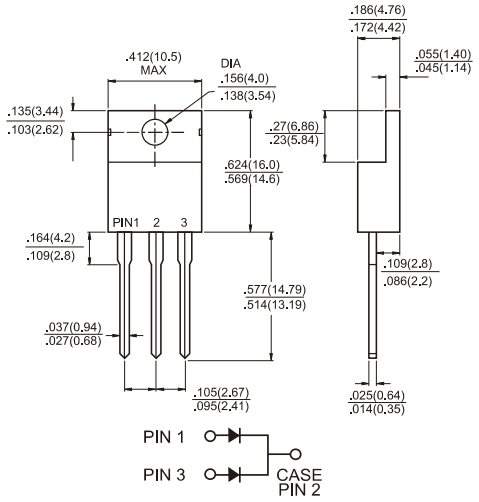
TAIWAN SEMICONDUCTOR

SR2020 - SR20150

20.0 AMPS. Schottky Barrier Rectifiers

RoHS COMPLIANCE

TO-220AB



Dimensions in inches and (millimeters)

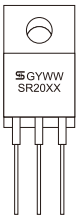
Features

- ✧ UL Recognized File # E-326243
- ✧ Low power loss, high efficiency.
- ✧ High current capability, Low VF.
- ✧ High reliability
- ✧ 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

- ✧ Cases: TO-220AB 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°C/10 seconds .25”,(6.35mm) from case.
- ✧ Mounting torque: 5 in – lbs. max.
- ✧ Weight: 1.82 grams

Marking Diagram



SR20XX = 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	SR 2020	SR 2030	SR 2040	SR 2050	SR 2060	SR 2090	SR 20100	SR 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	$I_{F(AV)}$	20								A
Peak Forward Surge Current, 8.3 ms Single Half Sine-wave Superimposed on Rated Load (JEDEC method)	I_{FSM}	200								A
Maximum Instantaneous Forward Voltage @10A	V_F	0.55			0.70		0.90	1.00		V
Maximum D.C. Reverse @ T_A=25 °C	I_R	0.5					0.1			mA
Current at Rated DC @ T_A=100 °C		15			10		–			mA
Blocking Voltage (Note1) @ T_A=125 °C		–					5.0			mA
Typical Junction Capacitance (Note 2)	Cj	430			360					pF
Typical Thermal Resistance (Note 3)	$R_{\theta JC}$	1.0								°C/W
Operating Junction Temperature Range	T_J	-65 to +125			-65 to +150					°C
Storage Temperature Range	T_{STG}	-65 to +150								°C

Notes: 1. Pulse Test with PW=300 usec, 1% Duty Cycle
2. Measured at 1 MHz and Applied Reverse Voltage of 4.0V D.C.
3. Mount on Heatsink Size of (4”x6”x0.25”) Al-Plate

Version: E10

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RATINGS AND CHARACTERISTIC CURVES (SR2020 THRU SR20150)

FIG.1- FORWARD CURRENT DERATING CURVE

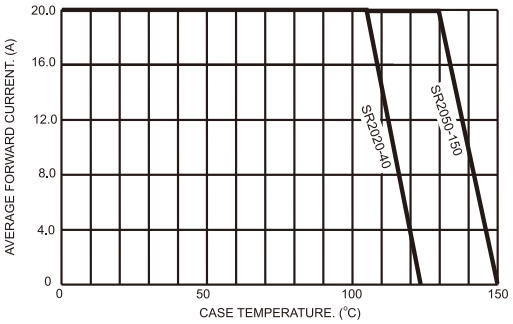


FIG.2- MAXIMUM NON-REPETITIVE PEAK FORWARD SURGE CURRENT PER LEG

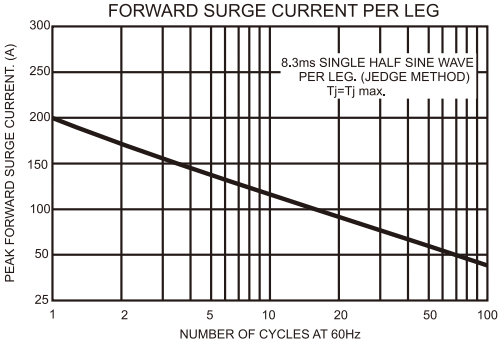


FIG.3- TYPICAL FORWARD CHARACTERISTICS PER LEG

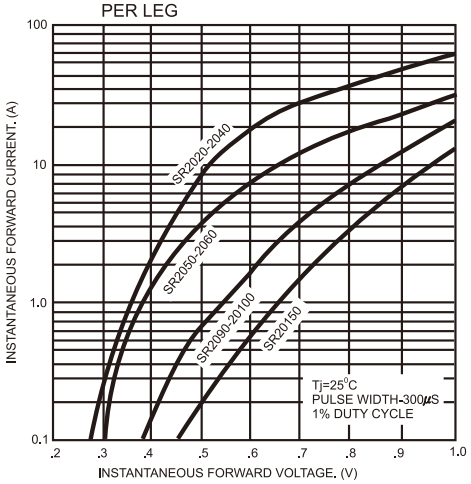


FIG.4- TYPICAL REVERSE CHARACTERISTICS PER LEG

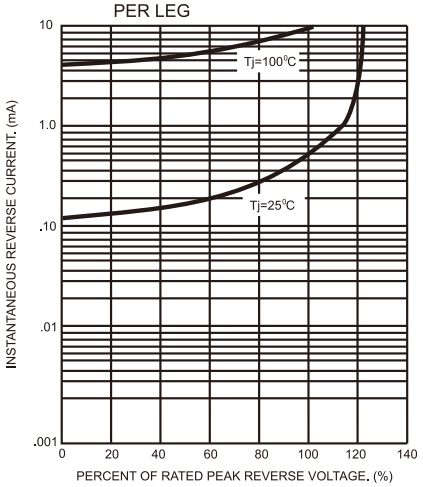


FIG.5- TYPICAL JUNCTION CAPACITANCE PER LEG

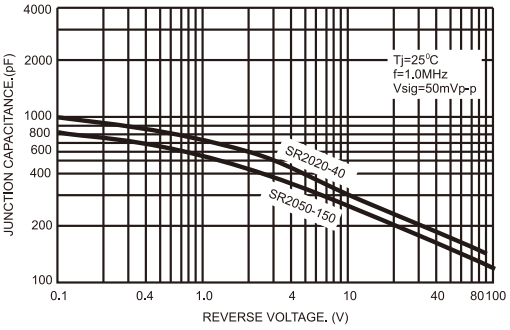
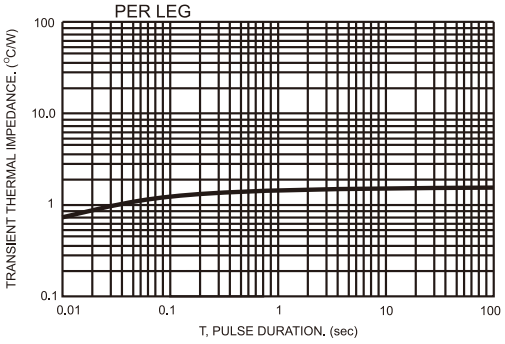


FIG.6- TYPICAL TRANSIENT THERMAL IMPEDANCE PER LEG



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SR20100 SR20150 SR2020 SR2030 SR2040 SR2050 SR2060 SR2090