TAIWAN SEMICONDUCTOR

RoHS COMPLIANCE

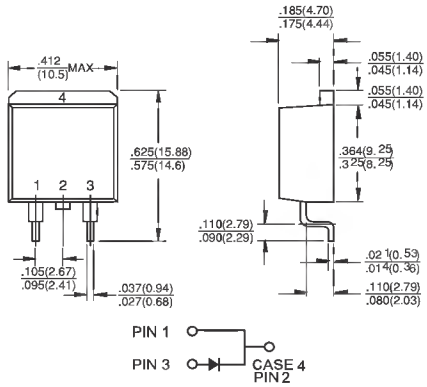
SRAS2020 - SRAS20150

20.0 AMPS. Surface Mount Schottky Barrier Rectifiers

D²PAK

Features

- For surface mounted application
- Ideal for automated pick & place
- Low power loss, high efficiency
- High current capability, low VF
- High reliability
- Epitaxial construction
- Guard-ring for transient protection
- Green compound with suffix "G" on packing code & prefix "G" on datecode.

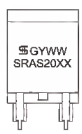


Dimensions in inches and (millimeters)

Mechanical Data

- Cases: D²PAK molded plastic
- Epoxy: UL 94V-0 rate flame retardant
- Terminals: Pure tin plated, Lead solderable per MIL-STD-202, Method 208 guaranteed
- Polarity: As marked
- High temperature soldering guaranteed: 260°C/10 seconds at terminals
- Weight: 1.70 grams

Marking Diagram



SRAS20XX = Specific Device Code
G = Green Compound
Y = Year
WW = Work Week

Maximum Ratings and Electrical Characteristics

Rating at 25 °C 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	SRAS 2020	SRAS 2030	SRAS 2040	SRAS 2050	SRAS 2060	SRAS 2090	SRAS 20100	SRAS 20150	Units
Maximum Recurrent 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 See Fig. 1	$I_{(AV)}$	20								A
Peak Forward Surge Current, 8.3 ms Single Half Sine-wave Superimposed on Rated Load (JEDEC method)	I_{FSM}	330								A
Maximum Instantaneous Forward Voltage @ 20A @ 40A	V_F	0.57 0.73			0.70 0.85		0.92 1.02		1.02 1.12	V
Maximum D.C. Reverse Current @ Tj=25 °C at Rated DC Blocking Voltage @ Tj=125 °C	I_R	0.5 15			10		0.1 5.0			mA mA
Typical Junction Capacitance (Note 2)	pF	1400								pF
Typical Thermal Resistance (Note 1)	$R_{\theta JC}$	1.5								°C/W
Operating Junction Temperature Range	T_J	-65 to +150								°C
Storage Temperature Range	T_{STG}	-65 to +150								°C

Notes: 1. Mounted on Heatsink Size of 2" x 3" x 0.25" Al-Plate
2. Measured at 1MHz and Applied Reverse Voltage of 4.0V D.C.

RATINGS AND CHARACTERISTIC CURVES (SRAS2020 THRU SRAS20150)

FIG.1- FORWARD CURRENT DERATING CURVE

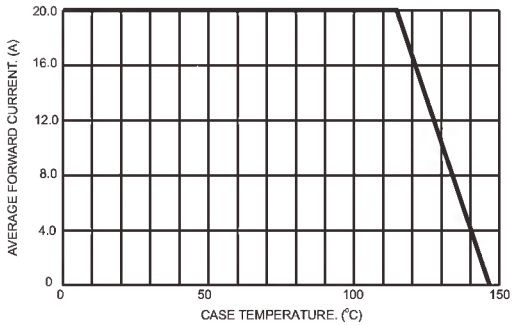


FIG.2- MAXIMUM NON-REPETITIVE FORWARD SURGE CURRENT PER BRIDGE ELEMENT

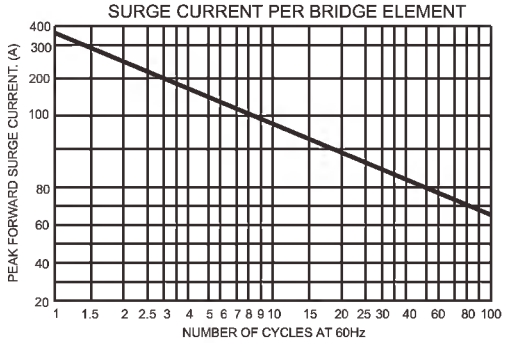


FIG.3- TYPICAL FORWARD CHARACTERISTICS PER LEG

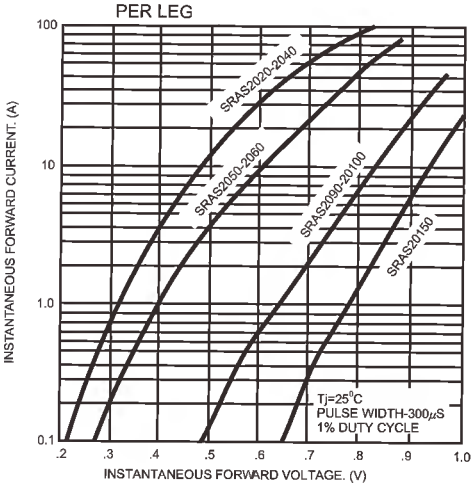


FIG.4- TYPICAL REVERSE CHARACTERISTICS PER LEG

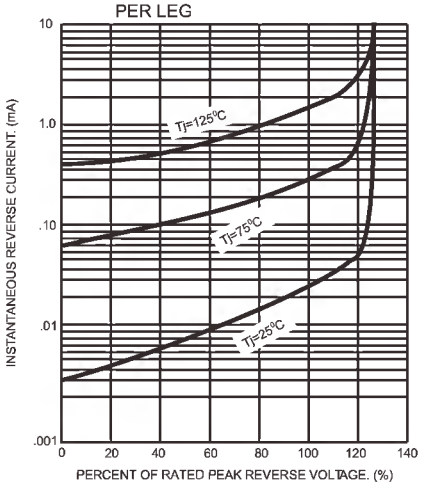


FIG.5- TYPICAL JUNCTION CAPACITANCE PER LEG

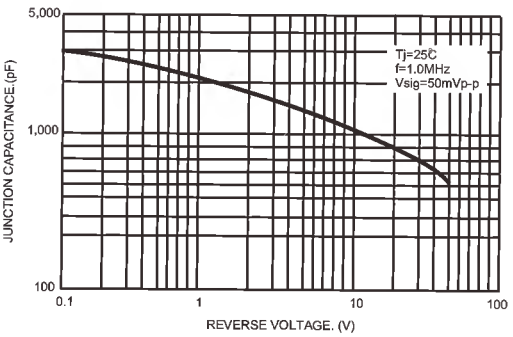


FIG.6- TYPICAL TRANSIENT THERMAL IMPEDANCE PER LEG