SMD Type | 50 : Single R•F Cable use Type |
| | ⑥ L : When R•F Connector use(Use to Left) |
| | R : When R•F Connector use(Use to Right) |
| | N : When R•F Connector don't use(Boss Use to Double) |
| | A : When R•F Connector use to Double(Boss don't Use to Double) |

◆ Dimensions



◆ I/O 24P Connector

I/O 24P Connector



1. APPLICATION

- 1-1. DMB(Digital Multimedia Broadcasting)
- 1-2. Navigation

2. ELECTRICAL CHARACTERISTIC

- 2-1. Voltage : 100V
- 2-2. Current : 3A
- 2-3. Contact Resistance : 50mΩ Max.
- 2-4. Dielectric Withstanding Voltage : 300VAC
- 2-5. Insulation Resistance : 1,000MΩ Min.

3. MECHANICAL CHARACTERISTIC

- 3-1. Lock Pulling Force : 200kg/Min
- 3-2. Durability : 10,000 cycles

4. PHYSIAL CHARACTERISTIC

- 4-1. Housing : PA9T, UL 94V-0
- 4-2. Contact : Phosphor Bronze
- 4-3. Plating : Gold Plating 0.3μm
- 4-4. Temperature : -30℃ ~ +80℃
- 4-5. Soldering Temperature : 260±5℃/10sec

5. ORDER CODE / DIMENSIONS(mm)

◆ Ordering Information



- 4 0 2 1 B □
- ① ② ③ ④ ⑤ ⑥

- ① 4 : I/O 24P Connector
- ② 0 : I/O Connector Product
- ③ 1 : Male(Plug) Type
2 : Female(Socket) Type

- ④ 1 : Terminal(SMD) + Cover(Dip)
2 : Terminal(SMD) + Cover(SMD)

- ⑤ B : Length of Boss

- ⑥ 1 : 0.75mm 2 : 1.00mm 3 : 1.80mm

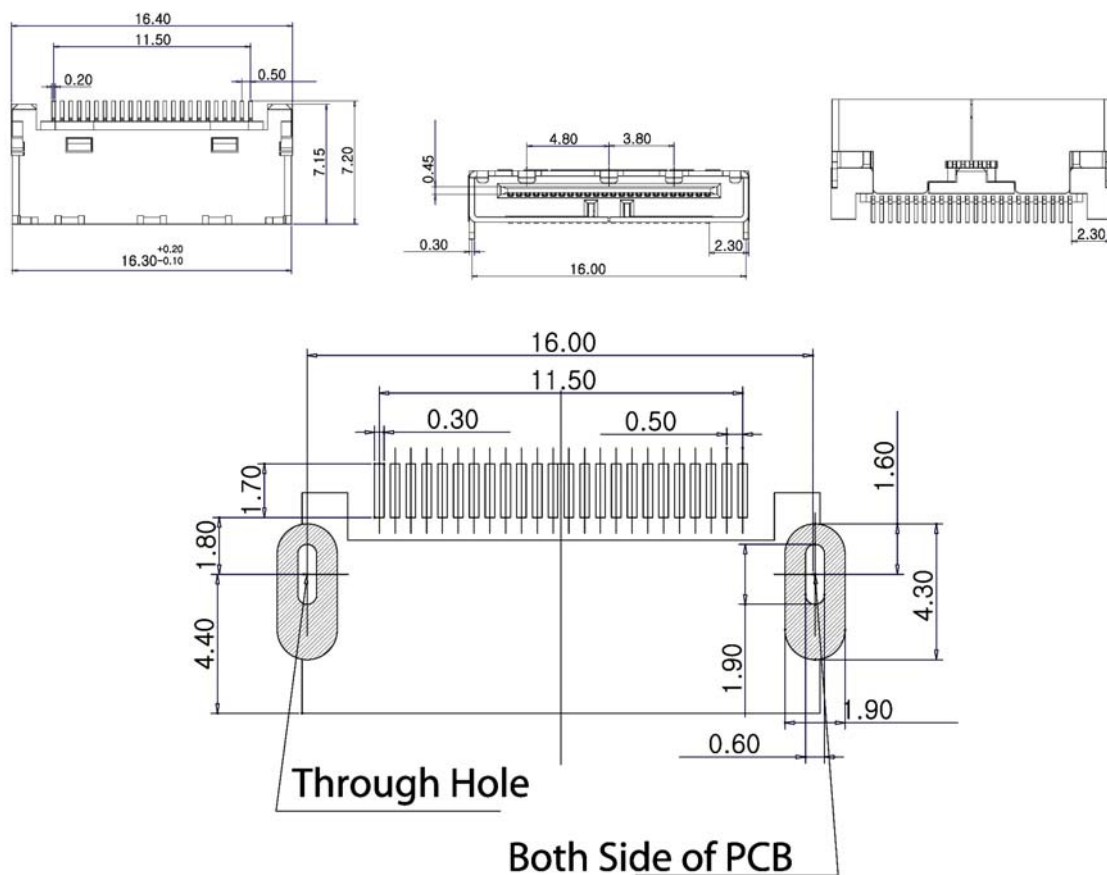


◆ I/O 24P Connector

I/O 24P Connector

5. ORDER CODE / DIMENSIONS(mm)

◆ Dimensions



Recomended Board Pattern