

Features

- Zero Forward Recovery Voltage
- Positive Temperature Coefficient
- High-Frequency Operation
- Moisture Sensitivity Level 1
- Epoxy Meets UL 94 V-0 Flammability Rating
- Halogen Free. "Green" Device (Note 1)
- Lead Free Finish/RoHS Compliant(Note 2) ("P" Suffix designates RoHS Compliant. See ordering information)

Benefits

- Temperature-Independent Performance
- Essentially No Switching Loss
- Higher Efficiency
- Reduced EMI

Applications

- Switching Power Supply
- Power Factor Correction
- Solar Inverter

Maximum Ratings

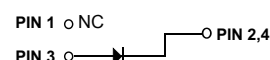
- Operating Junction Temperature Range: -55°C to +175°C
- Storage Temperature Range: -55°C to +175°C
- Typical Thermal Resistance: 0.95°C/W Junction to Case

MCC Part Number		Device Marking	
SICB10120Y		SICB10120Y	
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	$T_C=141^{\circ}\text{C}$
Non-repetitive Peak Forward Surge Current	I_{FSM}	85A	$T_C=25^{\circ}\text{C}$, $t_p=10\text{ms}$, Half Sine Wave
i^2t Value	$\int i^2 dt$	36 A ² S	$T_C=25^{\circ}\text{C}$, $t_p=10\text{ms}$,
Power Dissipation	P_D	158W	$T_C=25^{\circ}\text{C}$

Note:

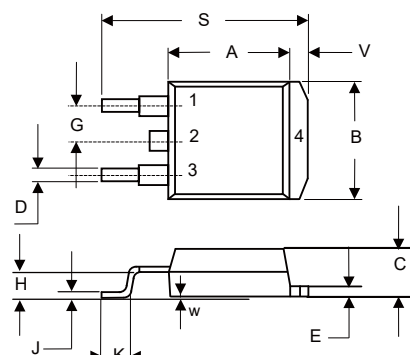
1. Halogen free "Green" products are defined as those which contain <900ppm bromine, <900ppm chlorine (<1500ppm total Br + Cl) and <1000ppm antimony compounds.
2. High Temperature Solder Exemptions Applied, see EU Directive Annex 7a.

Internal Structure:



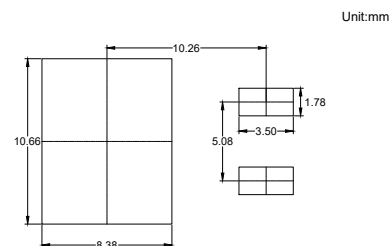
10 Amp Silicon Carbide Schottky Barrier Rectifier 1200 Volts

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	0.10		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	

Suggested Solder Pad Layout



Electrical Characteristics @ 25°C (Unless Otherwise Specified)

Parameter	Symbol	Conditions	Typ.	Max.	Units
Forward Voltage	V_F	$I_F=10A, T_J=25^{\circ}C$	1.42	1.54	V
		$I_F=10A, T_J=175^{\circ}C$	2.1		V
Reverse Leakage Current	I_R	$V_R=1200V, T_J=25^{\circ}C$	1.3	13	μA
		$V_R=1200V, T_J=175^{\circ}C$	6		μA
Total Capacitive Charge	Q_C	$V_R=800V$	53		nC
Total capacitance	C	$V_R=0V, f=1MHz$	700		pF
		$V_R=400V, f=1MHz$	49		pF
		$V_R=800V, f=1MHz$	39		pF
Capacitance Stored Energy	E_C	$V_R=800V$	14		μJ

Curve Characteristics

Fig. 1 - Typical Forward Characteristics

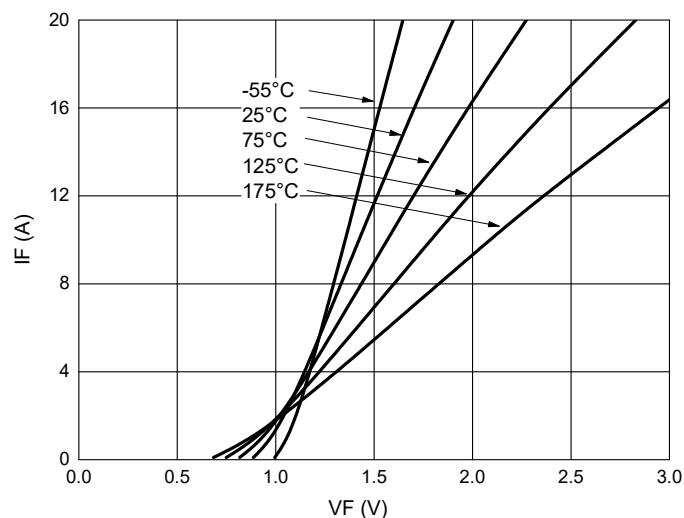


Fig. 2 - Typical Reverse Leakage Characteristics

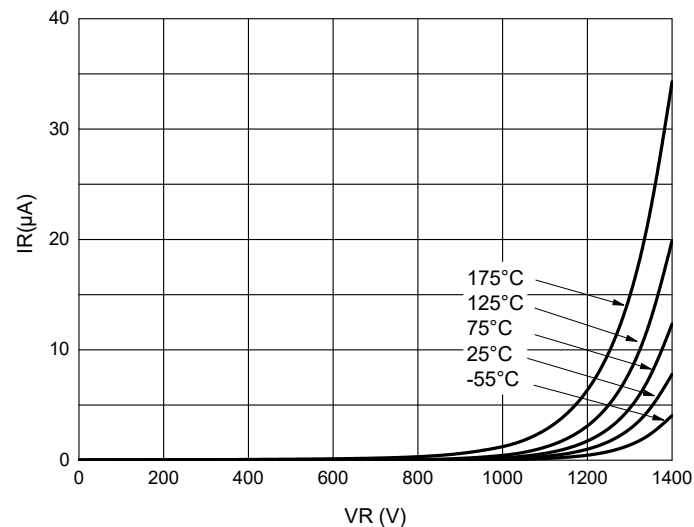


Fig. 3 - Capacitance vs Reverse Voltage

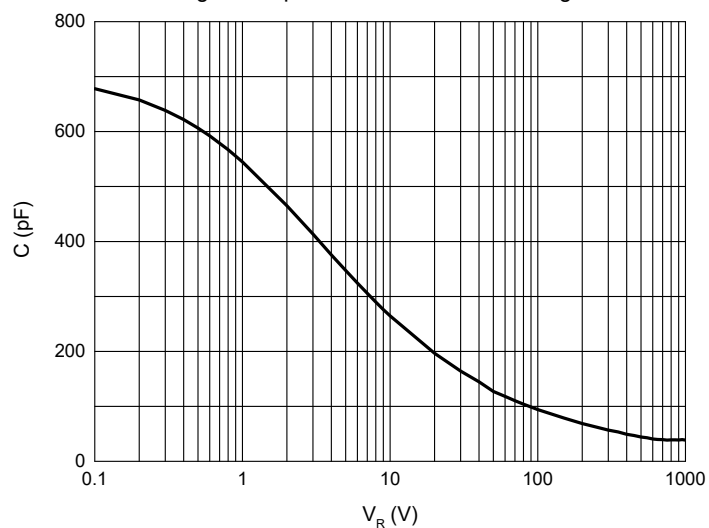


Fig. 4 - Current Derating

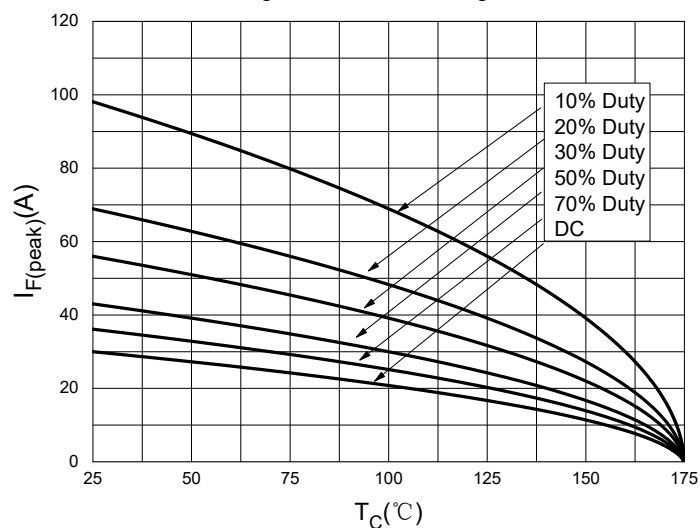


Fig. 5 - Capacitive Charge vs Reverse Voltage

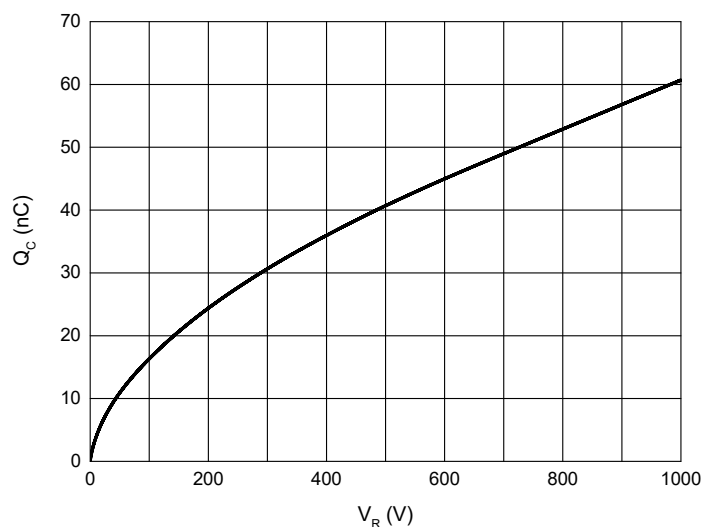
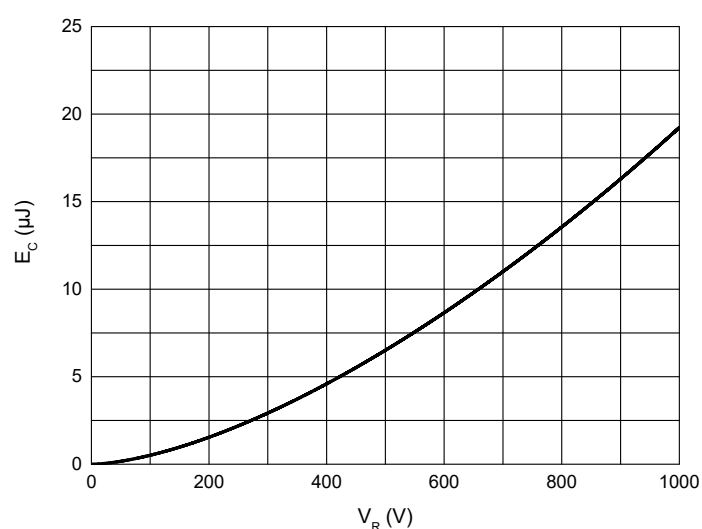


Fig. 6 - Capacitance Stored Energy



Curve Characteristics

Fig. 7 - Power Derating

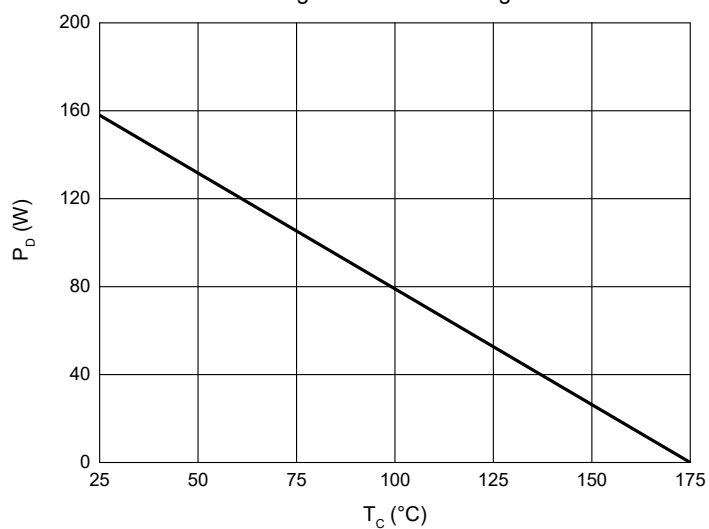
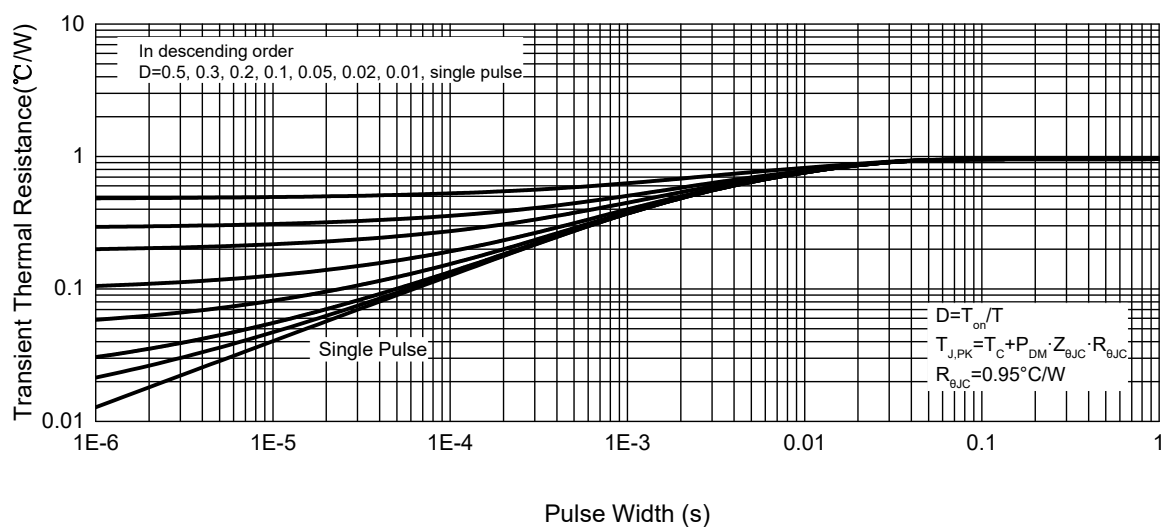


Fig. 8 - Transient Thermal Impedance



Ordering Information

Device	Packing
Part Number-TP	Tape&Reel: 800pcs/Reel

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