

## 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 2) ("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: 0.88°C/W Junction to Case

MCC Part Number	Device Marking
SIC2060Y	SIC2060Y

Peak Repetitive Reverse Voltage	$V_{RRM}$	650V	
Surge Peak Reverse Voltage	$V_{RSM}$	650V	
DC Reverse Voltage	$V_{DC}$	650V	
Average Forward Current	$I_F$	20A	$T_C=145^\circ\text{C}$
Non-repetitive Peak Forward Surge Current	$I_{FSM}$	160A	$T_C=25^\circ\text{C}$ , $t_p=10\text{ms}$ , Half Sine Pulse
Power Dissipation	$P_D$	170W	$T_C=25^\circ\text{C}$

Note:

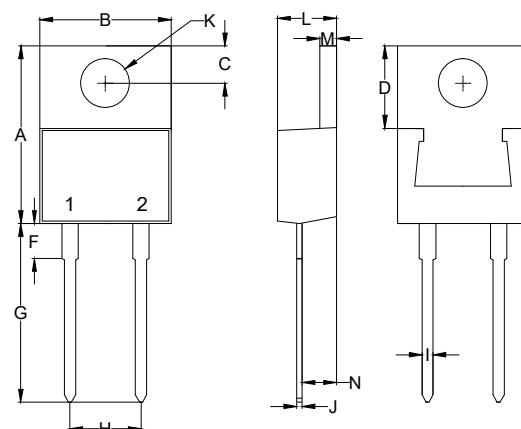
1. Halogen free "Green" products are defined as those which contain <900ppm bromine, <900ppm chlorine (<1500ppm total Br + Cl) and <1000ppm antimony compounds.
2. High Temperature Solder Exemptions Applied, see EU Directive Annex 7a.

## Internal Structure:



# 20Amp Silicon Carbide Schottky Barrier Rectifier 650 Volts

## TO-220AC



DIM	DIMENSIONS				NOTE
	INCHES		MM		
	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.	Units
Forward Voltage	$V_F$	$I_F=20A, T_J=25^\circ C$	1.35	1.55	V
		$I_F=20A, T_J=175^\circ C$	1.75		V
Reverse Leakage Current	$I_R$	$V_R=650V, T_J=25^\circ C$	1	25	$\mu A$
		$V_R=650V, T_J=175^\circ C$	5		$\mu A$
Total Capacitive Charge	$Q_C$	$V_R=400V$	62		nC
Total capacitance	C	$V_R=0V, f=1MHz$	1157		pF
		$V_R=200V, f=1MHz$	115.6		pF
		$V_R=400V, f=1MHz$	107		pF
Capacitance Stored Energy	$E_C$	$V_R=400V$	7.8		$\mu J$

**Curve Characteristics**

Fig. 1 - Typical Forward Characteristics

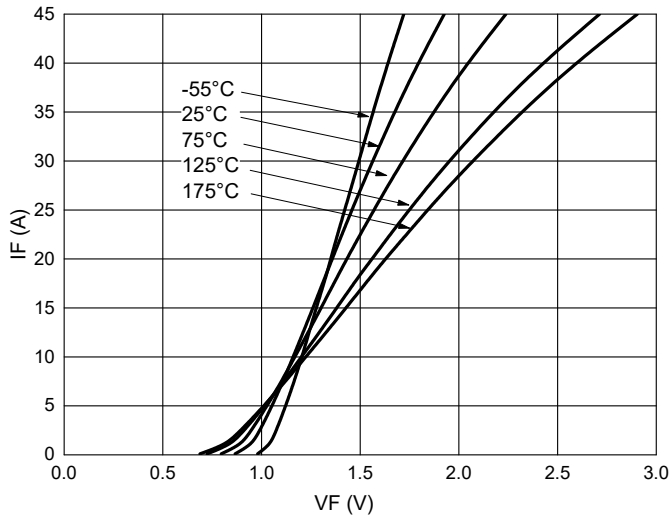


Fig. 2 - Typical Reverse Leakage Characteristics

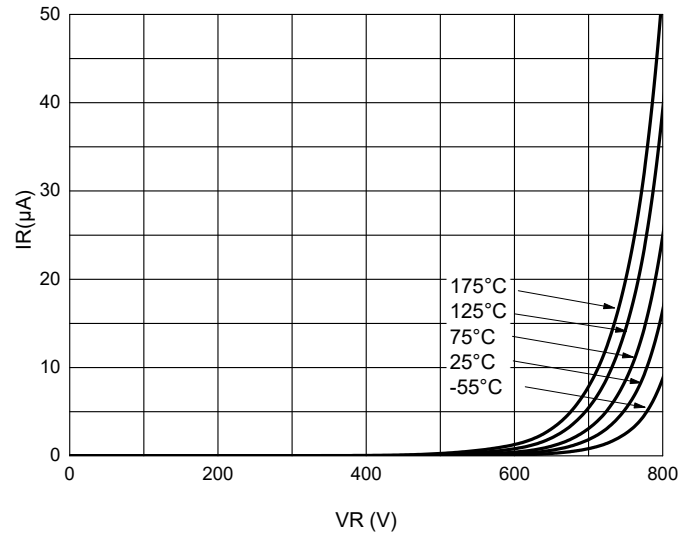


Fig. 3 - Capacitance vs Reverse Voltage

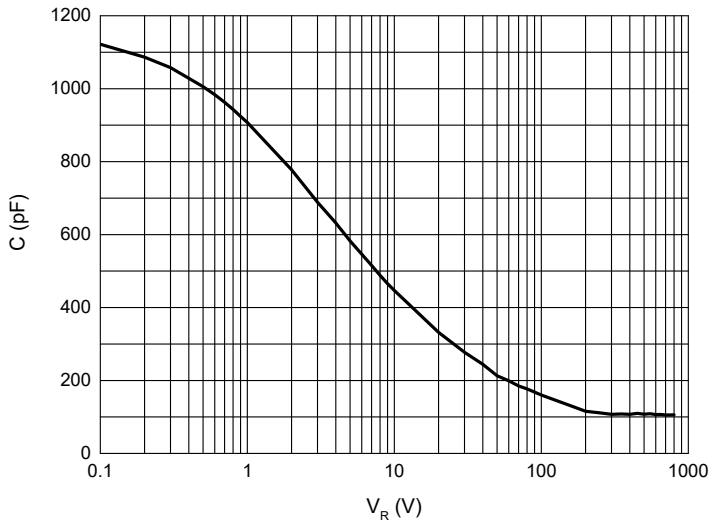


Fig. 4 - Current Derating

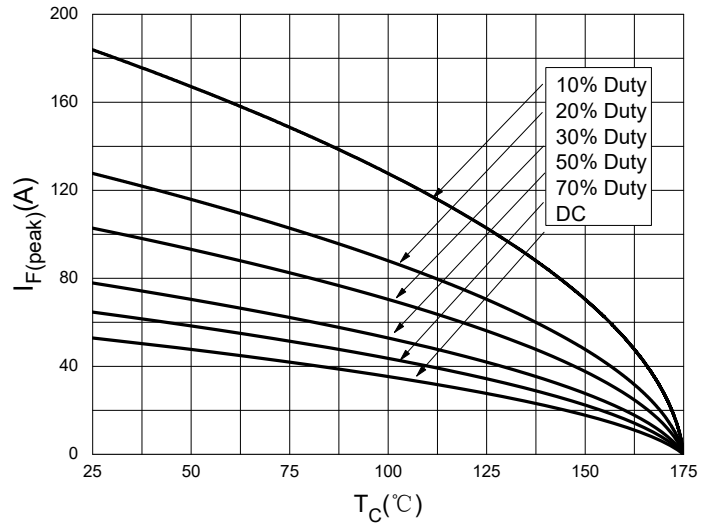


Fig. 5 - Capacitive Charge vs Reverse Voltage

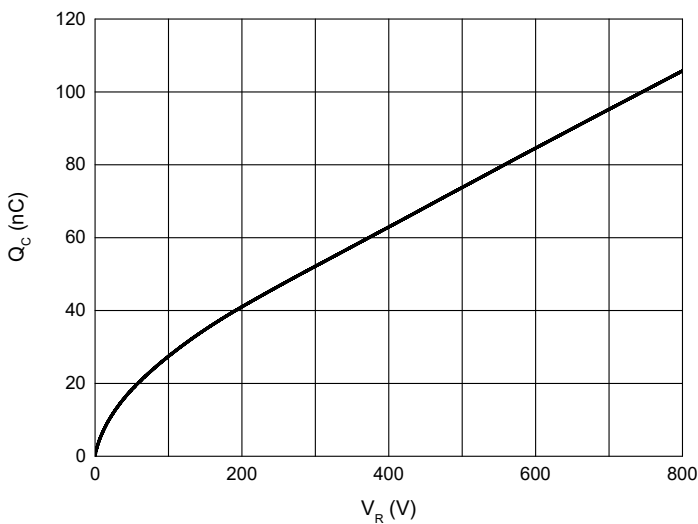
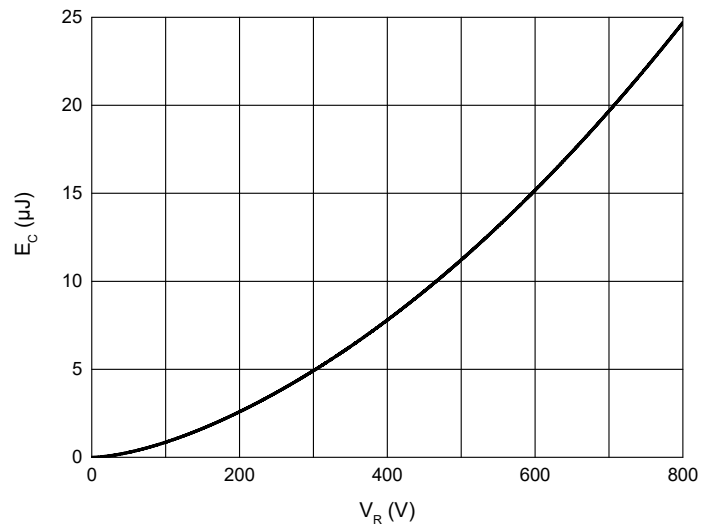


Fig. 6 - Capacitance Stored Energy



## Curve Characteristics

Fig. 7 - Power Derating

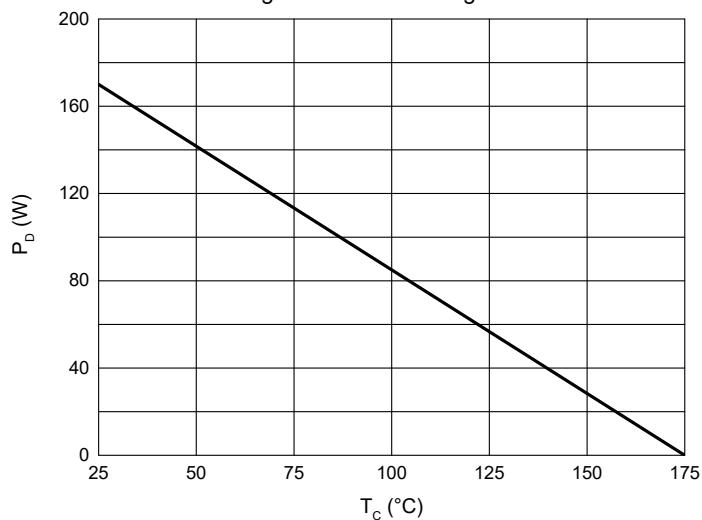
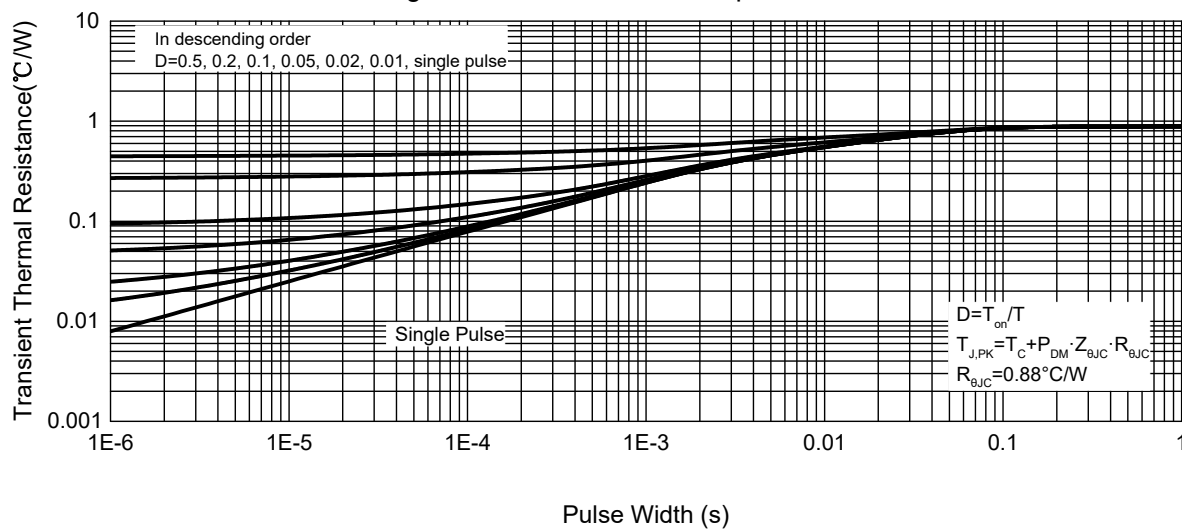


Fig. 8 - Transient Thermal Impedance



## Ordering Information

Device	Packing
SIC2060Y-BP	Bulk: 50pcs/Tube, 1Kpcs/Box, 5Kpcs/Carton

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