

## 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. "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

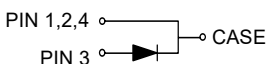
## Maximum Ratings

Peak Repetitive Reverse Voltage	$V_{RRM}$	650V	
Surge Peak Reverse Voltage	$V_{RSM}$	650V	
DC Reverse Voltage	$V_{DC}$	650V	
Average Forward Current	$I_F$	30A	$T_c=25^\circ\text{C}$
		14A	$T_c=135^\circ\text{C}$
		10A	$T_c=154^\circ\text{C}$
Non-repetitive Peak Forward Surge Current	$I_{FSM}$	80A	$T_c=25^\circ\text{C}$ , $t_p=10\text{ms}$ , Half Sine Pulse
Power Dissipation	$P_D$	136W	$T_c=25^\circ\text{C}$
		59W	$T_c=110^\circ\text{C}$

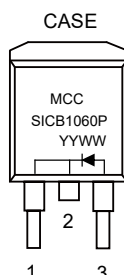
Note:

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:



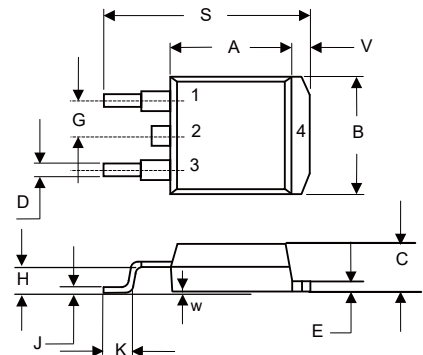
## Device Marking:



Device Code: SICB1060P  
Date Code: YYWW (Year & Week)

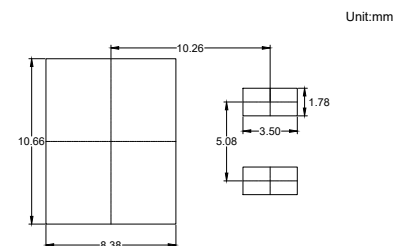
# 10Amp Silicon Carbide Schottky Barrier Rectifier 650 Volts

## D<sup>2</sup>-PAK



DIM	DIMENSIONS				NOTE
	INCHES		MM		
	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	$V_F$	$I_F=10A, T_J=25^\circ C$	1.35	1.55	V
		$I_F=10A, T_J=175^\circ C$	1.8		V
Reverse Leakage Current	$I_R$	$V_R=650V, T_J=25^\circ C$	0.5	25	$\mu A$
		$V_R=650V, T_J=175^\circ C$	2		$\mu A$
Total Capacitive Charge	$Q_C$	$V_R=400V$	30		nC
Total capacitance	C	$V_R=0V, f=1MHz$	543		pF
		$V_R=200V, f=1MHz$	55		pF
		$V_R=400V, f=1MHz$	52		pF
Capacitance Stored Energy	$E_C$	$V_R=400V$	3.7		$\mu J$

**Thermal characteristics**

Parameter	Symbol	Min	Typ	Max	Units
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	$R_{th_{J-C}}$		1.1		$^\circ C/W$

**Curve Characteristics**

Fig. 1 - Typical Forward Characteristics

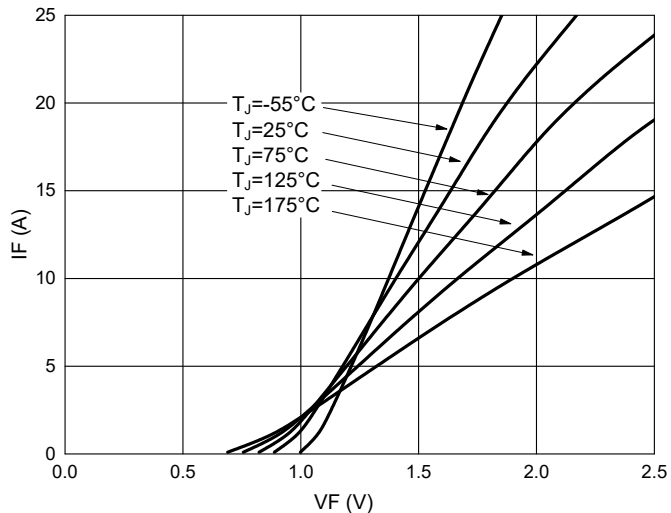


Fig. 2 - Typical Reverse Leakage Characteristics

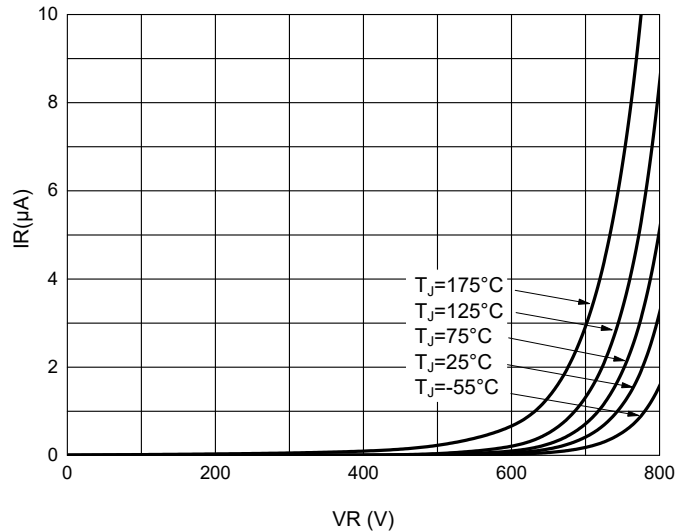


Fig. 3 - Capacitance vs Reverse Voltage

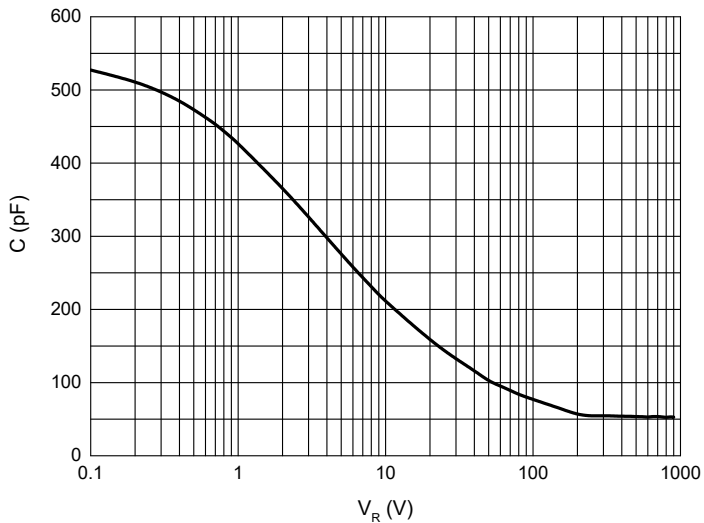


Fig. 4 - Current Derating

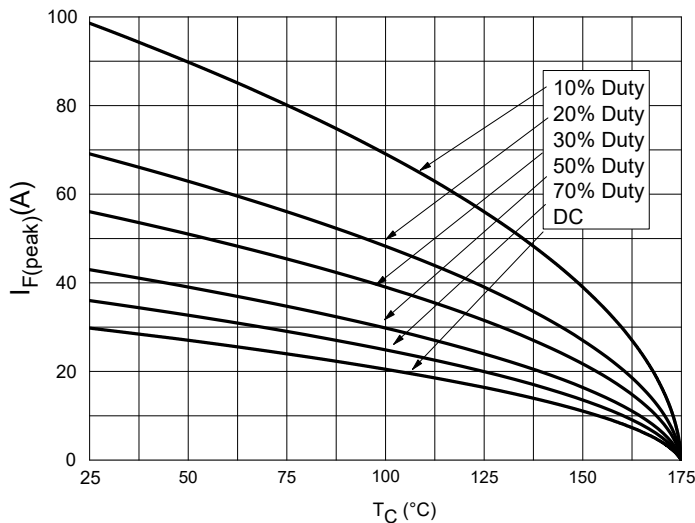


Fig. 5 - Capacitive Charge vs Reverse Voltage

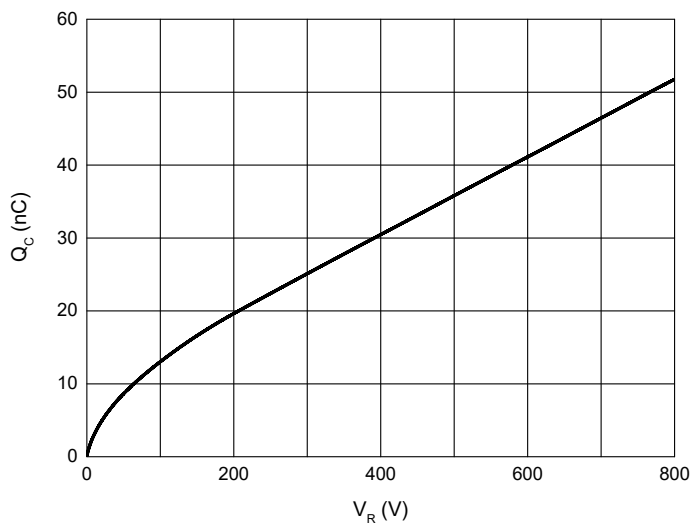
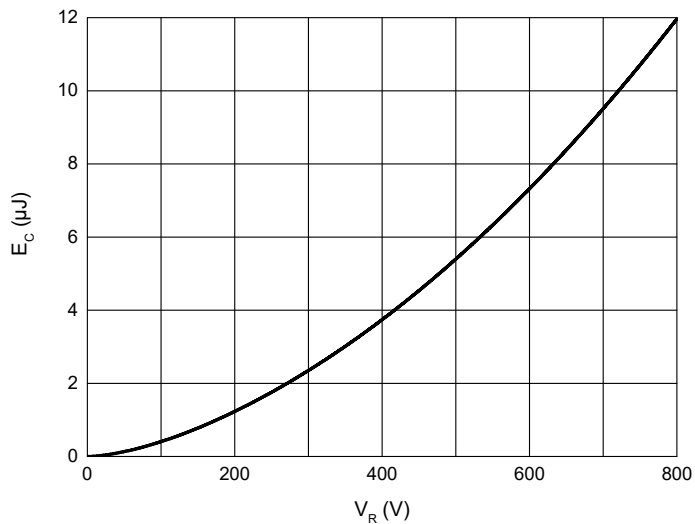
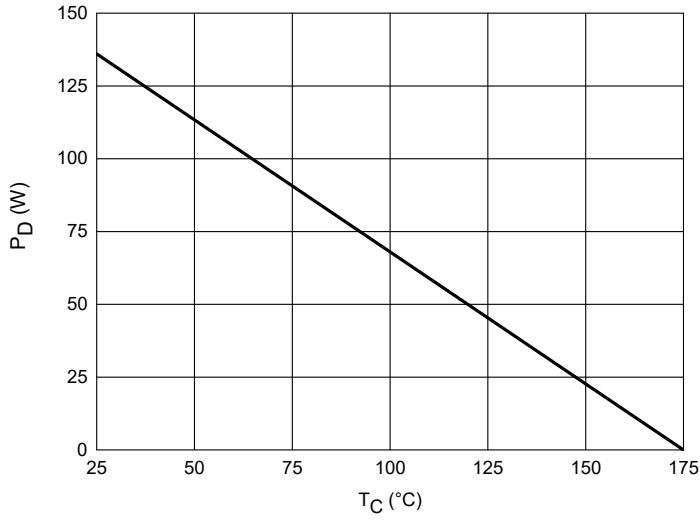


Fig. 6 - Capacitance Stored Energy



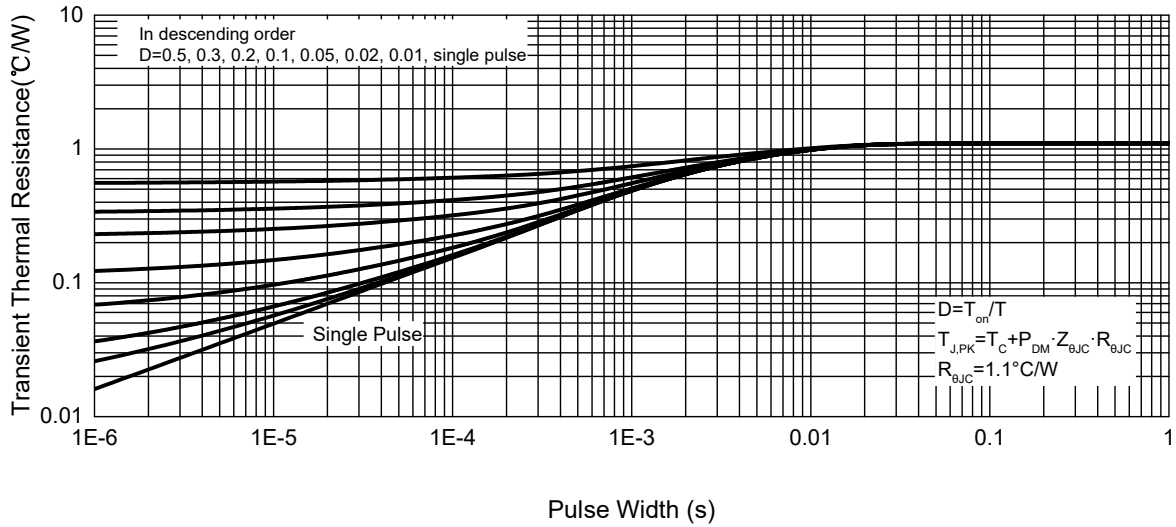
## Curve Characteristics

Fig. 7 - Typical Power Derating



## Curve Characteristics

Fig. 8 - Transient Thermal Impedance



## Ordering Information

Device	Packing
SICB1060P-TP	Tape&Reel: 800pcs/Reel

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