Features

- Zero Reverse Recovery Current
- Merged PiN Schottky (MPS) Diodes Technologies
- 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

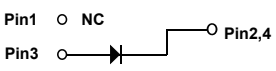
20Amp Silicon Carbide Schottky Rectifier 650 Volts

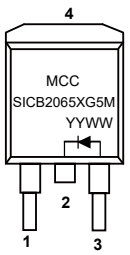
Maximum Ratings

Parameter	Symbol	Rating	Unit
Peak Repetitive Reverse Voltage@T_j=25°C	V_{RRM}	650	V
Surge Peak Reverse Voltage@T_j=25°C	V_{RSM}	650	V
DC Reverse Voltage@T_j=25°C	V_{DC}	650	V
Continuous forward Current @T_C=25°C	I_F	86	A
Continuous forward Current @T_C=135°C	I_F	39	A
Continuous forward Current @T_C=160°C	I_F	20	A
Non-repetitive Peak Forward Surge Current @T_C=25°C, t_p=10ms, Half Sine Pulse	I_{FSM}	380	A
Power Dissipation @T_C=25°C	P_D	250	W
Power Dissipation @T_C=110°C	P_D	108	W
i^2t Value@ TC=25°C ,tp=10ms	$\int i^2dt$	722	A^2S

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.

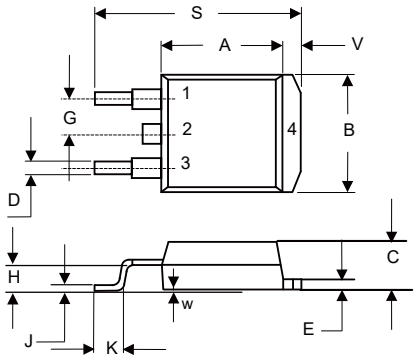
Internal Structure:





Device Code: SICB2065XG5M
Date Code: YYWW (Year & Week)

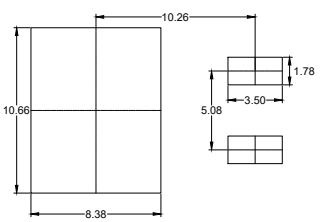
D²-PAK



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

Unit:mm



Electrical Characteristics @ 25°C (Unless Otherwise Specified)

Parameter	Symbol	Conditions	Typ.	Max.	Units
Forward Voltage	V_F	I_F=20A, T_J=25°C	1.15	1.30	V
		I_F=20A, T_J=175°C	1.25		V
Reverse Leakage Current	I_R	V_R=650V, T_J=25°C	1.0	25	μA
		V_R=650V, T_J=175°C	20		μA
Total Capacitive Charge	Q_C	V_R=400V	136		nC
Total capacitance	C	V_R=0V, f=1MHz	2530		pF
		V_R=200V, f=1MHz	250		pF
		V_R=400V, f=1MHz	245		pF
Capacitance Stored Energy	E_C	V_R=400V	21		μJ

Thermal characteristics

Parameter	Symbol	Min	Typ	Max	Unit
Operating Junction Temperature Range	T_J	-55		175	°C
Storage Temperature Range	T_{stg}	-55		175	°C
Thermal Resistance from Junction to Case	Rth_{J-C}		0.6		°C/W

Curve Characteristics

Figure 1. Forward Characteristics

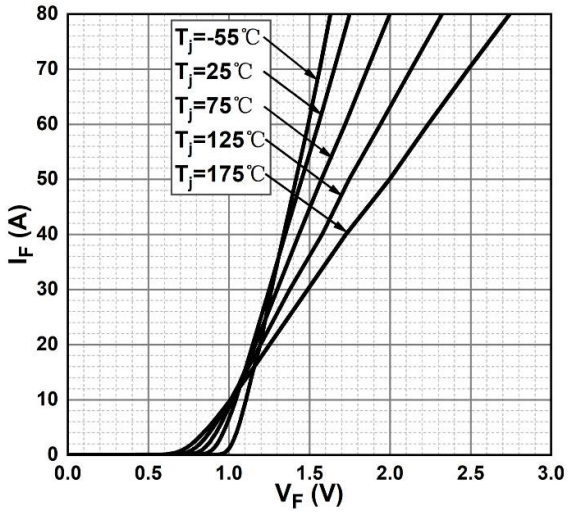


Figure 2. Reverse Characteristics

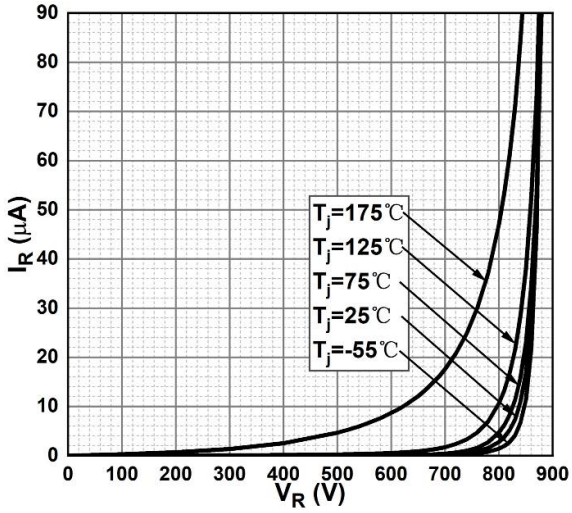


Figure 3. Capacitance vs. Reverse Voltage

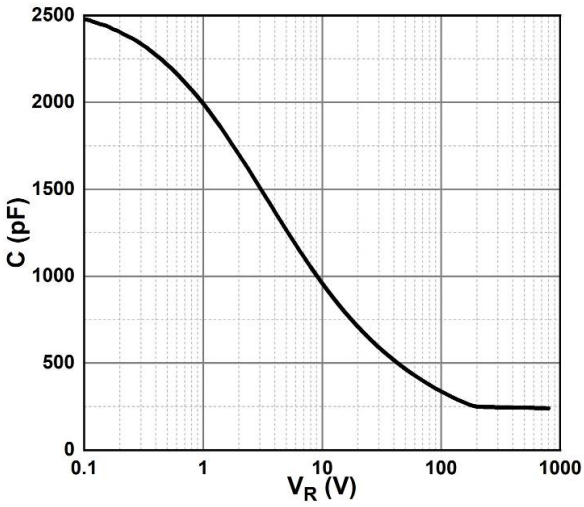


Figure 4. Total Capacitance Charge vs. Reverse Voltage

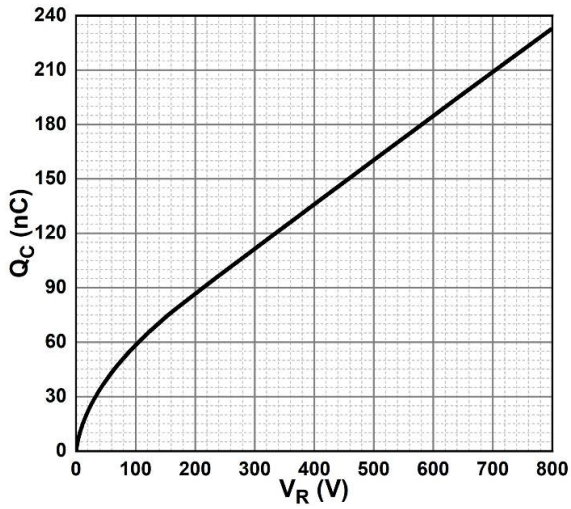


Figure 5. Capacitance Stored Energy

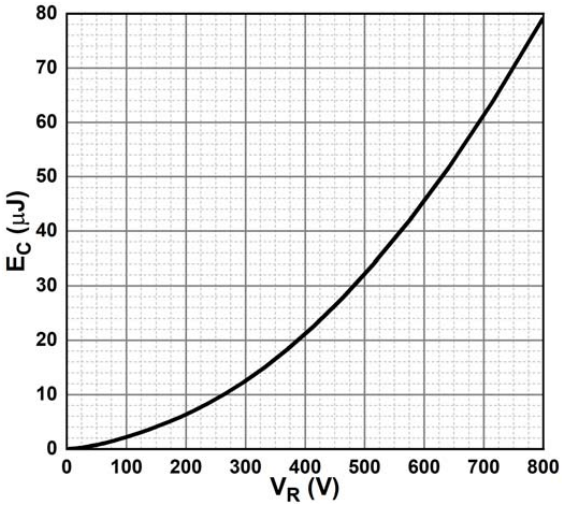
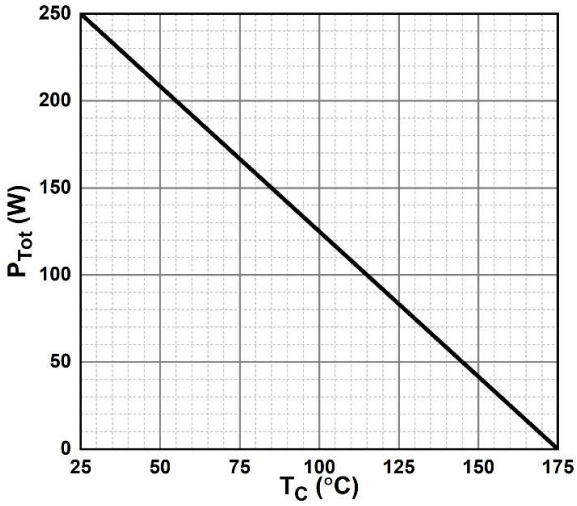


Figure 6. Power Derating



Curve Characteristics

Figure 7. Current Derating

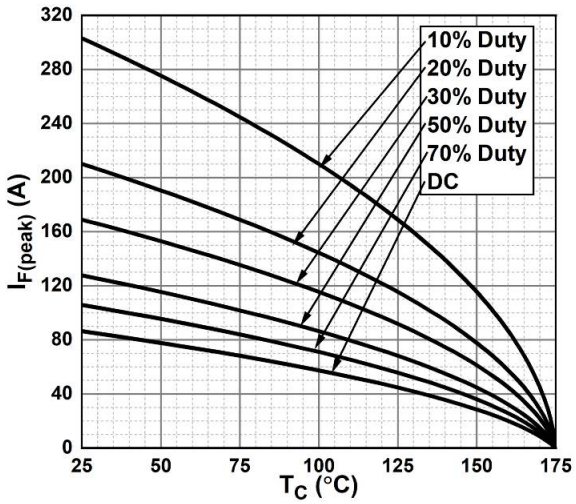
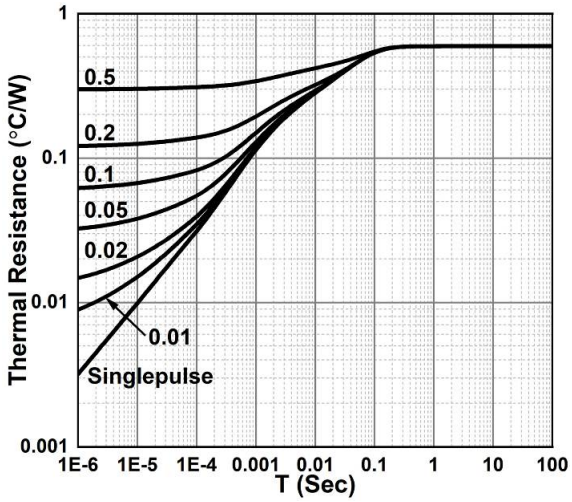


Figure 8. Transient Thermal Impedance



Ordering Information

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