JGC-5F SOLID STATE RELAY

File No.: R2024431

File No.: CQC02001001943

Features

*2500Vrms Dielectric strength
*600 Volt blocking voltage
*Photo isolation
*Zero cross or random turn-on
*Printed circuit board mount

INPUT (TA = 25˚C)

Control voltage range	05D	4 to 6VDC
	12D	9.6 to 14.4VDC
	24D	19.2 to 28.8VDC
Must operate voltage	05D	4VDC max.
	12D	9.6VDC max.
	24D	19.2VDC max.
Must release voltage		1.0VDC min.
Max. input current		15mAdc

OUTPUT

Load voltage range (@47 to 63Hz)		75 to 264VAC
Load current range		0.1 to 3Amp
Max. surge current (10ms)		30Apk max.
Max. leakage current		1.5mA max.
Max. on-state voltage drop		1.5VAC max.
Max. turn-on time	Zero cross turn-on	10ms max.
	Random turn-on	1ms max.
Max. turn-off time		10ms max.
Transient overvoltage		600Vpk max.
Min. off-state dv/dt		100V/μs min.
Zero cross over voltage		±15V max.
Min. power factor		0.5

GENERAL

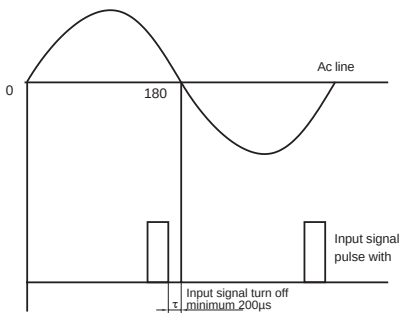
Dielectric strength (input to output)		2500VAC min, 50/60Hz 1min.
Insulation resistance		1000MΩ, min., (at 500VDC)
Max. capacitance (input to output)		5pF
Vibration durability		10 to 55 Hz Double amplitude 1.5mm
Shock durabilety		1000m/s²
Ambient temperature	Operating	-30˚C to +85˚C
	Storage	-30˚C to +100˚C
Ambient Humidity		45 to 85%
Unit weight		6g

DESCRIPTION

This SPST-NO printed circuit board mount SIP SSR provides AC output switching in a high density package.The JGC-5F's DC input is compatible with 5, 12 and 24V logic systems.The relays provide 2500Vrms opto-isolation, between input and output.Encapsulation,thermally conductive epoxy.

PRECAUTIONS

1. Soldering must be completed within 10 seconds at 260 ˚C or less or within 5 seconds at 350˚C or less.
2. The SSR case serves to dissipate heat. Install the relays so that they are adequately ventilated.If poor ventilation is unavoidable, reduce the load current by half.
3. The input circuitry does not incorporporate a circuit protecting the SSR from being damaged due to a reversed connection.Make sure that the polarity is correct when connecting the input lines.
4. When using the JGC-5F series for an AC load with a peak voltage of more than 450V,connect the load terminals of the relay to an inrush absorber(varistor).The recommended varistor voltage, 440 to 470V.
5. The JGC-5F series is not internally connected to a snubber circuit that absorb noise.Make sure that a snubber circuit is connected to the relay's load terminals.
6. When using the JGC-5F series in phase control applications,at a phase control angle close to 180 degrees the relay's input signal turn off at the trailing edge of the AC sine wave must be limited to end 200us before AC zero cross as shown in bellow Figure .This assures that the relay has time to switch off. Shorter times may cause loss of control at the following half cycle.



ORDERING INFORMATION

	JGC-5F /	05	D	0	T

Type

Input voltage **05**: 4 to 6VDC **12**: 9.6 to 14.4VDC **24**: 19.2 to 28.8VDC

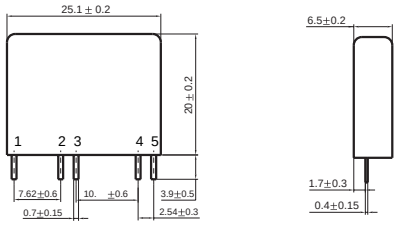
Input Form D: DC

Zero Cross Function **0**: Zero cross turn-on **1**: Randm turn-on

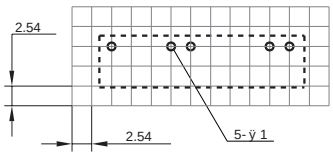
Termination **T**: Same as TOSHIBA TSA3100J

OUTLINE DIMENSIONS, WIRING DIAGRAM AND PC BOARD LAYOUT

Outline Dimensions

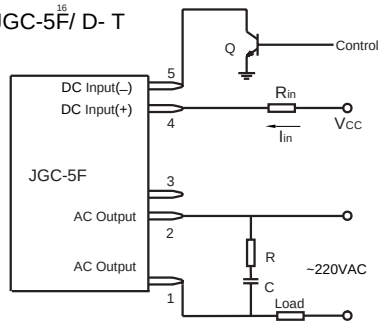


PCB layout



Wiring Diagram

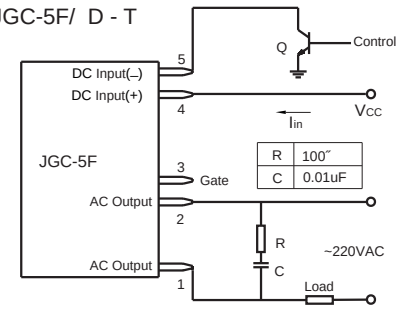
JGC-5F/ D- T



$R_{in} = \frac{V_{CC}\text{-}VF\text{-}VsatQ}{I_{in}}$

Iin	10mA
VF	1.3V
VsatQ	0.3V
R	100Ω
C	0.01uF

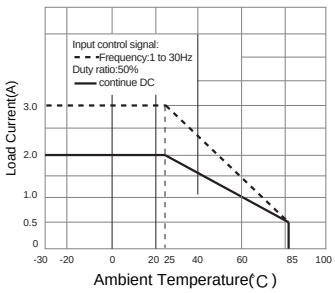
JGC-5F/ D - T



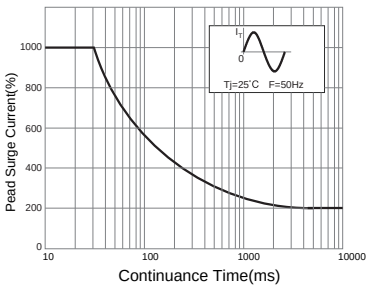
R	100˝
C	0.01uF

CHARACTERISTICS CURVE

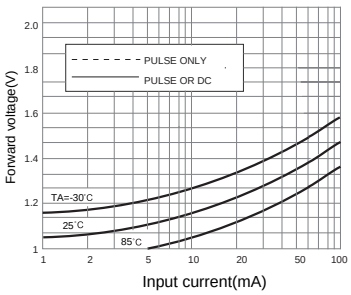
MAXIMUM LOAD CURRENT VS.AMBIENT TEMPERATURE



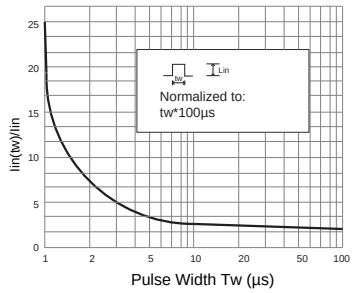
MAXIMUM PERMISSIBLE NON-REPETITIVE PEAK SURGE CURRENT VS. ENERGIZING CONTINUANCE TIME



FORWARD VOLTAGE VS.INPUT CURRENT



PULSE INPUT CURRENT VS. PULSE WIDTH



ENERGIZING VS. AMBIENT TEMPERATURE