Magnecraft® Solid State Relays

70S2

SPST-NO, 3 A to 25 A

70S2 (V) Relay

70S2 (F) Relay

70S2 (S) Relay

70S2 (M) Relay

70S2 (N) Relay

Description

The 70S2 Series are miniature solid state relays ideal for small space applications. They are available in panel and PCB mount, which increases the level of flexibility for designers.

Feature	Benefit
Solid state circuitry	Involves no moving parts
Optically coupled circuit	Provides isolation between input and output circuits
Internal snubber	Helps protect the relay's internal circuit from high voltage transients
Small package size	Ideal for small spaces
Panel and PCB mounting	Increases functionality and ease of use

Switching Type	Switching Device	Input Voltage Range	Output Voltage Range	Rated Output Current (A)	Terminal Style	Mounting Style	Standard Part Number
DC switching	MOSFET	3–15 Vdc	3–60 Vdc	3	Solder	PCB Mount	70S2-01-A-03-V
				5	Blade	Panel Mount	70S2-01-A-05-N
					Screw	Panel Mount	70S2-01-A-05-S
		9–30 Vdc	3–60 Vdc	5	Screw	Panel Mount	70S2-02-A-05-S
Zero cross	Triac	3–30 Vdc	24–140 Vac	4	Solder	PCB Mount	70S2-04-B-04-F
				6	Blade	Panel Mount	70S2-04-B-06-N
					Screw	Panel Mount	70S2-04-B-06-S
				12	Blade	Panel Mount	70S2-04-B-12-N
					Screw	Panel Mount	70S2-04-B-12-S
				25	Screw	Panel Mount	70S2-03-B-25-S
			24–280 Vac	6	Blade	Panel Mount	70S2-04-C-06-N
					Screw	Panel Mount	70S2-04-C-06-S
				10	Solder	PCB/Panel Mount	70S2-04-C-10-M
				12	Blade	Panel Mount	70S2-04-C-12-N
					Screw	Panel Mount	70S2-04-C-12-S
					Screw	Panel Mount	70S2-06-C-12-S
				25	Screw	Panel Mount	70S2-03-C-25-S
		3–32 Vdc	24–140 Vac	3	Solder	PCB Mount	70S2-04-B-03-V
			24–280 Vac	3	Solder	PCB Mount	70S2-04-C-03-V
			8–50 Vac	3	Solder	PCB Mount	70S2-04-D-03-V
		6–30 Vdc	24–280 Vac	12	Screw	Panel Mount	70S2-05-C-12-S

Part Number Explanation

70S2 - 01 - A - 03 - V

Series:
70S2

Input Voltage:
01 = 3 to 15 Vdc
02 = 9 to 30 Vdc
03 = 3 to 30 Vdc
04 = 3 to 30 Vdc
05 = 6 to 30 Vdc
06 = 6 to 30 Vdc

Output Voltage:
A = 3 to 60 Vdc
B = 24 to 140 Vac
C = 24 to 280 Vac
D = 8 to 50 Vac

Output Current:
03 = 3 A
04 = 4 A
05 = 5 A
06 = 6 A
10 = 10 A
12 = 12 A
25 = 25 A

Package Type:
F = PCB Mount w/Solder Terminals
M = PCB/Panel Mount w/Solder Terminals
N = Panel Mount w/Blade Terminals
S = Panel Mount w/Screw Terminals
V = PCB Mount w/Solder Terminals

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Specifications (UL 508)

Part Number	70S2-01-A	70S2-02-A	70S2-03-B	70S2-03-C
Input Characteristics				
Control Voltage Range	3–15 Vdc	9–30 Vdc	3–30 Vdc	
Must Release Voltage	1 Vdc			
Typical Input Current	5–40 mA	5–17 mA	7–16 mA	6–10 mA
Maximum Reverse Control Voltage	3 Vdc			
Output Characteristics				
Switching Device	MOSFET		Triac	
Switching Type	DC Switching		Zero Cross	
Contact Configuration	SPST-NO			
Output Voltage Range	3–60 Vdc		24–140 Vac	24–280 Vac
Peak Blocking Voltage	105 Vdc		400 Vac	600 Vac
Maximum Rate of Rise Off State Voltage (dv/dt)	N/A		300 V/us	
Output Current Range (rms)	3–5 A	5 A	25 A	25 A
Minimum Load Current–Maintain On	N/A		100 mA	
Non-Repetitive Surge Current (8.3 ms)	3 A: 5 A (1 s); 5 A: 7 A (1 s)		300 A	
Maximum Off State Leakage Current (rms)	10 mA		6 mA	
Typical On State Voltage Drop (rms)	3 A: 1.2 Vdc; 5 A: 1.85 Vdc		1.7 Vac	
Maximum Turn-On Time	75 ms		8.3 ms	
Maximum Turn-Off Time	3 A: 500 ms; 5 A: 75 ms		8.3 ms	
General Characteristics				
Electrical Life	N/A for solid state relays			
Thermal Resistance (Junction–Case)	3 A: 0.5 °C/W; 5/25 A: 4 °C/W			
Dielectric Strength (Input–Output)	3 A: 4000 Vac; 5 A: 2500 Vac		3000 Vac	
Dielectric Strength (Terminals–Chassis)	3 A: 4000 Vac; 5 A: 2500 Vac		3000 Vac	
Operating Temperature Range	-40–+100 °C			
Storage Temperature Range	-40–+125 °C			
Weight	F/M: 35 g (1.2 oz): N/S: 47 g (1.7 oz); V: 25 g (0.9oz)			
Agency Approvals	UL Recognized (E258297); CSA (040787); RoHS			

Specifications (UL 508)

Part Number	70S2-04-B	70S2-04-C	70S2-04-D	70S2-05-C	70S2-06-C
Input Characteristics					
Control Voltage Range	3 A: 3–32 Vdc; 4/6/10/12 A: 3–30 Vdc			6–30 Vdc	3–30 Vdc
Must Release Voltage	1 Vdc				
Typical Input Current	3 A: 1–19 mA; 4/6/10/12 A: 7–16 mA			6–10 mA	1–17 mA
Maximum Reverse Control Voltage	3 Vdc				
Output Characteristics					
Switching Device	Triac				
Switching Type	Zero Cross				
Contact Configuration	SPST-NO				
Output Voltage Range	24–140 Vac	24–280 Vac	8–50 Vac	24–280 Vac	
Peak Blocking Voltage	400 Vac	600 Vac	200 Vac	600 Vac	
Maximum Rate of Rise Off State Voltage (dv/dt)	300 V/us				
Output Current Range (rms)	3–12 A	3–12 A	3 A	12 A	
Minimum Load Current–Maintain On	3/4/6 A: 75 mA; 10/12 A: 100 mA				
Non-Repetitive Surge Current (8.3 ms)	3/4/6 A: 60 A; 10/12 A: 150 A				
Maximum Off State Leakage Current (rms)	6 mA		10 mA	6 mA	
Typical On State Voltage Drop (rms)	1.6 Vac				
Maximum Turn-On Time	8.3 ms				
Maximum Turn-Off Time	8.3 ms				
General Characteristics					
Electrical Life	N/A for solid state relays				
Thermal Resistance (Junction–Case)	3 A: 0.5 °C/W ; 4/6/10/12 A: 4 °C/W				2.4 °C/W
Dielectric Strength (Input–Output)	3 A: 4000 Vac; 4/6/10/12 A: 3000 Vac				
Dielectric Strength (Terminals–Chassis)	3 A: 4000 Vac; 4/6/10/12 A: 3000 Vac				
Operating Temperature Range	-40–+100 °C (derating applies)				
Storage Temperature Range	-40–+125 °C				
Weight	F/M: 35 g (1.2 oz): N/S: 47 g (1.7 oz); V: 25 g (0.9 oz);				
Agency Approvals	UL Recognized (E258297); CSA (040787); RoHS				

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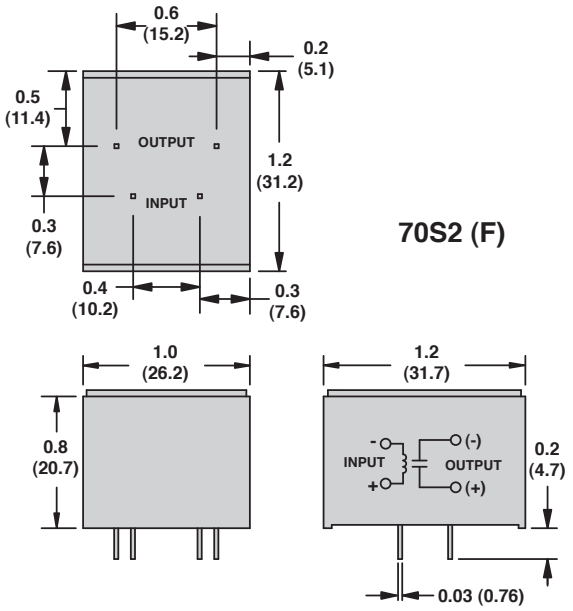
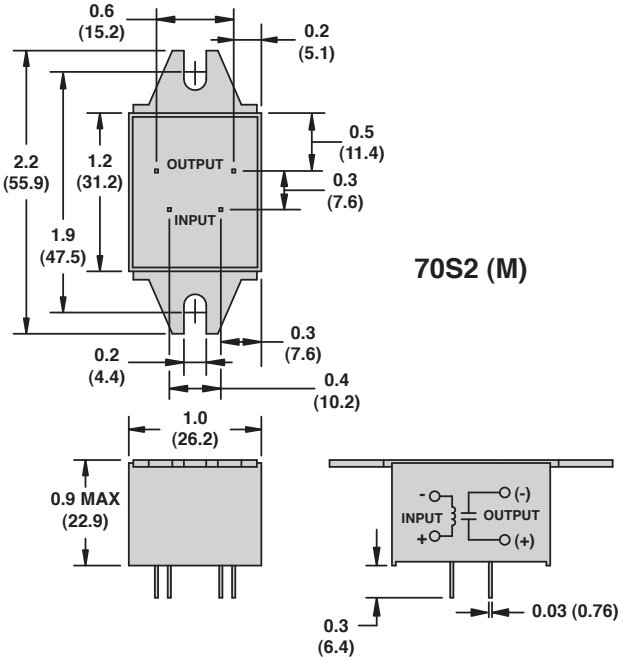
Dimensions: inches (millimeters)



70S2 (F)



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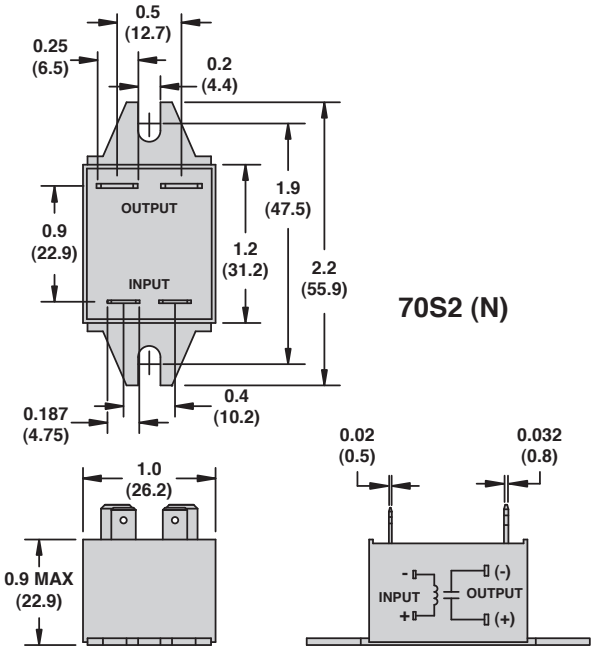

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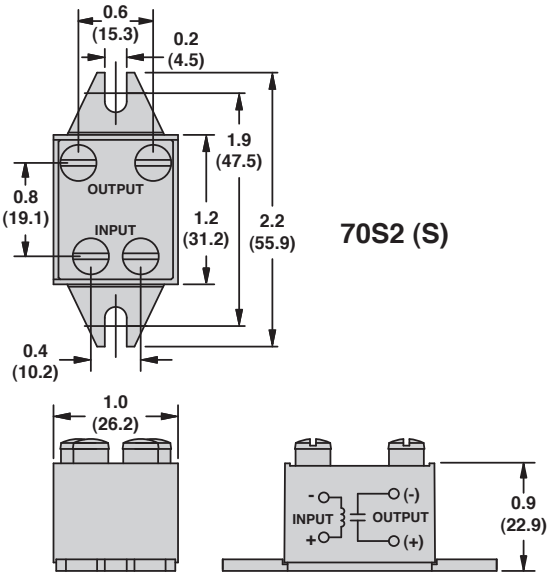
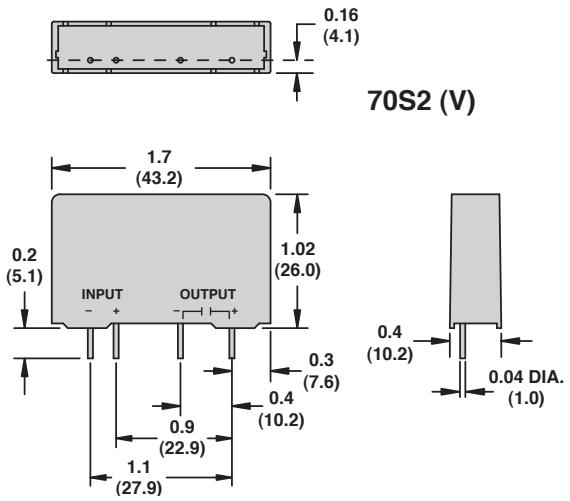
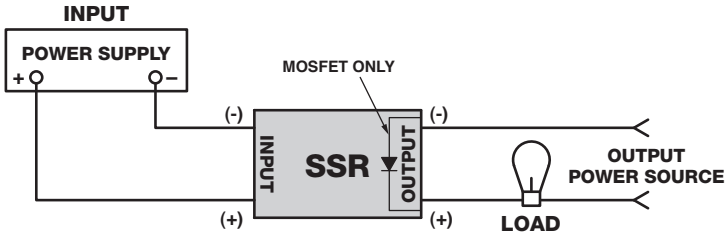


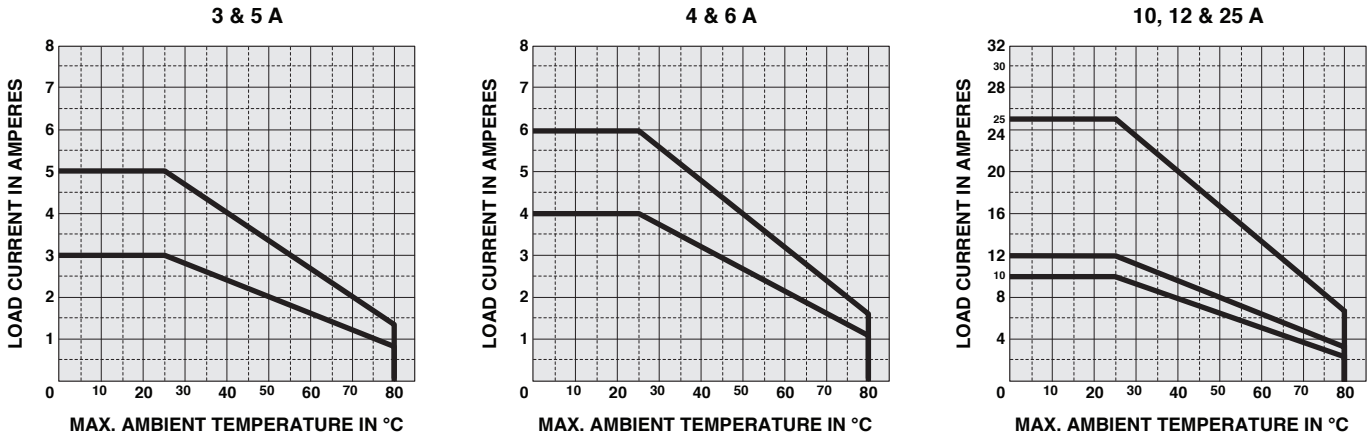
70S2 (S)

Dimensions: inches (millimeters)



Wiring Diagram



De-Rating Curves

Load Current vs Ambient Temperature (100% Duty Cycle)