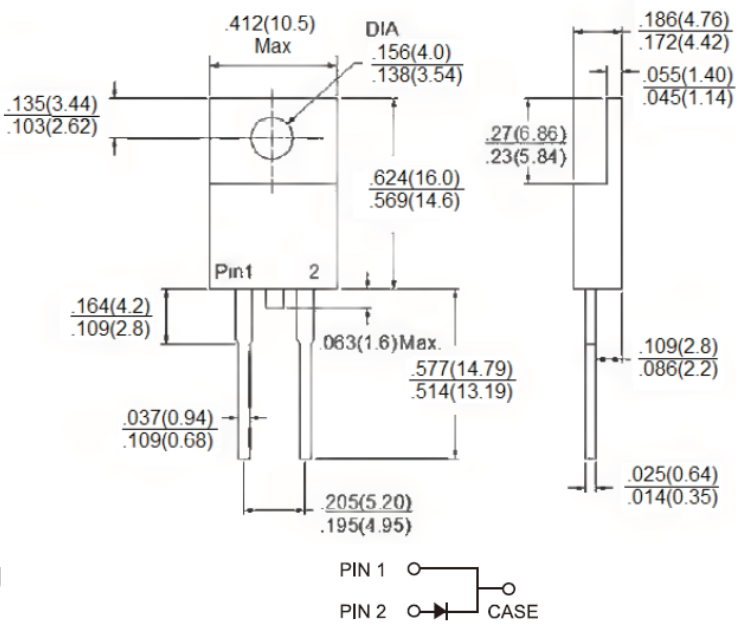
TAIWAN SEMICONDUCTOR

SRA1020 - SRA10150

10.0AMPS. Schottky Barrier Rectifiers

TO-220AC

RoHS COMPLIANCE



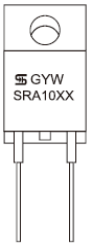
Features

- ✧ Low power loss, high efficiency
- ✧ High current capability, low VF
- ✧ High reliabbility
- ✧ High surge current capability
- ✧ Epitaxial construction
- ✧ Guard-ring for transient protection
- ✧ For use in low voltage, high frequency inventor, free wheeling, and polarity protection application
- ✧ Green compound with suffix "G" on packing code & prefix "G" on datecode

Mechanical Data

- ✧ Case: TO-220AC molded plastic
- ✧ Epoxy: UL 94V-0 rate flame retardant
- ✧ Terminals: Pure tin plated, lead free, solderable per MIL-STD-202, Method 208 guaranteed
- ✧ Polarity: As marked
- ✧ High temperature soldering guaranteed: 260℃/10 seconds/.25", (6.35mm) from case
- ✧ Weight: 1.87 gram

Dimensions in inches and (millimeters)



Marking Diagram

SRA10XX	= Specific Device Code
G	= Green Compound
Y	= Year
WW	= Work Week

Maximum Ratings and Electrical Characteristics

Rating at 25 ℃ ambient temperature unless otherwise specified.
Single phase, half wave, 60 Hz, resistive or inductive load.
For capacitive load, derate current by 20%

Type Number	Symbol	SRA 1020	SRA 1030	SRA 1040	SRA 1050	SRA 1060	SRA 1090	SRA 10100	SRA 10150	Unit
Maximum Repetitive Peak Reverse Voltage	V_{RRM}	20	30	40	50	60	90	100	150	V
Maximum RMS Voltage	V_{RMS}	14	21	28	35	42	63	70	105	V
Maximum DC Blocking Voltage	V_{DC}	20	30	40	50	60	90	100	150	V
Maximum Average Forward Rectified Current	$I_{F(AV)}$	10								A
Peak Forward Surge Current, 8.3 ms Single Half Sine-wave Superimposed on Rated Load (JEDEC method)	I_{FSM}	170								A
Maximum Instantaneous Forward Voltage (Note 1) @ 10A	V_F	0.55			0.70		0.85		0.95	V
Maximum Reverse Current @ Rated VR T_A=25 ℃	I_R	0.5					0.1			mA
T_A=100 ℃		15			10		-			
T_A=125℃		-					5			
Typical Junction Capacitance (Note 2)	Cj	400								pF
Typical Thermal Resistance	$R_{\theta jC}$	2								°C/W
Operating Temperature Range	T_J	- 65 to + 125			- 65 to + 150					°C
Storage Temperature Range	T_{STG}	- 65 to + 150								°C

Note 1 : Pulse Test : 300 usec Pulse Width, 1% Duty Cycle

Note 2 : Measure at 1MHz and Applied Reverse Voltage of 4.0V D.C.

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RATINGS AND CHARACTERISTIC CURVES (SRA1020 THRU SRA10150)

FIG.1 FORWARD CURRENT DERATING CURVE

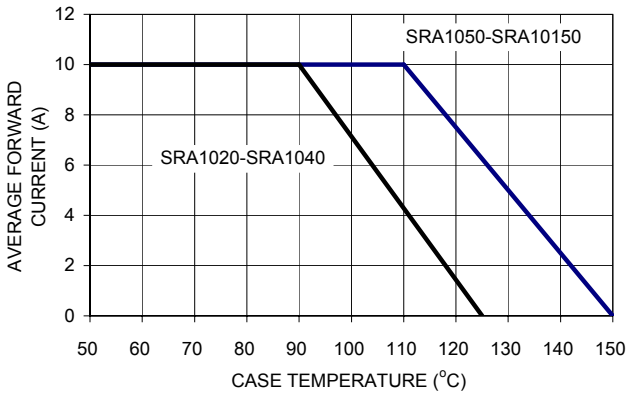


FIG. 2 MAXIMUM NON-REPETITIVE FORWARD SURGE CURRENT

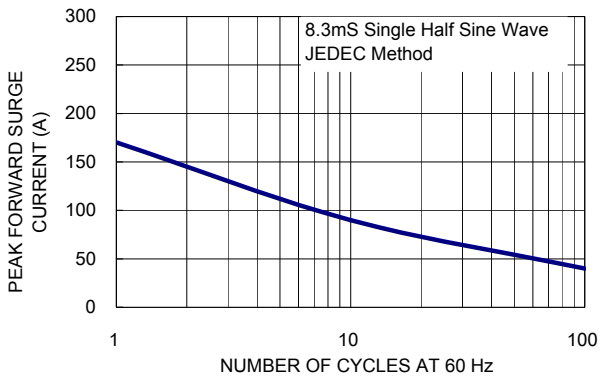


FIG. 3 TYPICAL FORWARD CHARACTERISRICS

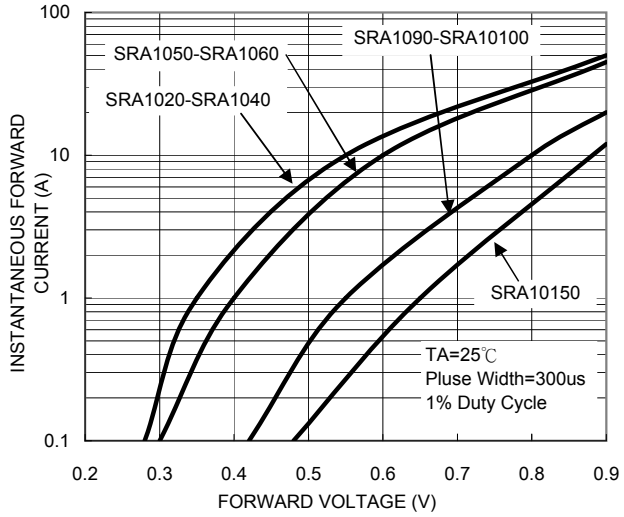


FIG. 4 TYPICAL REVERSE CHARACTERISTICS

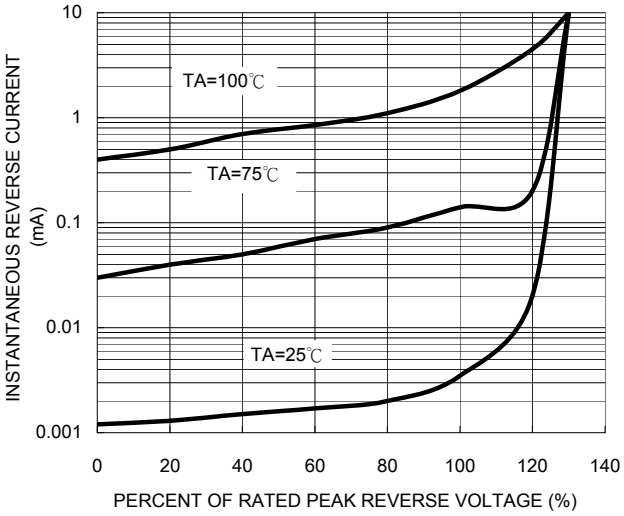


FIG. 5 TYPICAL JUNCTION CAPACITANCE

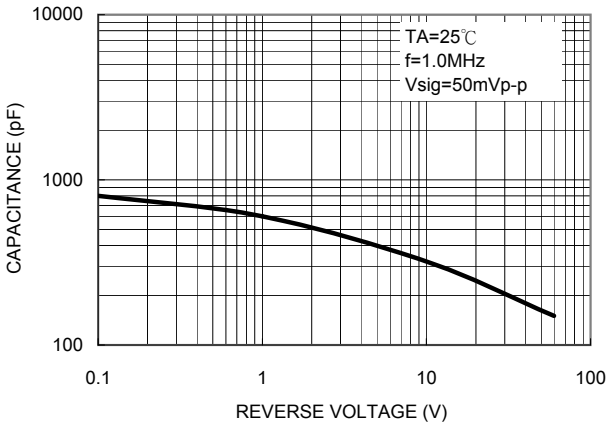
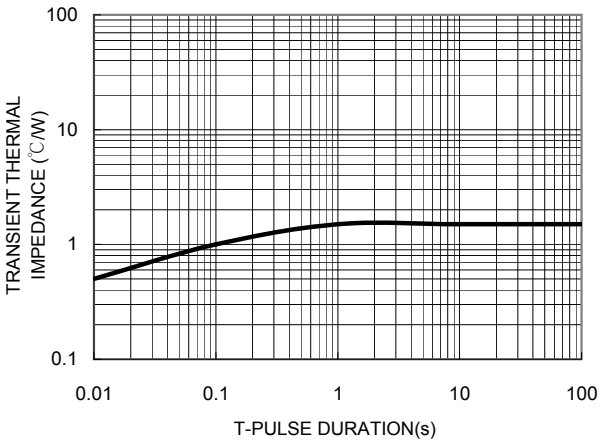


FIG. 6 TYPICAL TRANSIENT THERMAL IMPEDANCE



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