

## Features

- Zero Reverse Recovery Current
- Positive Temperature Coefficient
- High-Speed Switching
- Epoxy Meets UL 94 V-0 Flammability Rating
- Halogen Free. "Green" Device (Note1)
- Lead Free Finish/RoHS Compliant<sup>(Note2)</sup> ("P" Suffix designates RoHS Compliant. See ordering information)

## Benefits

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

## Applications

- Solar inverter
- Power Factor Correction
- Motor Drive
- Charging Pile

## Maximum Ratings

Parameter	Symbol	Rating	Unit
Peak Repetitive Reverse Voltage@ T <sub>j</sub> =25°C	V <sub>RRM</sub>	1200	V
Surge Peak Reverse Voltage@ T <sub>j</sub> =25°C	V <sub>RSM</sub>	1200	V
DC Reverse Voltage@ T <sub>j</sub> =25°C	V <sub>DC</sub>	1200	V
Continuous forward Current	@T <sub>C</sub> =25°C	7.5	A
	@T <sub>C</sub> =135°C	3.6	
	@T <sub>C</sub> =161°C	2	
Non-repetitive Peak Forward Surge Current @T <sub>C</sub> =25°C, t <sub>p</sub> =10ms, Half Sine Pulse	I <sub>FSM</sub>	20	A
Power Dissipation	@T <sub>C</sub> =25°C	47.5	W
	@T <sub>C</sub> =110°C	20.6	

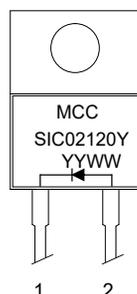
Note1: Halogen free "Green" products are defined as those which contain <900ppm bromine, <900ppm chlorine (<1500ppm total Br + Cl) and <1000ppm antimony compounds.

Note2: High Temperature Solder Exemptions Applied, see EU Directive Annex 7a.

### Internal Structure:



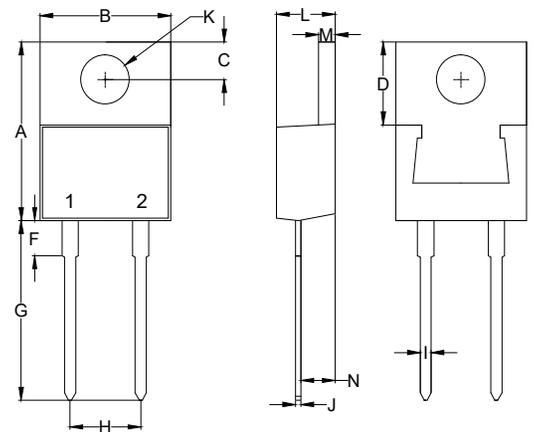
### Device Marking:



Device Code: SIC02120Y  
Date Code: YYWW (Year & Week)

# 2 Amp Silicon Carbide Schottky Barrier Rectifier 1200 Volts

## TO-220AC



DIM	INCHES		MM		NOTE
	MIN	MAX	MIN	MAX	
A	0.560	0.625	14.22	15.88	
B	0.380	0.420	9.65	10.67	
C	0.100	0.135	2.54	3.43	
D	0.230	0.270	5.84	6.86	
F	----	0.250	----	6.35	
G	0.500	0.580	12.70	14.73	
H	0.190	0.210	4.83	5.33	
I	0.020	0.045	0.51	1.14	
J	0.012	0.025	0.30	0.64	
K	0.139	0.161	3.53	4.09	Φ
L	0.140	0.190	3.56	4.83	
M	0.045	0.055	1.14	1.40	
N	0.080	0.115	2.03	2.92	

**Electrical Characteristics @ 25°C (Unless Otherwise Specified)**

Parameter	Symbol	Conditions	Typ.	Max.	Unit
Forward Voltage	$V_F$	$I_F=2A, T_J=25^\circ C$	1.45	1.60	V
		$I_F=2A, T_J=175^\circ C$	2.17		V
Reverse Leakage Current	$I_R$	$V_R=1200V, T_J=25^\circ C$	0.1	20	$\mu A$
		$V_R=1200V, T_J=175^\circ C$	0.5		$\mu A$
Total Capacitive Charge	$Q_C$	$V_R=800V, T_J=25^\circ C$	10.2		nC
Total capacitance	C	$V_R=0V, f=1MHz$	127		pF
		$V_R=400V, f=1MHz$	9.8		pF
		$V_R=800V, f=1MHz$	7.5		pF
Capacitance Stored Energy	$E_C$	$V_R=800V$	2.6		$\mu J$

**Thermal characteristics**

Parameter	Symbol	Min	Typ	Max	Unit
Operating Junction Temperature Range	$T_J$	-55		175	$^\circ C$
Storage Temperature Range	$T_{stg}$	-55		175	$^\circ C$
Thermal Resistance from Junction to Case	$R_{th_{J-C}}$		3.16		$^\circ C/W$

## Curve Characteristics

Fig. 1 - Typical Forward Characteristics

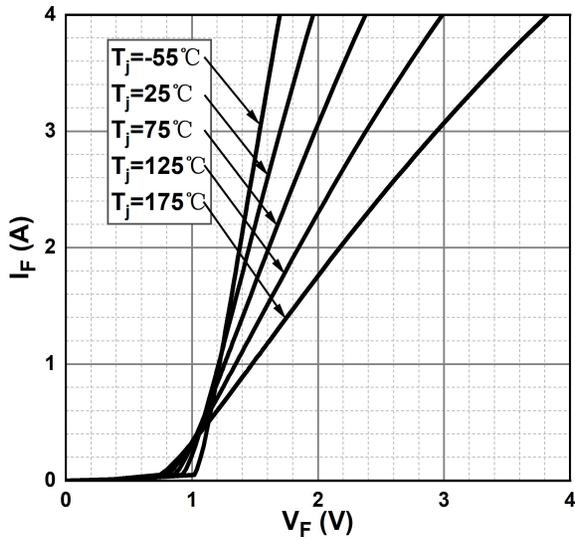


Fig. 2 - Typical Reverse Leakage Characteristics

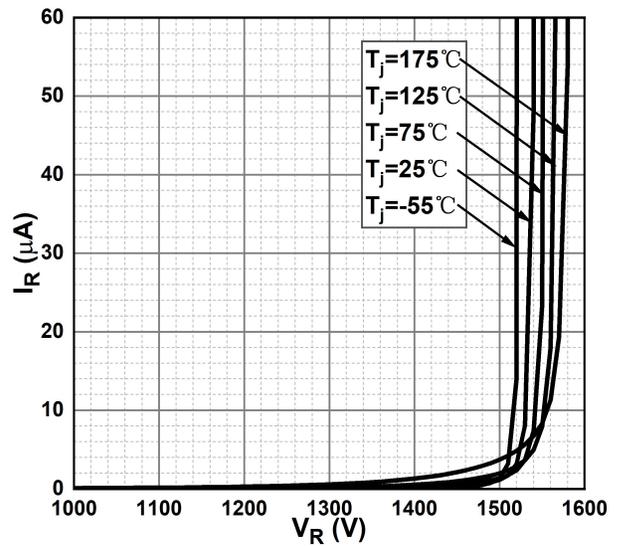


Fig. 3 - Capacitance vs Reverse Voltage

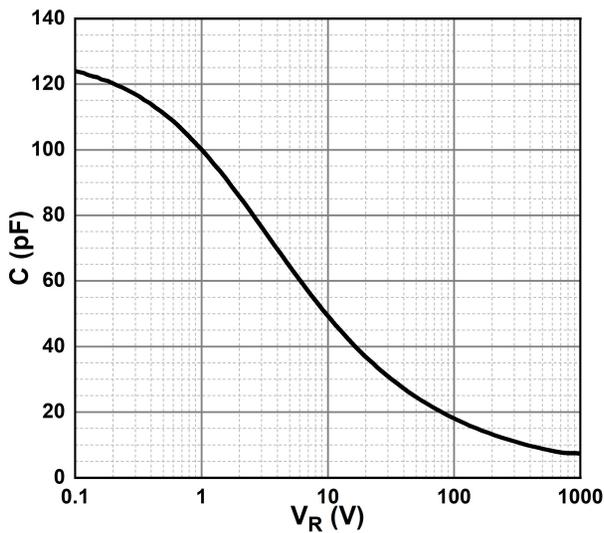


Fig. 4 - Typical Power Derating

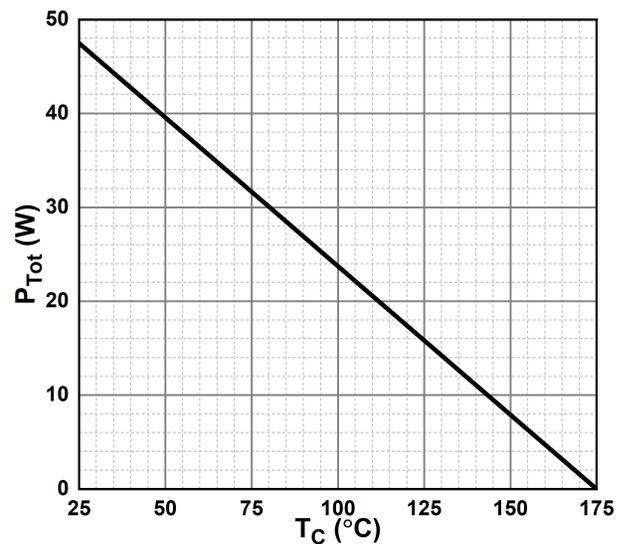


Fig. 5 - Capacitive Charge vs Reverse Voltage

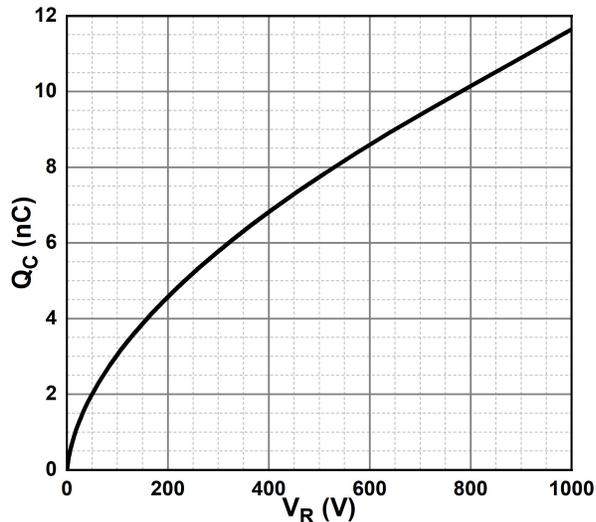
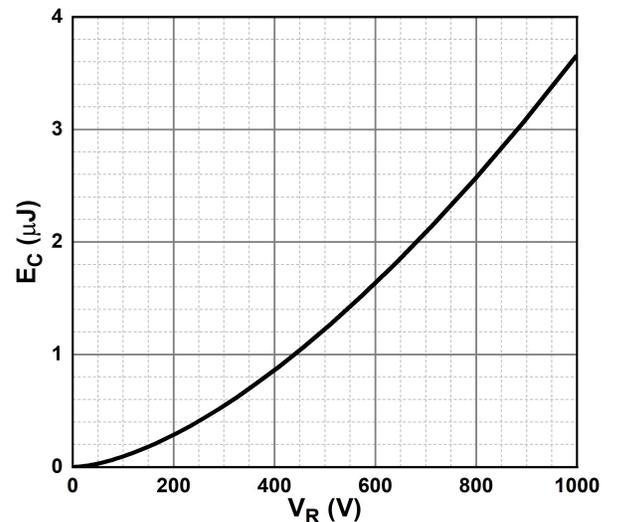


Fig. 6 - Capacitance Stored Energy



Curve Characteristics

Fig. 7 - Current Derating

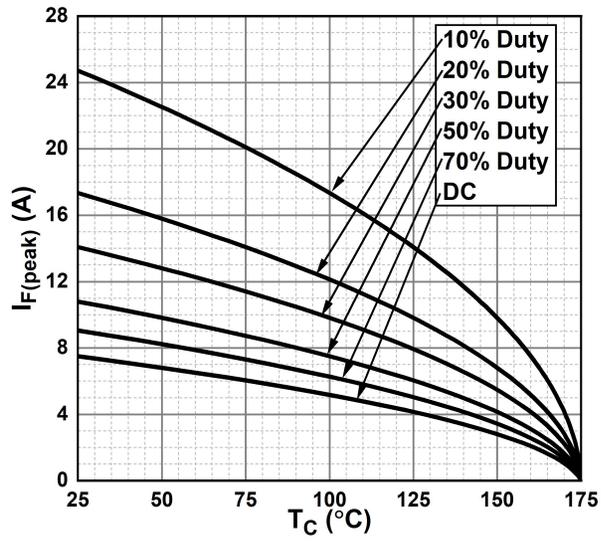
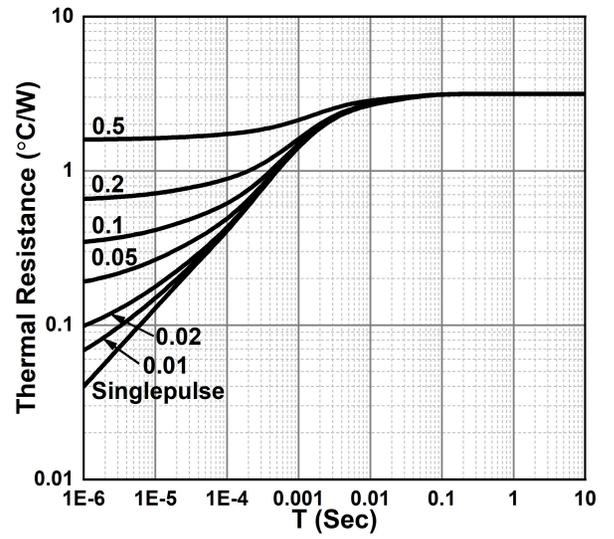


Fig. 8 - Transient Thermal Impedance



## Ordering Information

Device	Packing
Part Number-BP	Bulk: 50pcs/Tube, 1Kpcs/Box, 5Kpcs/Carton

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