PCB Mount

KS20

Solid State Relay

CE

DESCRIPTION

KS20 is a set of SPST-NO AC output PCB mount Mini-SIP type SSR. Adopting the SMT process, the SSR has high surge current resistance, suitable for the control of electromagnetic valves, motors, electric incandescent lamps, etc. It has 3 options of DC input 5VDC, 12VDC and 24VDC for section and provides photoelectric isolation between input and output and offers two alternative switching modes: zero-cross turn-on and random turn-on.

FEATURES

◆ Load current 1.5A

◆ Photoelectric isolation

◆ Dielectric strength 2000V

◆ PCB mount

PRECAUTIONS

1. Soldering must be completed within 10s at 260°C or 5s at 350°C.

2. The SSR's case serves to dissipate the heat generated by the SSR itself. If poor ventilation is unavoidable, the load current must be derated. Please refer to the curve of Max. Load Current vs. Ambient Temperature for derating.

3. The internal input circuit of SSR does not have the reverse polarity protection, thus make sure the wiring of input and output and the input polarity are correct so as to avoid any damage to the SSR.

4. If the output transient voltage exceeds the nominal value, a varistor should be connected to the SSR's output terminal in parallel to prevent the SSR being broken down. The recommended varistor voltage is 470V.

5. When the SSR is used for phase modulation, the time interval between the negative edge of the input pulse signal and the line voltage zero crossing point must last over 200µs, or it may be out of control.

6. For inductive loads, the output terminal of SSR should bridge an RC snubber, which can suppress the transient voltage and the surge caused by the voltage build-up rate to the SSR.

7. Please do not use the SSR exceeding the limitation which is specified on this datasheet.

8. Please refer to below wiring diagram.
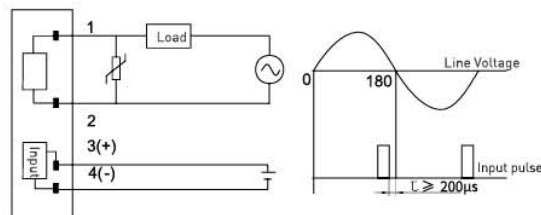
SELECTION GUIDE

KS20/	12-	24	Z	1R2	N	(XXX)
Type	Control voltage	Load voltage	Switching mode	Load current	RC snubber	Customer special code
	5: 5VDC 12: 12VDC 24: 24VDC	24: 240VAC	Z: Zero-cross P: Random	1R2: 1.2A 1R5: 1.5A	N: Not included Nil: Included	

Note: Customer special code 242 stands for the item with special terminal layout. Please refer to the following outline dimensions on Page 24.

INPUT SPECIFICATIONS (Ta=25°C)

Control voltage range	5	4 ~ 6VDC
	12	9.6 ~ 14.4VDC
	24	19.2 ~ 28.8VDC
Must turn-on voltage	5	4VDC
	12	9.6VDC
	24	19.2VDC
Must turn-off voltage		1.0VDC
Max. input current		20mA
Input resistance	5	270Ω
	12	750Ω
	24	1.64kΩ

OUTPUT SPECIFICATIONS (Ta=25°C)

Load voltage range		48 ~ 280 VAC
Load current range		0.1 ~ 1.5A
Max. surge current (10ms)		25Apk
Max. I²t for fusing (10ms)		3.1A² s
Max. off-state leakage current		1.5mA
Max. on-state voltage drop		1.5Vr.m.s.
Max. turn-on time	Zero-cross	1/2 Cycle + 1ms
	Random	1ms
Max. turn-off time		1/2 Cycle + 1ms
Max. transient voltage		600Vpk
Min. off-state (dv/dt)		200V/μs
Max. zero-cross overvoltage		±15V
Min. power factor		0.5

PCB Mount

Panel Mount

DIN Rail Mount

Motor Reversing Module

Intelligent SSR

SSR Accessories

GENERAL SPECIFICATIONS (Ta=25℃)

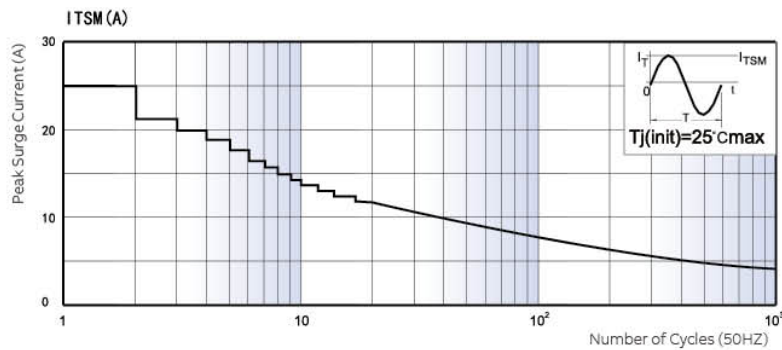|	
Dielectric strength (input/output)	2000VAC, 50Hz/60Hz, 1min
Insulation resistance	1000MΩ (500VDC)
Vibration resistance	10 ~ 55Hz, 1.5mm, DA
Shock resistance	980m/s²
Operating temperature	-30 ~ 80℃
Storage temperature	-30 ~ 100℃
Ambient humidity	45% ~ 85% RH
Unit weight	Approx. 3.5g

OUTLINE DIMENSIONS, WIRING DIAGRAM AND PCB LAYOUT

Unit: mm

Standard

Outline Dimensions

PCB Layout (Bottom view)

(242): The type with different terminals layout

Outline Dimensions

PCB Layout (Bottom view)

OUTLINE DIMENSIONS, WIRING DIAGRAM AND PCB LAYOUT

PCB Mount

Panel Mount

DIN Rail Mount

Motor Reversing Module

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Wiring Diagram

Control signal

Source

Load

1   2   3+   4 −
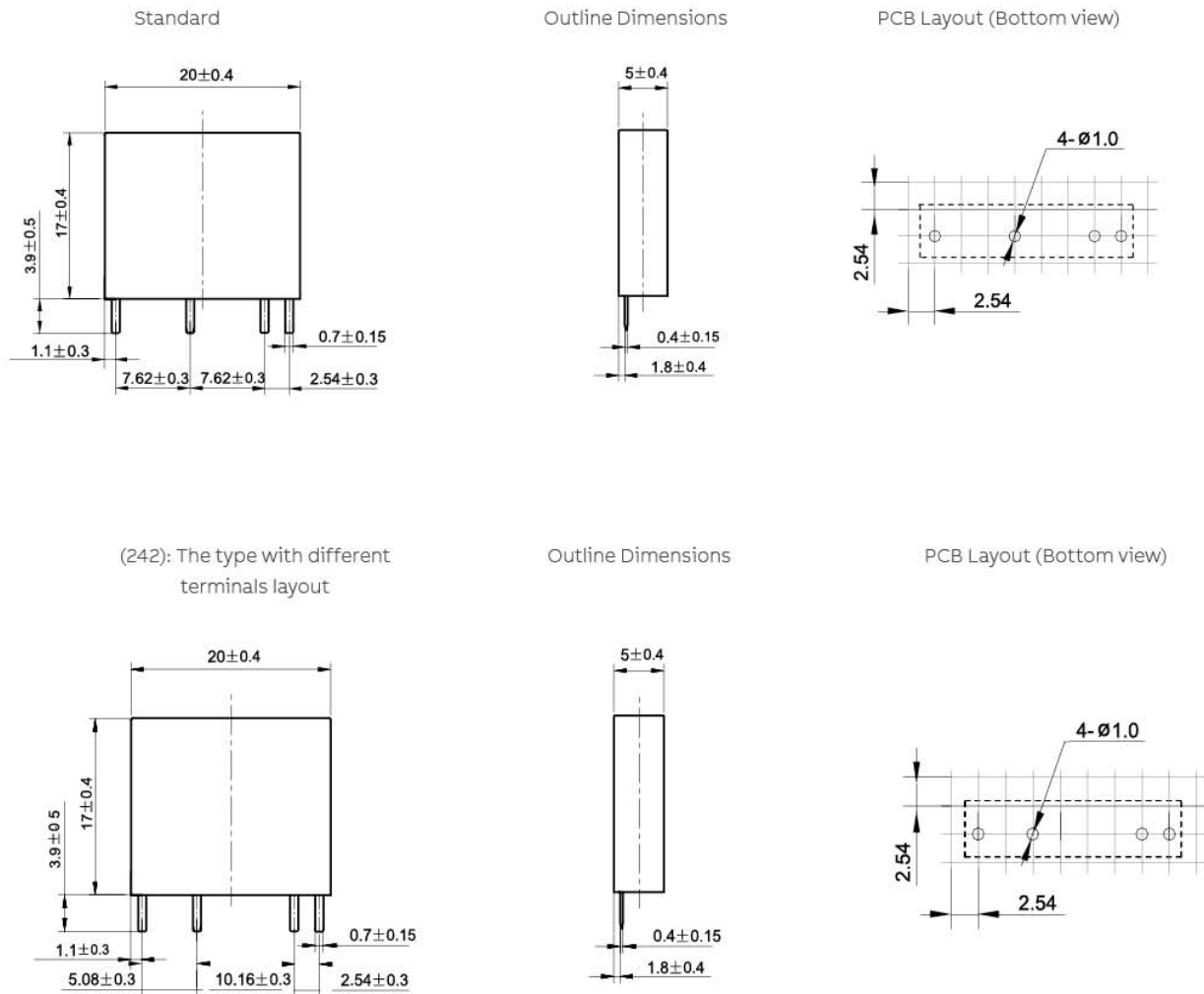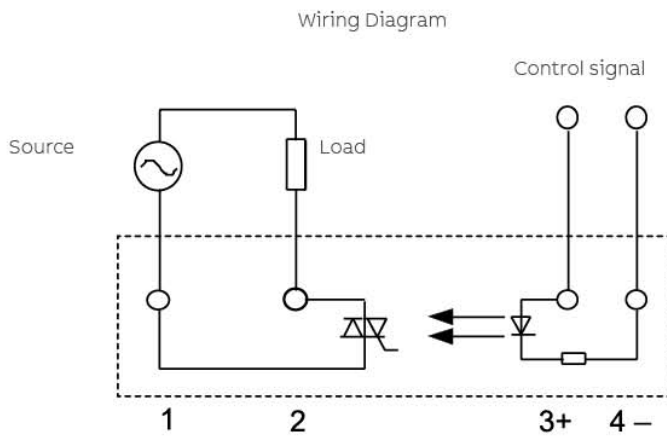
CHARACTERISTIC CURVES

Max. Load Current vs. Ambient Temperature

Load Current (A)

1.5A type

1.2A type

Ambient Temperature (°C)
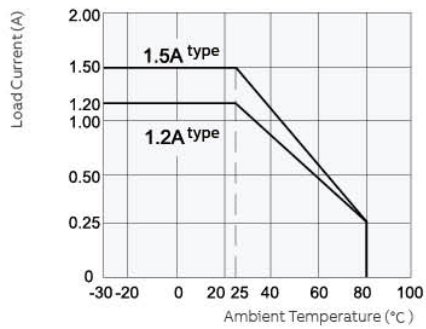
Max. Permissible Non-repetitive Peak Surge Current vs. Number of Cycles

I TSM (A)

Peak Surge Current (A)

Tj(init)=25°Cmax

Number of Cycles (50HZ)