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: 0.45°C/W Junction to Case

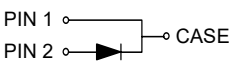
MCC Part Number	Device Marking
SICB20120Y	SICB20120Y

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=157°C
Peak Forward Surge Current	I_{FSM}	160A	T_C=25°C, t_p=10ms, Half Sine Pulse
Power Dissipation	P_D	333W	T_C=25°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.

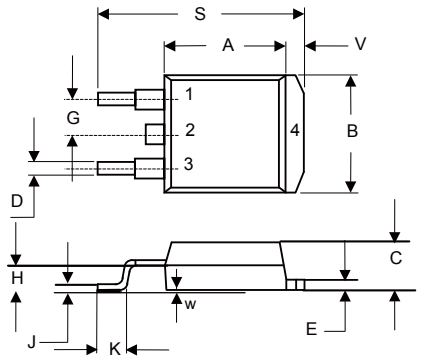
2. High Temperature Solder Exemptions Applied, see EU Directive Annex 7a.

Internal Structure:



20Amp Silicon Carbide Schottky Barrier Rectifier 1200 Volts

D²-PAK



DIMENSIONS					
DIM	INCHES		MM		NOTE
	MIN	MAX	MIN	MAX	
A	0.331	0.370	8.40	9.40	
B	0.378	0.417	9.60	10.60	
C	0.165	0.189	4.20	4.80	
D	0.027	0.037	0.68	0.94	
E	0.045	0.055	1.14	1.40	
G	0.010		2.54		TYP.
H	0.096	0.134	2.43	3.40	
J	0.011	0.025	0.28	0.64	
K	0.071	0.131	1.80	3.32	
S	0.575	0.625	14.60	15.87	
V	0.042	0.058	1.07	1.47	
W	0.000	0.010	0.00	0.25	

Electrical Characteristics @ 25°C (Unless Otherwise Specified)

Parameter	Symbol	Conditions	Typ.	Max.	Units
Forward Voltage	V_F	I_F=20A, T_J=25°C	1.34	1.55	V
		I_F=20A, T_J=175°C	1.86	2.70	V
Reverse Leakage Current	I_R	V_R=1200V, T_J=25°C	0.5	25	μA
		V_R=1200V, T_J=175°C	5		μA
Total Capacitive Charge	Q_C	V_R=800V	114		nC
Total capacitance	C	V_R=0V, f=1MHz	1552		pF
		V_R=400V, f=1MHz	107		pF
		V_R=800V, f=1MHz	79		pF
Capacitance Stored Energy	E_C	V_R=800V	29.3		μJ

Curve Characteristics

Fig. 1 - Typical Forward Characteristics

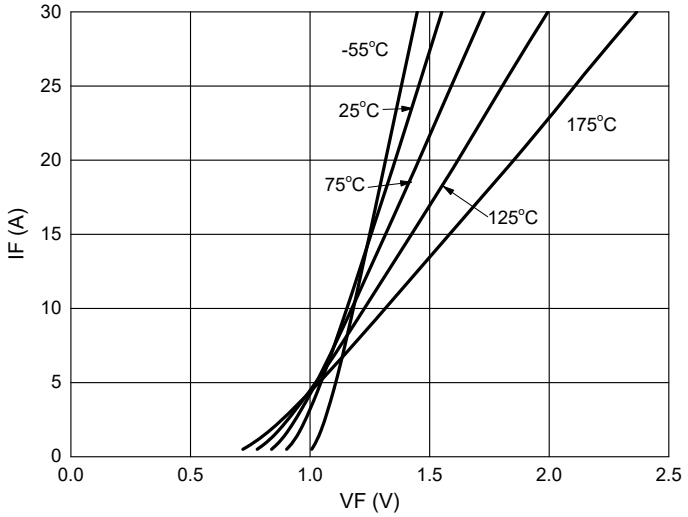


Fig. 2 - Typical Reverse Leakage Characteristics

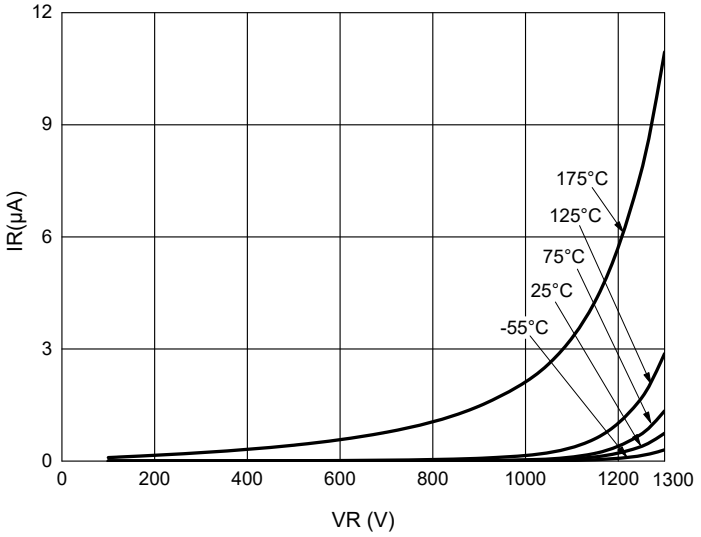


Fig. 3 - Capacitance vs Reverse Voltage

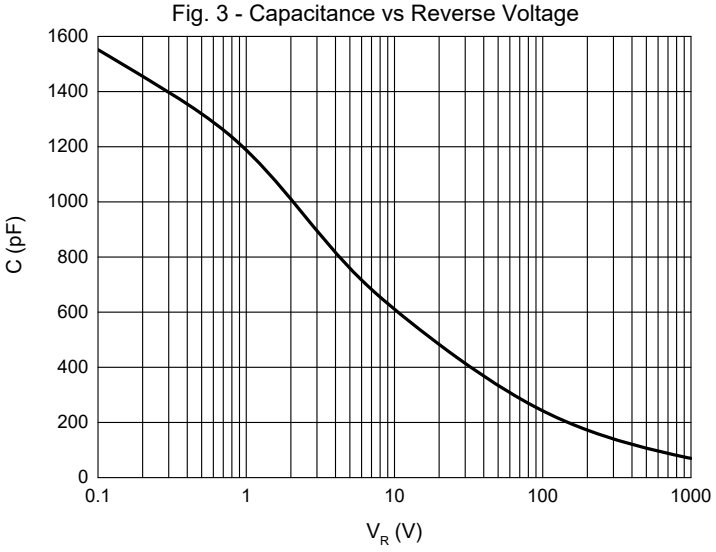


Fig. 4 - Typical Power Derating

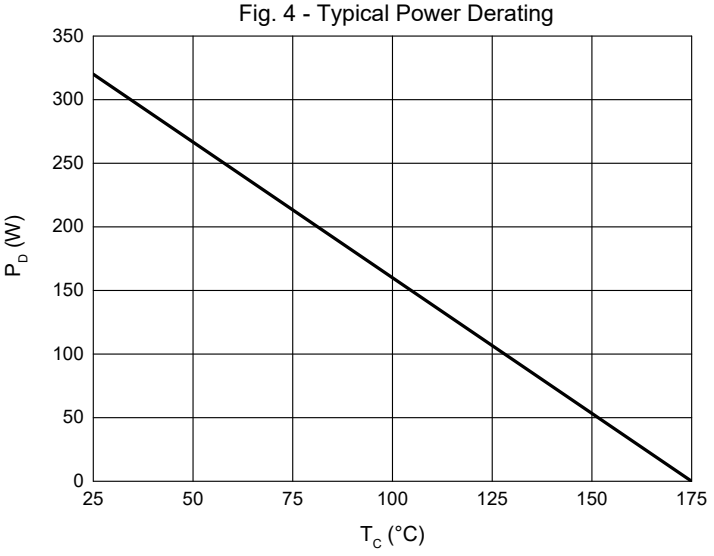


Fig. 5 - Capacitive Charge vs Reverse Voltage

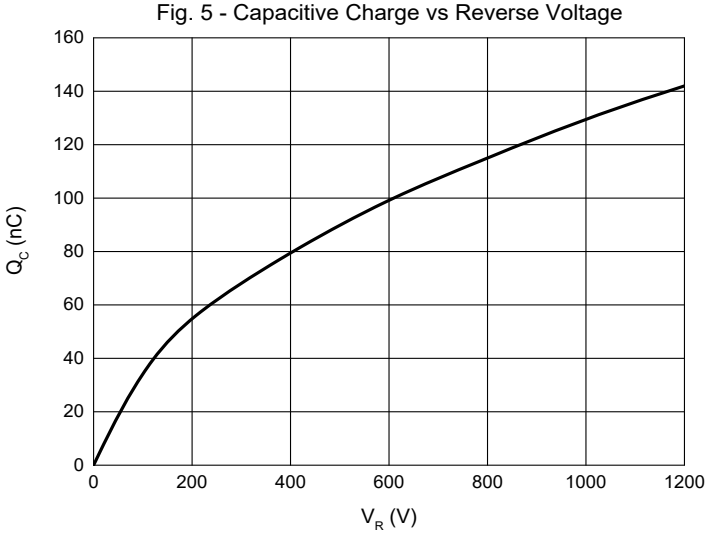
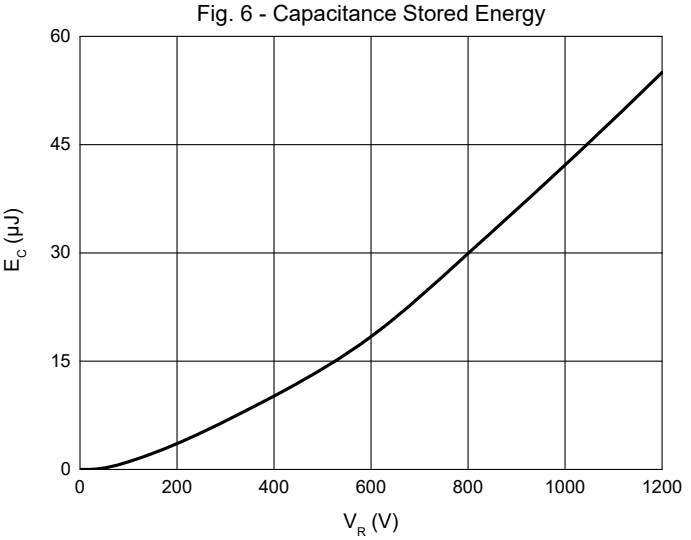


Fig. 6 - Capacitance Stored Energy



Curve Characteristics

Fig. 7 - Current Derating

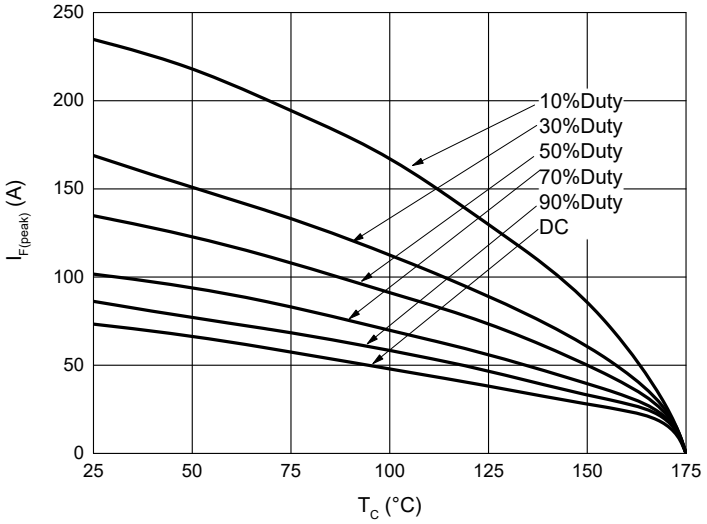


Fig. 8 - Transient Thermal Impedance