Features

- Zero Reverse Recovery Current
- Positive Temperature Coefficient
- High-Speed Switching
- Moisture Sensitivity Level 1
- Epoxy Meets UL 94 V-0 Flammability Rating
- Halogen Free Available Upon Request By Adding Suffix "-HF"
- Lead Free Finish/RoHS Compliant(Note 1) ("P" Suffix designates RoHS Compliant. See ordering information)

10 Amp
Silicon Carbide Schottky Barrier Rectifier
1200 Volts

Benefits

- Temperature-Independent Performance
- Essentially No Switching Loss
- Higher Efficiency
- Reduced EMI
- Reduction of Heat Sink Requirements

Applications

- Switching Power Supply
- Power Factor Correction
- Solar Inverter

Maximum Ratings

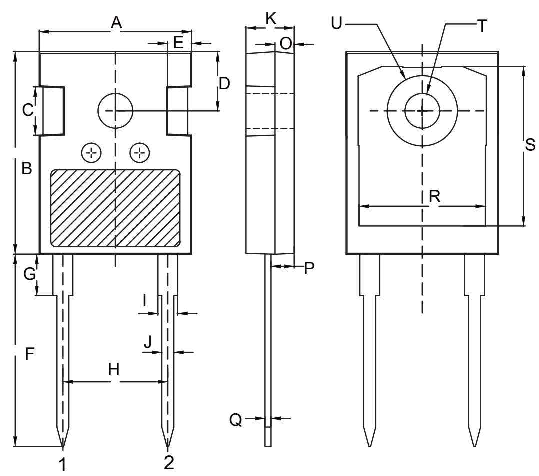
- Operating Junction Temperature Range: -55°C to +175°C
- Storage Temperature Range: -55°C to +175°C
- Thermal Resistance: 1.65°C/W Junction to Case

MCC Part Number	Device Marking
SIC10120PTA	SIC10120PTA

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	10A	T_J=155°C
Peak Forward Surge Current	I_{FSM}	105A	T_C=25°C, t_p=10ms, Half Sine Pulse
Repetitive Peak Forward Current	I_{FRM}	35A	T_C=25°C, t_p=10ms, Half Sine Pulse
Power Dissipation	P_D	140W	T_C=25°C

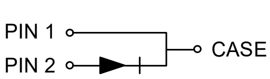
Note :1. High Temperature Solder Exemption Applied, see EU Directive Annex 7a.

TO-247AD



DIM	INCHES		MM		NOTE
	MIN	MAX	MIN	MAX	
A	0.602	0.642	15.30	16.30	
B	0.799	0.839	20.30	21.30	
C	0.189	0.205	4.80	5.20	
D	0.242		6.15		TYP.
E	0.091	0.106	2.30	2.70	
F	0.772	0.796	19.62	20.22	
G	-----	0.169	-----	4.30	
H	0.428		10.88		TYP.
I	0.075	0.087	1.91	2.21	
J	0.044	0.054	1.11	1.36	
K	0.189	0.205	4.80	5.20	
O	0.073	0.085	1.85	2.15	
P	0.087	0.103	2.21	2.61	
Q	0.020	0.030	0.51	0.75	
R	0.512	0.535	13.00	13.60	
S	0.640	0.663	16.25	16.85	
T	0.134	0.150	3.40	3.80	Φ
U	-----	0.287	-----	7.30	Φ

Internal Structure



Electrical Characteristics @ 25°C (Unless Otherwise Specified)

Parameter	Symbol	Conditions	Typ.	Max.	Units
Forward Voltage	V_F	I_F=10A, T_j=25°C	1.5	1.8	V
		I_F=10A, T_j=175°C	2.2	3.0	V
Reverse Leakage Current	I_R	V_R=1200V, T_j=25°C	2	80	μA
		V_R=1200V, T_j=175°C	35		μA
Total Capacitive Charge	Q_C	V_R=800V, T_j=25°C	60		nC
Total capacitance	C	V_R=0V, T_j=25°C , f=1MHz	750		pF
		V_R=400V, T_j=25°C , f=1MHz	55		pF
		V_R=800V, T_j=25°C , f=1MHz	45		pF
Capacitance Stored Energy	E_C	V_R=800V	16		μJ

Curve Characteristics(Per leg)

Fig. 1 - Typical Instantaneous Forward Characteristics

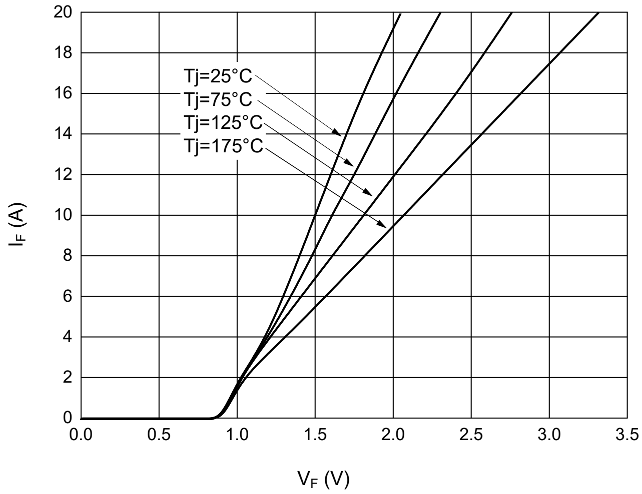
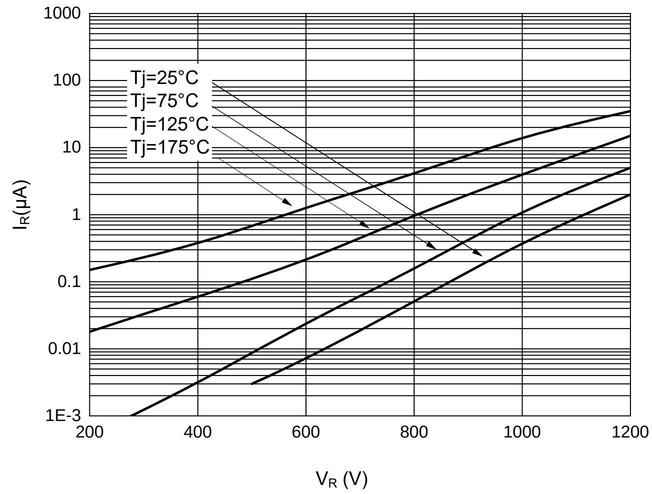


Fig. 2 - Typical Reverse Leakage Characteristics



Curve Characteristics

Fig. 3 - Capacitance vs Reverse Voltage

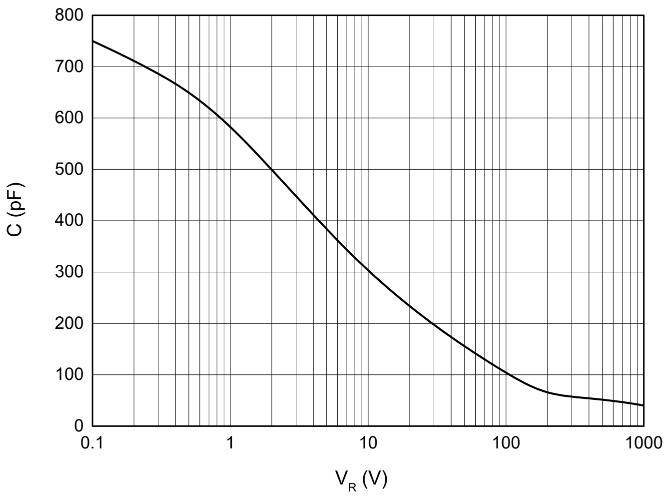


Fig. 4 - Capacitive Charge vs Reverse Voltage

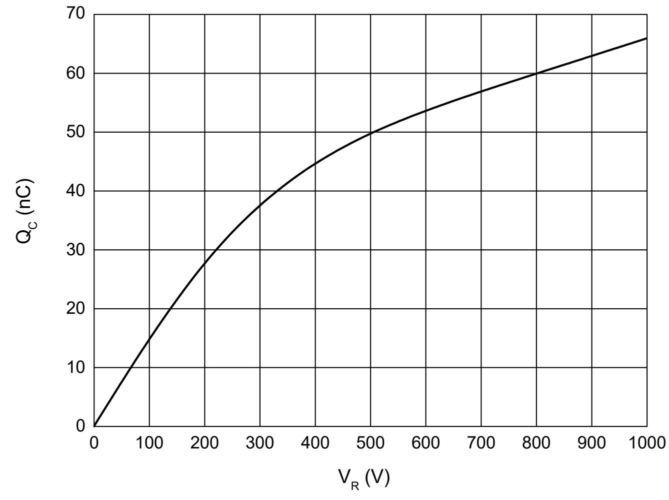


Fig. 5 - Capacitance Stored Energy

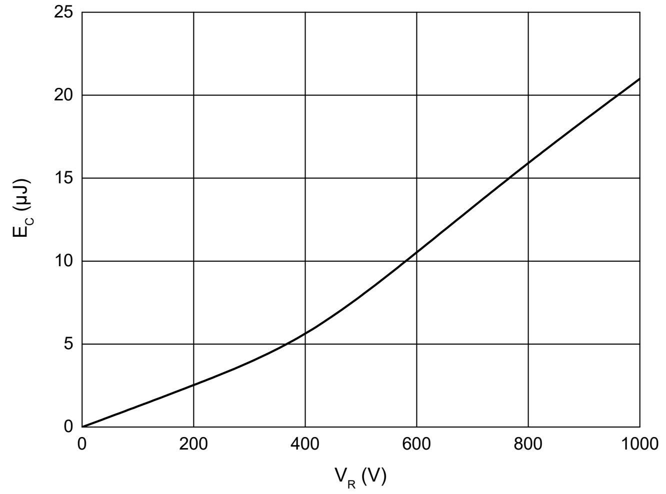


Fig. 6 - Power Derating

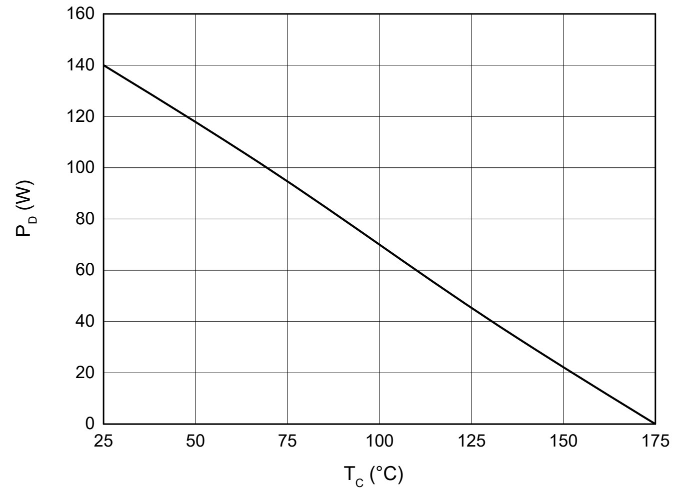


Fig. 7 - Current Derating

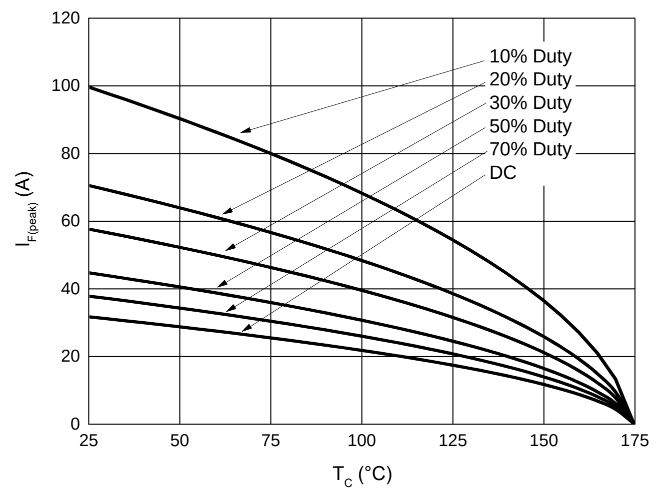
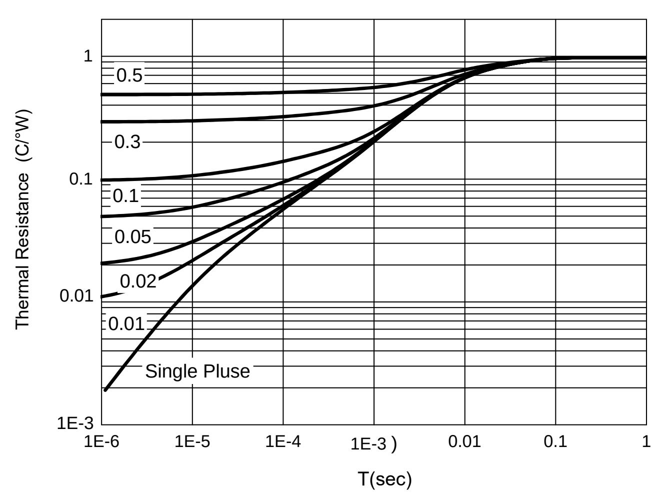


Fig. 8 - Transient Thermal Impedance



Ordering Information

Device	Packing
Part Number-BP	Bulk:360pcs/Box

Note : Adding "-HF" Suffix For Halogen Free, eg. Part Number-BP-HF