

Solid State Relays PCB 1-Phase ZS/IO Types RP1A..D10, RP1B..D10



- AC Solid State Relay primarily for PCB mounting
- Zero switching or instant-on
- Rated operational current: 10 A (25 A peak)
- Rated operational voltage: Up to 600 V
- Surface mount technology
- Flexible encapsulation for extended life
- Control voltage: 4 to 32 VDC*
- Opto-isolation: > 4000 Vrms
- Non-repetitive peak voltage: 1200 V_p
- Non-repetitive surge current up to 300 A

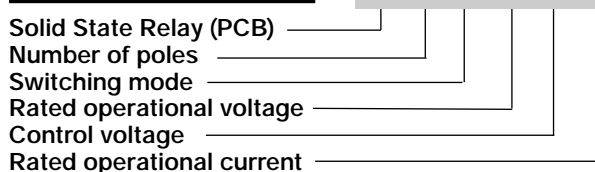
Product Description

The RP1..D10 is a SSR series for socket or PCB-mounting, providing an ideal interface between logic controls and AC loads. The RP1..D10 is designed for resistive and inductive load switching up to 600V. The integral heatsink allows switching of a high current in this compact package. This new series improves technical design by introducing stress-free flexible encapsulation on SMD components

and automated assembly. Opto-isolation and load switching are performed by individual components, providing higher reliability. This relay can also drive high AC53a loads up to 7 A. The Solid State technology used can withstand peak voltages of 1200V, making the RP1..D10 series suitable to drive AC loads such as loaded induction motors.

Ordering Key

RP 1 A 60 D 10



Type Selection

Switching mode	Rated operational voltage	Rated operational current	Control voltage
A: Zero switching	23: 230 VACrms	10: 10 AACrms	D: 4-32 VDC
B: Instant-On switching	40: 400 VACrms 48: 480 VACrms 60: 600 VACrms		* 3-32 VDC for 230 and 400 VAC

Selection Guide

Rated operational voltage	Non-rep. voltage	Control voltage	Rated operational current 10 A
230 Vrms	650 V _p	3-32 VDC	RP1A23D10
400 Vrms	850 V _p	3-32 VDC	RP1A40D10
480 Vrms	1000 V _p	4-32 VDC	RP1A48D10
600 Vrms	1200 V _p	4-32 VDC	RP1A60D10

General Specifications

	RP1.23D10	RP1.40D10	RP1.48D10	RP1.60D10
Operational voltage range	12-265 Vrms	12- 440 Vrms	12-530 Vrms	12-660 Vrms
Non-rep. peak voltage	< 650 V _p	< 850 V _p	< 1000 V _p	< 1200 V _p
Rated insulated input to output	4 kV	4 kV	4 kV	4 kV
Operational frequency range	45 - 65 Hz	45 - 65 Hz	45 - 65 Hz	45 - 65 Hz
Power factor	> 0.5	> 0.5	> 0.5	> 0.5
Zero voltage turn-on	< 10 V	< 10 V	< 10 V	< 10 V
Approvals**	UR, CUR	UR, CUR	UR, CUR	UR, CUR
CE-marking	Yes	Yes	Yes	Yes

**Approvals pending



Output Specifications

	RP1.23D10, RP1.40D10 RP1.48D10	RP1.60D10
Rated operational current AC51 @ Ta=25°C AC53a @ Ta=25°C	10 A 7 A	10 A 6 A
Min. operational load current	10 mA	10 mA
Rep. overload current t=1 s	40 A _p	35 A _p
Non-rep. surge current t=20 ms	250 A _p	200 A _p
Off-state leakage current	< 3 mA	< 3 mA
I ² t for fusing t=10 ms	450 A ² s	310 A ² s
Critical di/dt @ 50 Hz	50 A/μs	50 A/μs
Critical dV/dt off-state min.	500 V/μs	500 V/μs
On-state voltage drop max.@ rated current	< 1.5 Vrms	< 1.5 Vrms

Input Specifications

Control voltage DC RP1A23D10, RP1A40D10 RP1A48D10, RP1A60D10	3 - 32 VDC 4 - 32 VDC
Pick-up voltage RP1A23D10, RP1A40D10 RP1A48D10, RP1A60D10	2.8 VDC 3.8 VDC
Drop-out voltage	1.2 VDC
Input current max.	10 mA
Max. reverse voltage	32 VDC
Response time pick-up RP1A	1/2 cycle
Response time drop-out	1/2 cycle

Thermal Specifications

Operating temperature	-30° to +80°C (-22° to +176° F)
Storage temperature	-40° to +100°C (-40° to +212° F)

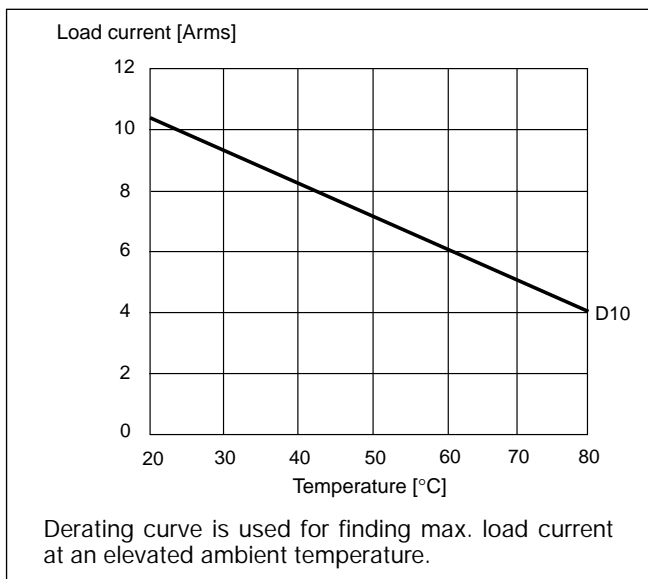
Insulation Input - Output

Insulation resistance	≥ 10 ¹⁰ Ω
Insulation capacitance	≤ 8 pF

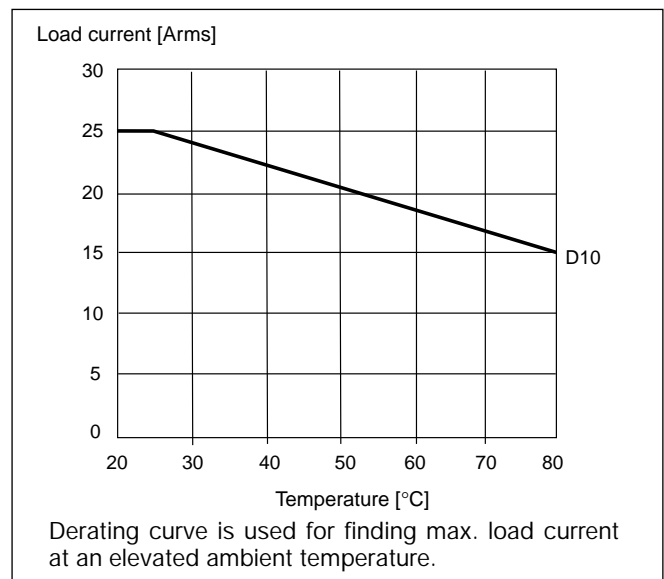
Housing Specifications

Weight	Approx. 40 g
Housing material	Black Epoxy coating
Terminals	Copper alloy, tin-plated

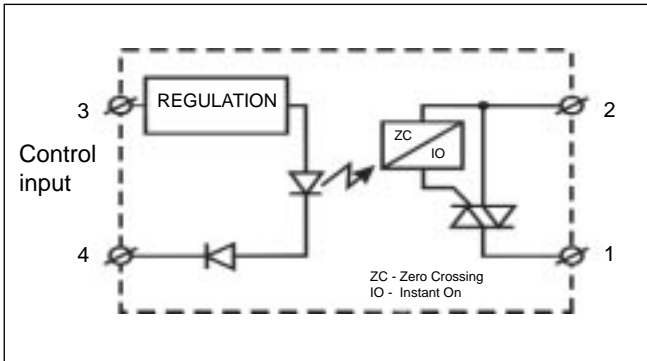
Derating Curve (convection cooling)



Derating Curve (forced air cooling)



Functional Diagram

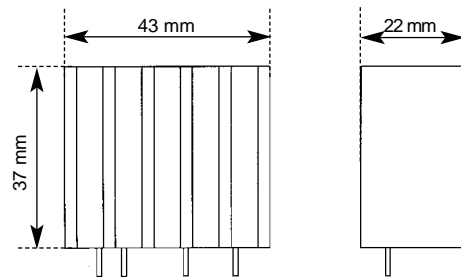
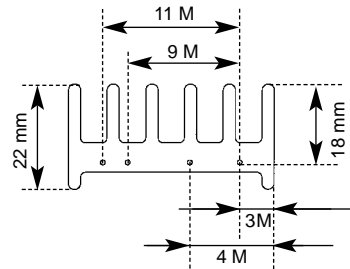


Applications

These relays can be used to switch heaters, motors, lights, valves or solenoids.

If more than one relay is mounted, please allow a minimum distance of 20 mm in between for sufficient air cooling.

Dimensions



M = 2.54 mm = 1/10 "