ZGZX SOLID STATE RELAYS

VSG Series Single Phase Solid State Relays

Features

- Photoelectric isolation between control loop and load loop
- Zero-crossing output or random turn-on can be selected
- International Standardized Installation Dimensions
- LED indicates working status
- Built-in RC absorption circuit, strong anti-interference ability
- Epoxy resin potting, strong anti-corrosion and anti-explosion ability
- DC 3-32VDC or AC 90-280VAC input control

Ordering Options

VSG — VSG Series
Single Phase
Solid State Relay

40 — Load Current
10: 10Amps
25: 25Amps
40: 40Amps
60: 60Amps
80: 80Amps
100: 100Amps
120: 120Amps

D — Control Voltage
D: 3-32VDC
A: 90-280VAC

A28 — Output Voltage
A28: 24-280VAC
A48: 48-480VAC
A66: 48-660VAC

Z — Switching Type
Z: Zero Cross Turn-on
R: Random Turn-on

Product Selection

Control Voltage	Output Voltage	Rated Operational Current						
		10Amps	25Amps	40Amps	60Amps	80Amps	100Amps	120Amps
3 to 32VDC	280VAC "Z"	VSG10DA28Z	VSG25DA28Z	VSG40DA28Z	VSG60DA28Z	VSG80DA28Z	VSG100DA28Z	VSG120DA28Z
3 to 32VDC	280VAC "R"	VSG10DA28R	VSG25DA28R	VSG40DA28R	VSG60DA28R	VSG80DA28R	VSG100DA28R	VSG120DA28R
90 to 280VAC	280VAC "Z"	VSG10AA28Z	VSG25AA28Z	VSG40AA28Z	VSG60AA28Z	VSG80AA28Z	VSG100AA28Z	VSG120AA28Z
90 to 280VAC	280VAC "R"	VSG10AA28R	VSG25AA28R	VSG40AA28R	VSG60AA28R	VSG80AA28R	VSG100AA28R	VSG120AA28R
3 to 32VDC	480VAC "Z"	VSG10DA48Z	VSG25DA48Z	VSG40DA48Z	VSG60DA48Z	VSG80DA48Z	VSG100DA48Z	VSG120DA48Z
3 to 32VDC	480VAC "R"	VSG10DA48R	VSG25DA48R	VSG40DA48R	VSG60DA48R	VSG80DA48R	VSG100DA48R	VSG120DA48R
90 to 280VAC	480VAC "Z"	VSG10AA48Z	VSG25AA48Z	VSG40AA48Z	VSG60AA48Z	VSG80AA48Z	VSG100AA48Z	VSG120AA48Z
90 to 280VAC	480VAC "R"	VSG10AA48R	VSG25AA48R	VSG40AA48R	VSG60AA48R	VSG80AA48R	VSG100AA48R	VSG120AA48R

Input Specifications

Parameter-list	Specification Limits	
Input Parameter	D	A
Control Voltage Range	3 to 32VDC	90 to 280VAC
Input Current (Max.)	13/16mADC @=5V/12V	30mAAC @=220V
Must Turn-on Voltage	3VDC	90VAC
Must Turn-off Voltage	1VDC	10VAC
Reverse Voltage (Max.)	-6VDC	/

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VSG Series Single Phase Solid State Relays

Output Specifications

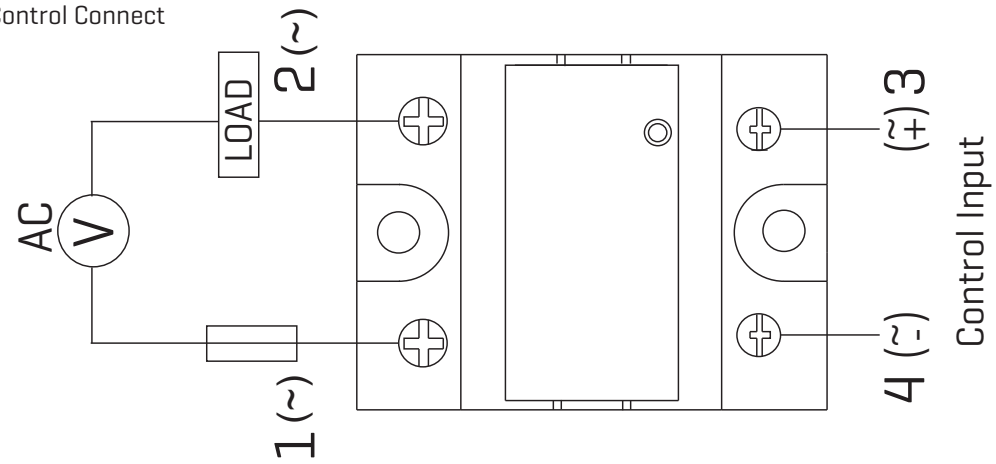
Output Parameter	Units	Specification Limits						
Model No.: VSG	Amps	10	25	40	60	80	100	120
Load Current Range	Arms	0.05 to 10	0.05 to 25	0.05 to 40	0.1 to 60	0.1 to 80	0.1 to 100	0.1 to 120
Surge Current 20mSec (Max.)	Arms	85	230	400	600	800	1000	1200
Load Voltage Range (280V)	Vrms	24 to 280						
Transient Overvoltage (280V)	Vpk	≥800						
Load Voltage Range (480V)	Vrms	48 to 480						
Transient Overvoltage (480V)	Vpk	≥1200						
Frequency Range	Hz	47 to 63						
Off State dv/dt (Min.)	V/μsec	200	200	200	500	500	500	500
Off State Leakage Current (Max.)	mArms	≤8						
On State Voltage Drop (Max.)	Vrms	1.6	1.6	1.6	1.8	1.8	1.8	1.8
Thermal Resistance, (Rthjc)	°C/W	2.5	2.5	1.3	0.65	0.5	0.3	0.3
Turn on Time (Max.) "Z"	Cycle	1/2						
Turn off Time (Max.) "D"	Cycle	1/2						
Turn on Time (Max.) "R"	mSec	1						
Turn off Time (Max.) "A"	mSec	10						

General Specifications (Ta=25°C)

Description	10A	25A	40A	60A	80A	100A	120A
Dielectric Strength, Input to Output (50/60 Hz)	4000Vrms						
Dielectric Strength, Input/Output to Base (50/60 Hz)	2500Vrms						
Minimum Insulation Resistance (@ 500 VDC)	$10^9\Omega$						
Maximum Capacitance, Input/Output	0.8pF						
Ambient Operating Temperature Range	-30 to 80°C						
Ambient Storage Temperature Range	-30 to 100°C						
Humidity per IEC60068-2-78	95%						
LED Input Status Indicator	Red						
Baseplate Material	Pure copper						
Weight	150g						

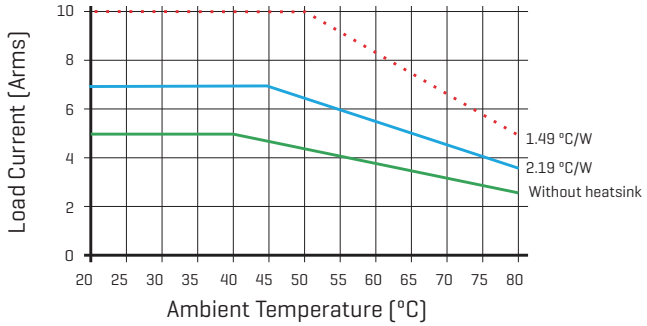
Connection Diagram

1 Phase Load Control Connect

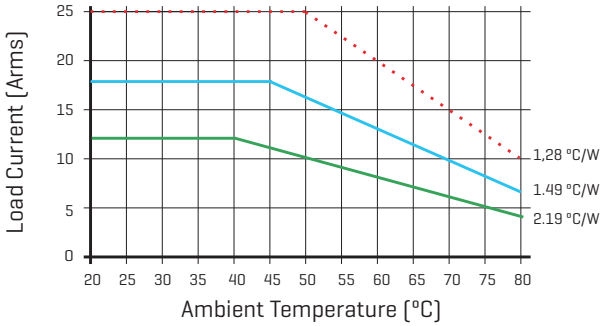


Thermal Derating Curve

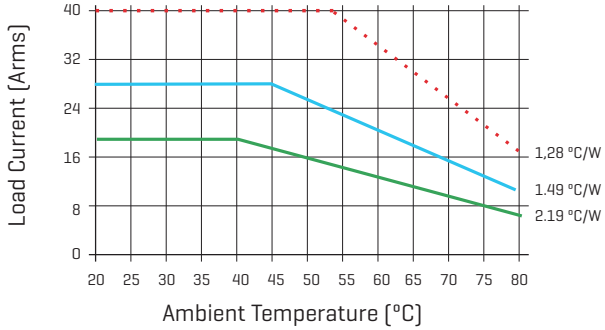
10A



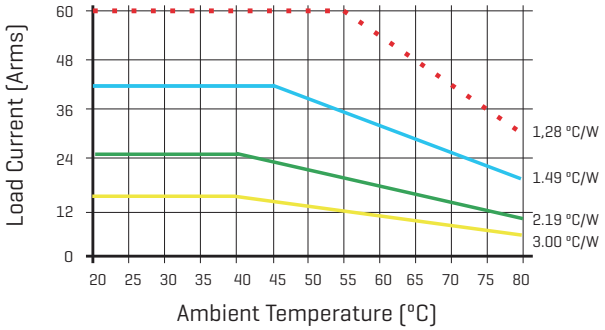
25A



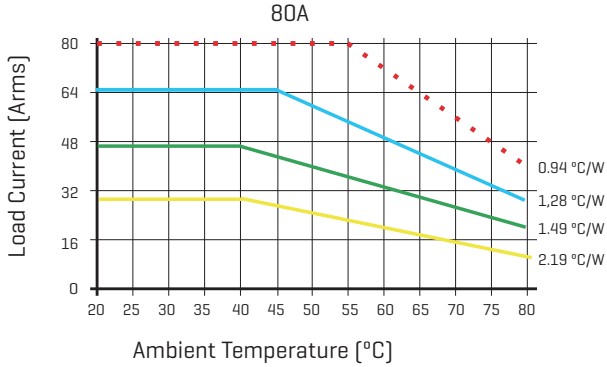
40A



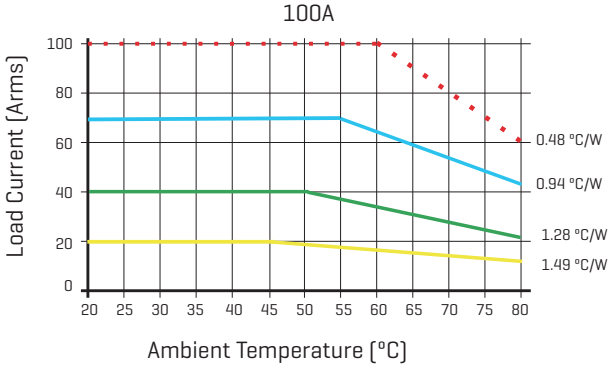
60A



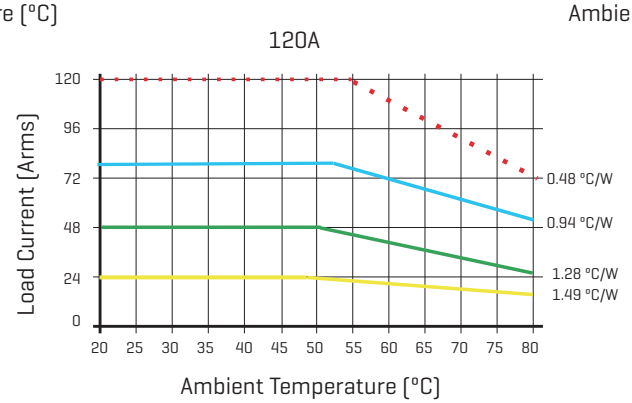
80A



100A



120A



Important Notice

Enter working conditions:

◆Pay attention to the range of working voltage and the positive and negative poles.

◆In order to ensure the normal operation of the solid state relay, the input current should be increased when the ambient temperature is low, and the input current should be reduced when the temperature is high.

◆When using the integrated circuit to directly drive the SSR, it should have sufficient load capacity and output as low as possible "0" level.

Output working conditions:

◆In order to ensure the reliable operation of the SSR, the limit parameters of the SSR must be correctly used and necessary protective measures must be taken.

◆ Peak voltage selection: inductive load; take the line voltage (effective value) indeed 1-3. Pure resistance load: take 1-2 times the line voltage (RMS).

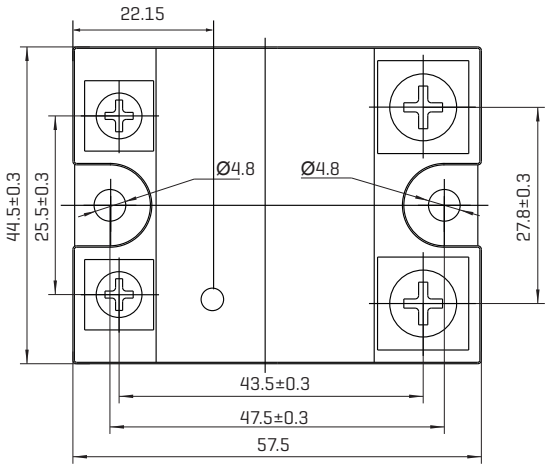
◆Selection of varistor: The nominal working voltage value of varistor is selected according to the effective 1.8-2 times of SSR working voltage.

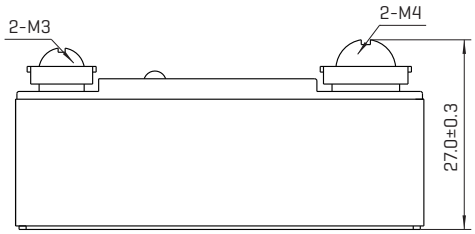
◆Products with a working current of less than 5A should be installed next to a well-ventilated heat-dissipating window, or where natural wind can blow.

◆Products with a working current above 10A must be installed with a radiator, and thermal grease can be added between the relay and the radiator for good heat dissipation. When the surface temperature of the radiator is close to 60°C, forced air cooling should be used.

◆In order to prevent the temperature rise of the solid state relay from exceeding the allowable value, the heat dissipation effect and installation position should be fully considered in the design and application. When two or more solid state relays are installed side by side, an appropriate gap should be left.

Dimensions





▪ Unit:mm