

Features

- Zero Reverse Recovery Current
- Positive Temperature Coefficient
- High-Speed Switching
- Epoxy Meets UL 94 V-0 Flammability Rating
- Halogen Free. "Green" Device (Note 1)
- Lead Free Finish/RoHS Compliant(Note 1) ("P" Suffix designates RoHS Compliant. See ordering information)

Benefits

- Temperature-Independent Performance
- Low Switching Loss
- Low Heat Dissipation Requirements

Applications

- Switching Power Supply
- Power Factor Correction
- Motor Drive, Traction
- Charging Pile

Maximum Ratings

- Operating Junction Temperature Range: -55°C to +175°C
- Storage Temperature Range: -55°C to +175°C
- Thermal Resistance: 0.69°C/W Junction to Case

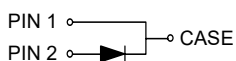
MCC Part Number	Device Marking
SIC20120PTP	SIC20120PTP

Peak Repetitive Reverse Voltage	V_{RRM}	1200V	
Surge Peak Reverse Voltage	V_{RSM}	1200V	
DC Reverse Voltage	V_{DC}	1200V	
Average Forward Current	I_F	20A	$T_J=140^{\circ}C$
Peak Forward Surge Current	I_{FSM}	130A	$T_C=25^{\circ}C, t_p=10ms,$ Half Sine Pulse
Power Dissipation	P_D	217W	$T_C=25^{\circ}C$

Note:1. Halogen free "Green" products are defined as those which contain <900ppm bromine, <900ppm chlorine (<1500ppm total Br + Cl) and <1000ppm antimony compounds.

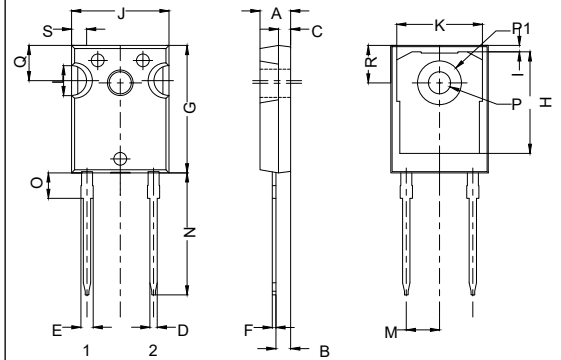
2. High Temperature Solder Exemptions Applied, see EU Directive Annex 7a.

Internal Structure:



**20Amp
Silicon Carbide
Schottky Barrier
Rectifier
1200 Volts**

TO-247-2L



DIM	INCHES		MM		NOTE
	MIN	MAX	MIN	MAX	
A	0.190	0.205	4.83	5.21	
B	0.090	0.100	2.29	2.55	
C	0.059	0.098	1.50	2.49	
D	0.044	0.052	1.12	1.33	
E	0.075	0.094	1.91	2.39	
F	0.022	0.027	0.55	0.69	
G	0.819	0.831	20.80	21.10	
H	0.640	0.695	16.25	17.65	
I	0.020	0.053	0.51	1.35	
J	0.620	0.635	15.75	16.13	
K	0.530	0.557	13.46	14.16	
L	0.170	0.216	4.32	5.49	
M	0.214		5.44		TYP
N	0.780	0.800	19.81	20.32	
O	0.161	0.173	4.10	4.40	
P	0.140	0.144	3.56	3.65	Φ
P1	0.283		7.19		Φ
Q	0.212	0.244	5.39	6.20	
R	0.238	0.248	6.04	6.30	
S	0.085	0.108	2.16	2.75	

Electrical Characteristics @ 25°C (Unless Otherwise Specified)

Parameter	Symbol	Conditions	Typ.	Max.	Units
Forward Voltage	V_F	$I_F=20A, T_J=25^{\circ}C$	1.5	1.8	V
		$I_F=20A, T_J=175^{\circ}C$	2.1		V
Reverse Leakage Current	I_R	$V_R=1200V, T_J=25^{\circ}C$	6.9	60	μA
		$V_R=1200V, T_J=175^{\circ}C$	598		μA
Total Capacitive Charge	Q_C	$V_R=800V$	126		nC
Total capacitance	C	$V_R=0V, f=1MHz$	1190		pF
		$V_R=400V, f=1MHz$	128		pF
		$V_R=800V, f=1MHz$	122		pF
Capacitance Stored Energy	E_C	$V_R=800V$	39.2		μJ

Curve Characteristics

Fig. 1 - Typical Forward Characteristics

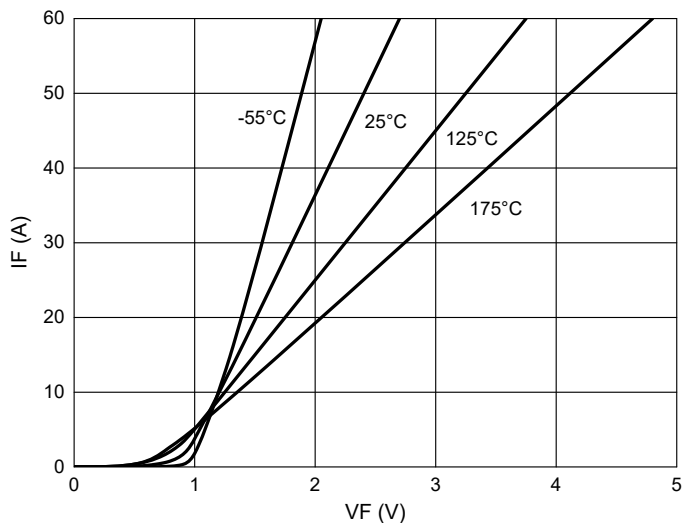


Fig. 2 - Typical Reverse Leakage Characteristics

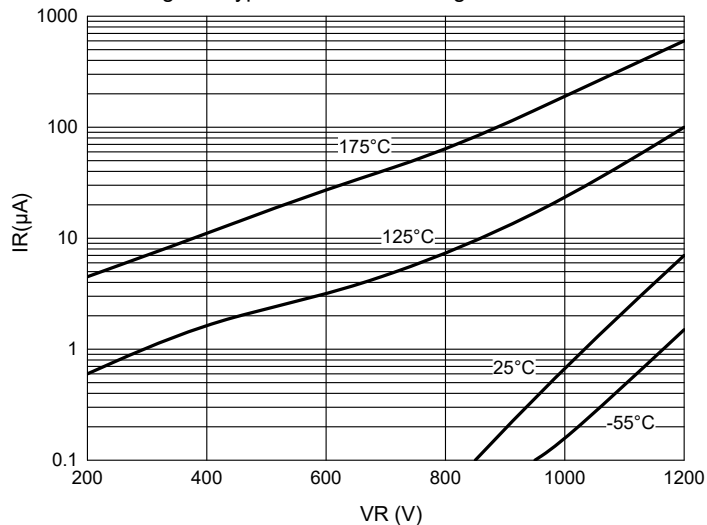


Fig. 3 - Capacitance vs Reverse Voltage

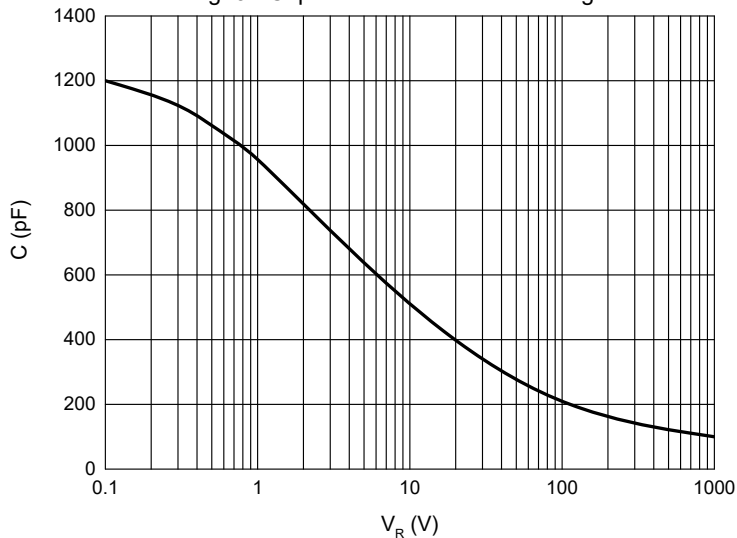


Fig. 4 - Typical Power Derating

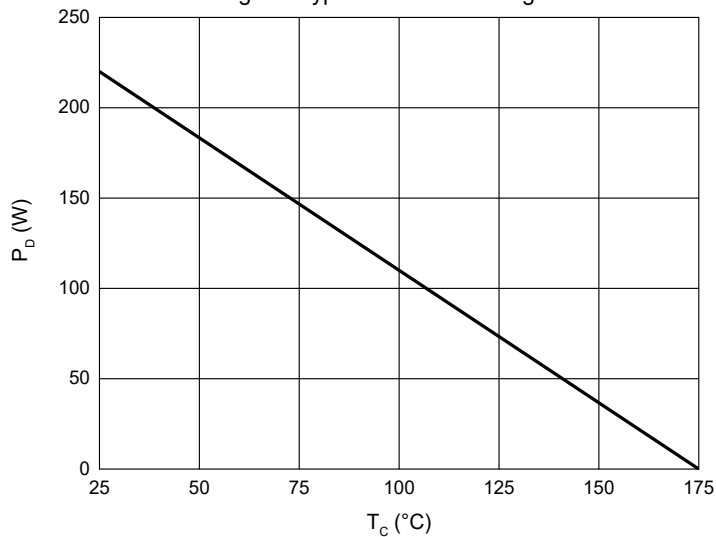


Fig. 5 - Capacitive Charge vs Reverse Voltage

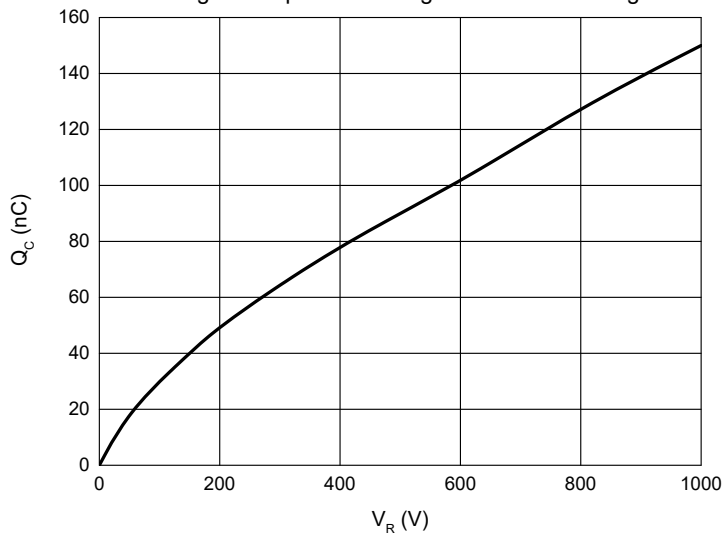
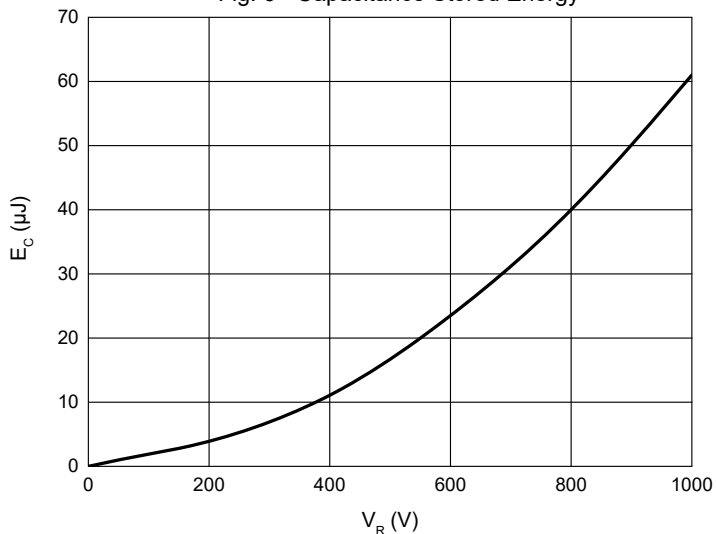


Fig. 6 - Capacitance Stored Energy



Ordering Information

Device	Packing
SIC20120PTP-BP	Tube:30pcs/Tube, 360pcs/Box, 1.8K/Ctn;

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