TAIWAN SEMICONDUCTOR

The Smartest Choice

SR4020PT - SR40100PT

40.0AMPS. Schottky Barrier Rectifiers

TO-3P/TO-247AD



Pb-Free

RoHS COMPLIANT

Features

- ✧ UL Recognized File # E-326243
- ✧ Dual rectifier construction, positive center-tap
- ✧ Plastic package has Underwriters Laboratory Flammability Classifications 94V-0
- ✧ Metal silicon junction, majority carrier conduction
- ✧ Low power loss, high efficiency
- ✧ High current capability, low VF
- ✧ High surge reliabbility
- ✧ Epitaxial construction
- ✧ For use in low voltage, high frequency inverters, free wheeling, and polarity protection applications
- ✧ High temperature soldering guaranteed: 260°C/10 seconds, 0.17"(4.3mm) lead lengths at 5 lbs., (2.3kg) tension
- ✧ Green compound with suffix "G" on packing code & prefix "G" on datecode

Mechanical Data

- ✧ Cases: JEDEC TO-3P/TO-247AD molded plastic
- ✧ Terminals: Pure tin plated, lead free, solderable per MIL-STD-750, Method 2026
- ✧ Polarity: As marked
- ✧ Mounting position: Any
- ✧ Weight: 6.14 grams

Ordering Information (example)

Part No.	Package	Packing	Packing code	Green Compound Packing code
SR4020PT	TO-3P	30 / TUBE	C0	C0G

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	SR 4020 PT	SR 4030 PT	SR 4040 PT	SR 4050 PT	SR 4060 PT	SR 4090 PT	SR 40100 PT	Units
Maximum Recurrent Peak Reverse Voltage	V_{RRM}	20	30	40	50	60	90	100	V
Maximum RMS Voltage	V_{RMS}	14	21	28	35	42	63	70	V
Maximum DC Blocking Voltage	V_{DC}	20	30	40	50	60	90	100	V
Maximum Average Forward Rectified Current	$I_{F(AV)}$	40							A
Peak Forward Surge Current, 8.3 ms Single Half Sine-wave Superimposed on Rated Load (JEDEC method)	I_{FSM}	400							A
Maximum Instantaneous Forward Voltage (Note 1) @20 A	V_F	0.55			0.70		0.90		V
Maximum DC Reverse Current @ T_A=25°C	I_R	1.0					0.5		mA
at Rated DC Blocking Voltage @ T_A=100°C		30			20		-		mA
@ T_A=125°C		-					10		mA
Typical Junction Capacitance (Note 2)	Cj	1100			600		550		pF
Typical Thermal Resistance Per Leg	$R_{\theta JC}$	1.2							°C/W
Operating Junction Temperature Range	T_J	- 65 to + 125			- 65 to + 150				°C
Storage Temperature Range	T_{STG}	- 65 to + 150							°C

Note 1 : 300 us Pulse Width, 2% Duty Cycle

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

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RATINGS AND CHARACTERISTIC CURVES (SR4020PT THRU SR40100PT)

FIG. 1- FORWARD CURRENT DERATING CURVE

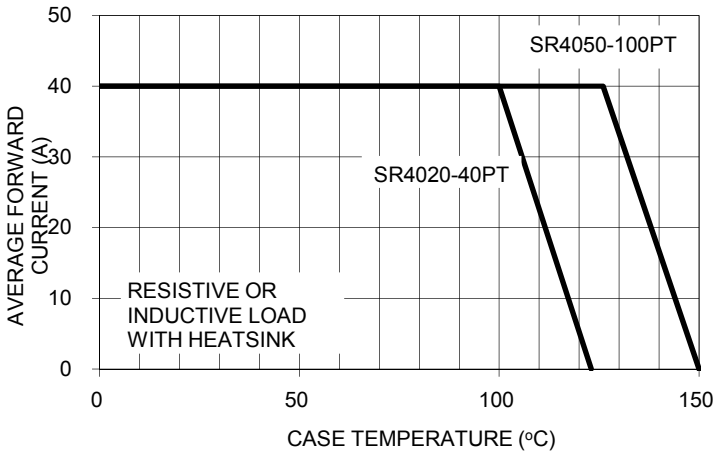


FIG. 2- MAXIMUM NON-REPETITIVE PEAK FORWARD SURGE CURRENT PER LEG

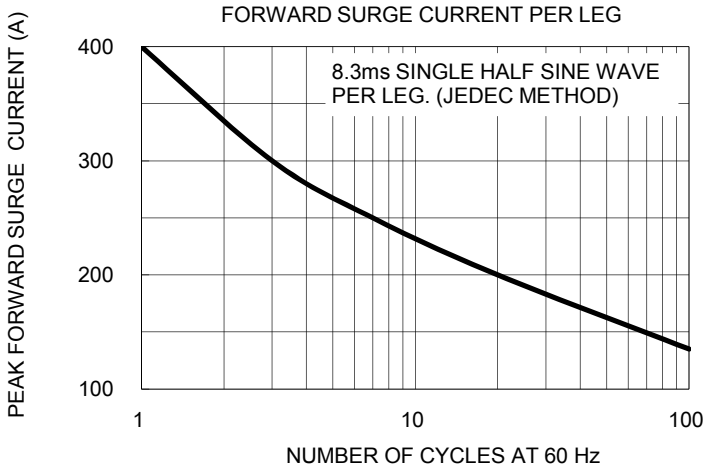


FIG. 3- TYPICAL FORWARD CHARACTERISTICS PER LEG

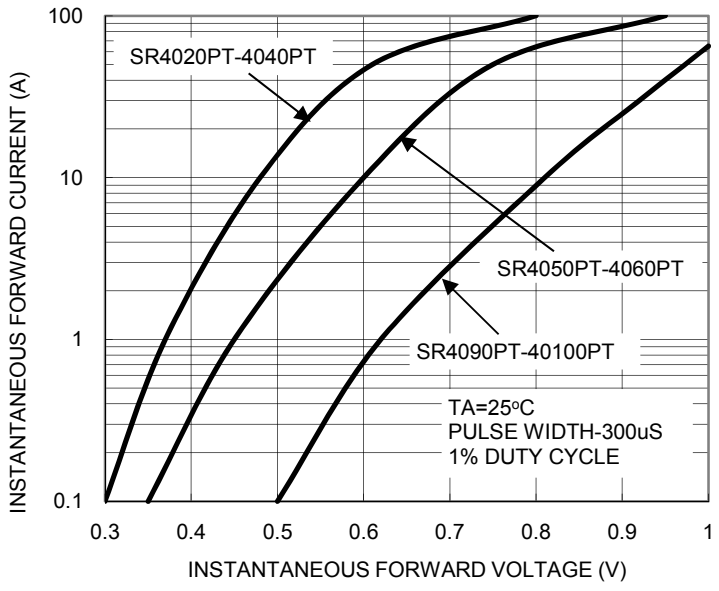


FIG. 4- TYPICAL REVERSE CHARACTERISTICS PER LEG

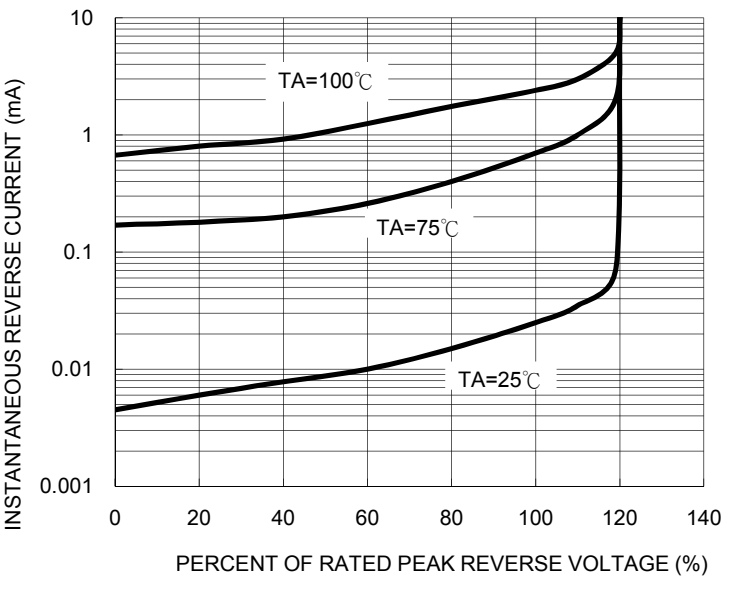


FIG. 5- TYPICAL JUNCTION CAPACITANCE PER LEG

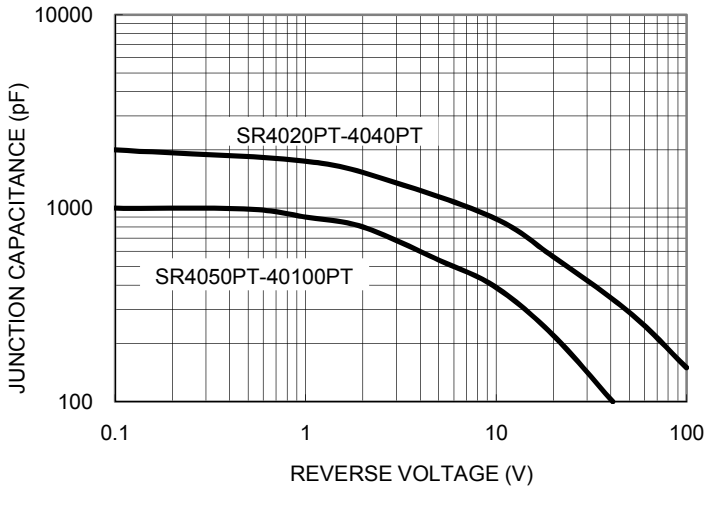
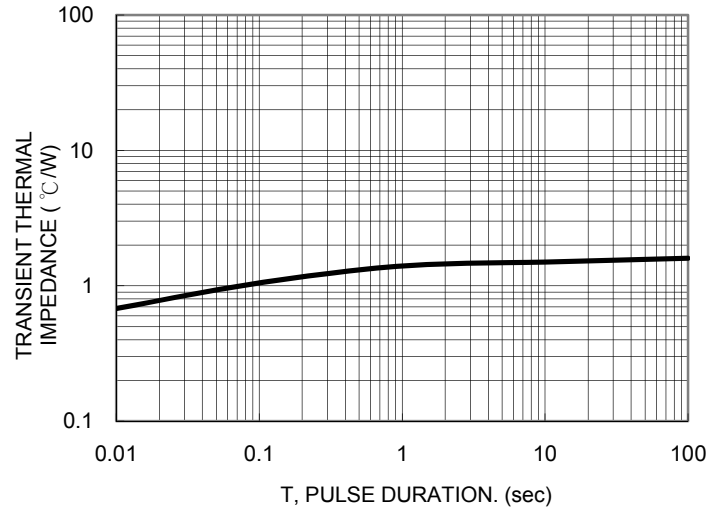


FIG. 6- TYPICAL TRANSIENT THERMAL IMPEDANCE PER LEG



Version:E12

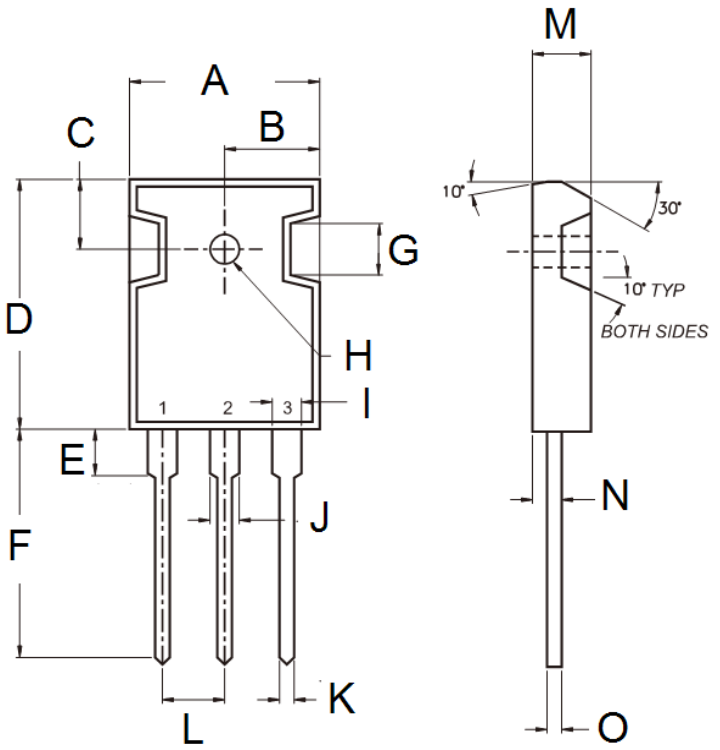
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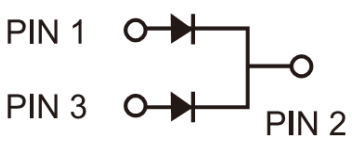
Ordering information

Part No.	Package	BULK Packing	Packing code	Green Compound Packing code
SR40xxPT	TO-3P	30 / TUBE	C0	C0G

Note: "xx" is Device Code from "20" thru "100".

Dimensions





DIM.	Unit(mm)		Unit(inch)	
	Min	Max	Min	Max
A	15.90	16.40	0.626	0.646
B	7.90	8.20	0.311	0.323
C	5.70	6.20	0.224	0.244
D	20.80	21.30	0.819	0.839
E	3.50	4.10	0.138	0.161
F	19.70	20.20	0.776	0.795
G	-	4.30	-	0.169
H	2.90	3.40	0.114	0.134
I	1.93	2.18	0.076	0.086
J	2.97	3.22	0.117	0.127
K	1.12	1.22	0.044	0.048
L	5.20	5.70	0.205	0.224
M	4.90	5.16	0.193	0.203
N	2.70	3.00	0.106	0.118
O	0.51	0.76	0.020	0.030

Marking Diagram



P/N = Specific Device Code
G = Green Compound
YWW = Date Code