

Features

- Zero Reverse Recovery Current
- AEC-Q101 Qualified
- Positive Temperature Coefficient
- High-Speed Switching
- Epoxy Meets UL 94 V-0 Flammability Rating
- Halogen Free. "Green" Device (Note1)
- Lead Free Finish/RoHS Compliant(Note2) ("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@ $T_j=25^{\circ}\text{C}$	V_{RRM}	650	V
Surge Peak Reverse Voltage@ $T_j=25^{\circ}\text{C}$	V_{RSM}	650	V
DC Reverse Voltage@ $T_j=25^{\circ}\text{C}$	V_{DC}	650	V
Continuous forward Current	@ $T_c=25^{\circ}\text{C}$	12.5	A
	@ $T_c=135^{\circ}\text{C}$	5.9	
	@ $T_c=153^{\circ}\text{C}$	4	
Non-repetitive Peak Forward Surge Current @ $T_c=25^{\circ}\text{C}$, $t_p=10\text{ms}$, Half Sine Pulse	I_{FSM}	28	A
Power Dissipation	@ $T_c=25^{\circ}\text{C}$	56	W
	@ $T_c=110^{\circ}\text{C}$	24	

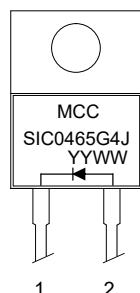
Note1: Halogen free "Green" products are defined as those which contain <900ppm bromine, <900ppm chlorine (<1500ppm total Br + Cl) and <1000ppm antimony compounds.

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

Internal Structure:



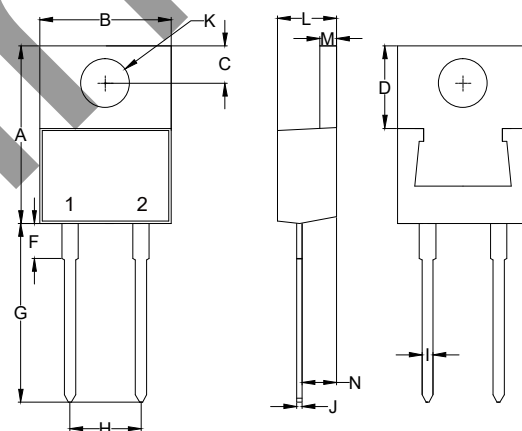
Device Marking:



Device Code: SIC0465G4J
Date Code: YYWW (Year & Week)

4 Amp Silicon Carbide Schottky Barrier Rectifier 650 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	$I_F=4A, T_J=25^{\circ}C$	1.45	1.65	V
		$I_F=4A, T_J=175^{\circ}C$	2.0		V
Reverse Leakage Current	I_R	$V_R=650V, T_J=25^{\circ}C$	0.1	25	μA
		$V_R=650V, T_J=175^{\circ}C$	2.0		μA
Total Capacitive Charge	Q_C	$V_R=400V, T_J=25^{\circ}C$	11		nC
Total capacitance	C	$V_R=0V, f=1MHz$	194		pF
		$V_R=200V, f=1MHz$	20.5		pF
		$V_R=400V, f=1MHz$	19.5		pF
Capacitance Stored Energy	E_C	$V_R=400V$	1.34		μJ

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	$R_{th_{J-C}}$		2.67		$^{\circ}C/W$

Curve Characteristics

Fig. 1 - Typical Forward Characteristics

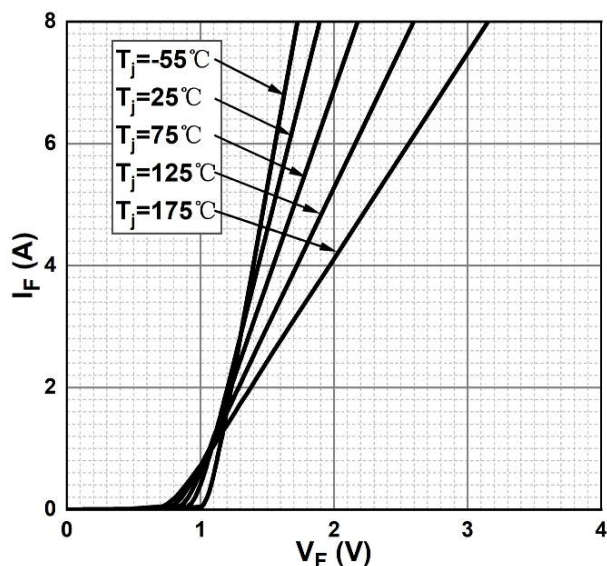


Fig. 2 - Typical Reverse Leakage Characteristics

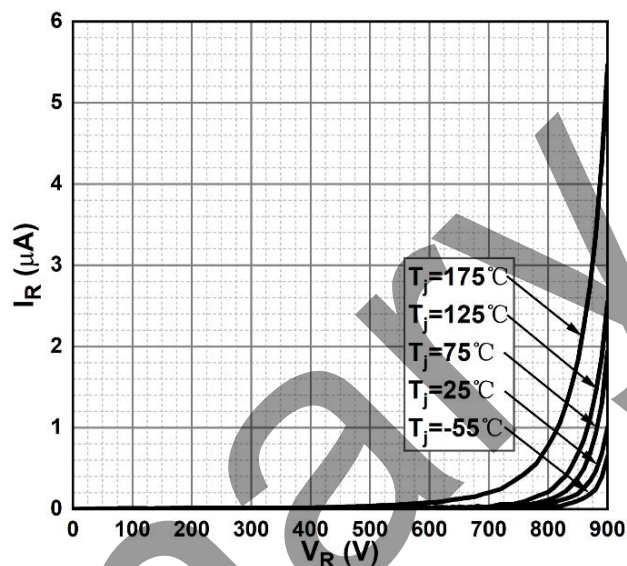


Fig. 3 - Capacitance vs Reverse Voltage

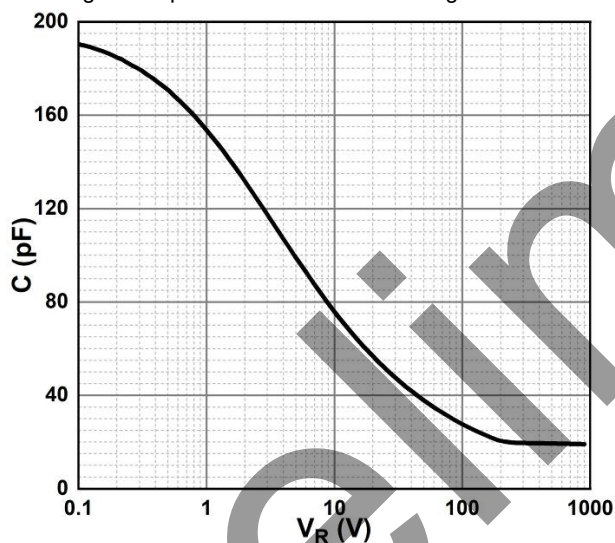


Figure 4. Total Capacitance Charge vs. Reverse Voltage

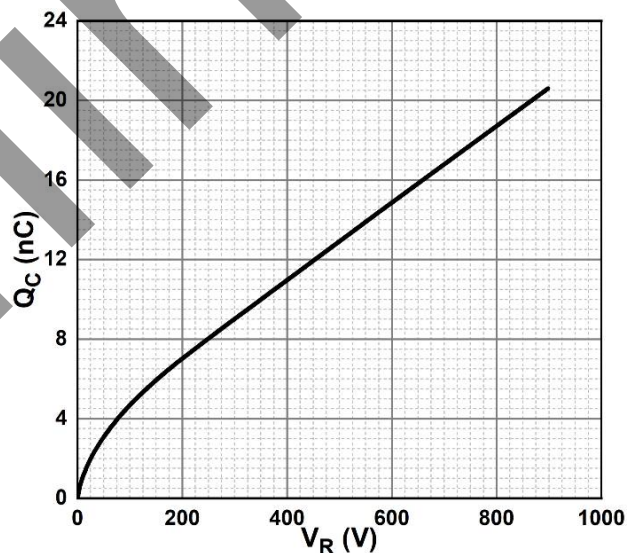


Figure 5. Capacitance Stored Energy

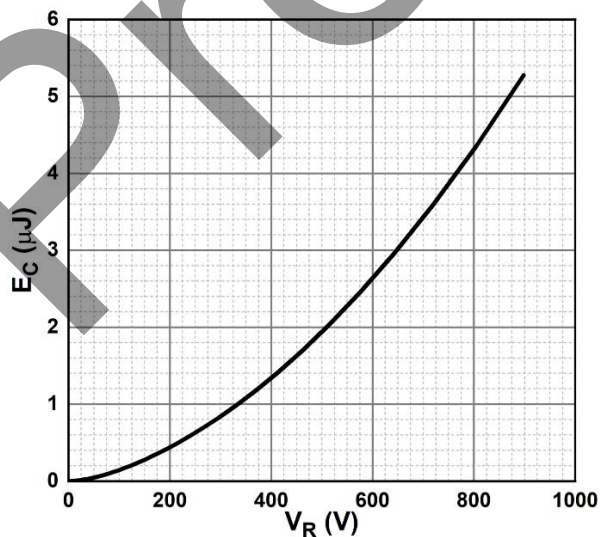
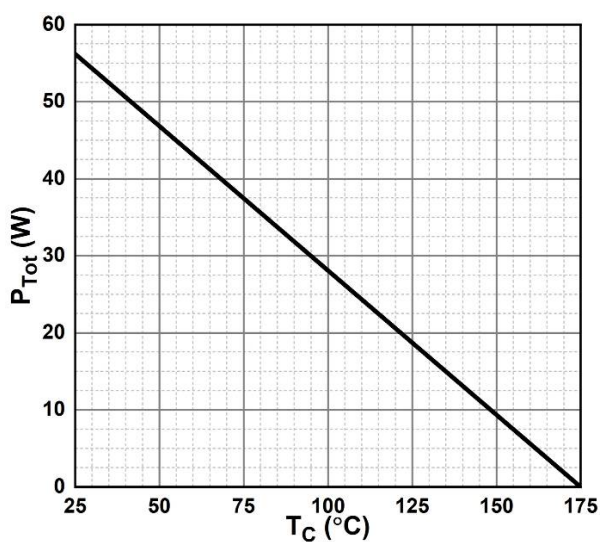


Figure 6. Power Derating



Curve Characteristics

Fig. 7 - Current Derating

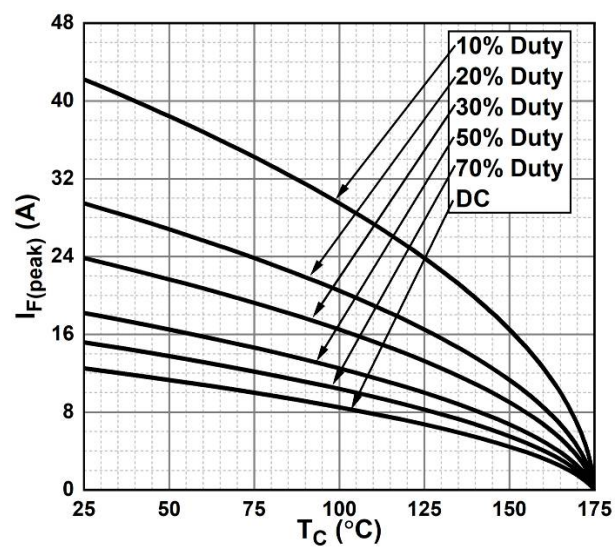
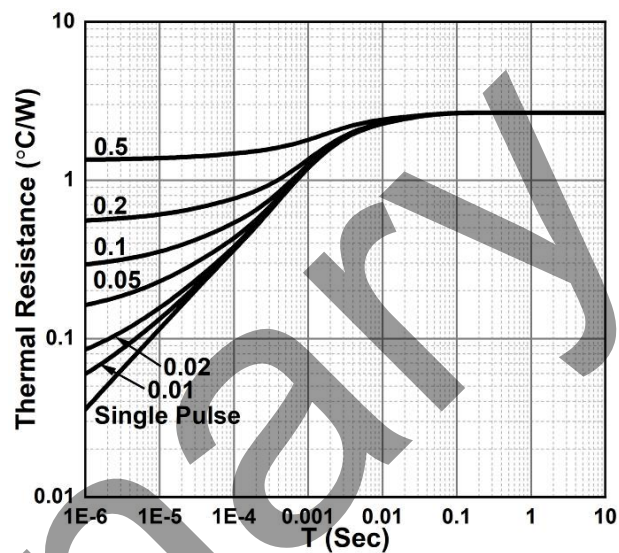


Fig. 8 - Transient Thermal Impedance



Ordering Information

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

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