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

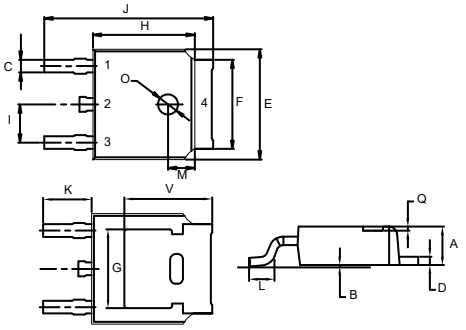
- Temperature-Independent Performance
- Essentially No Switching Loss
- Higher Efficiency
- Reduced EMI
- Reduction of Heat Sink Requirements

Applications

- Switching Power Supply
- Power Factor Correction
- Solar Inverter

5 Amp Silicon Carbide Schottky Barrier Rectifier 1200 Volts

DPAK



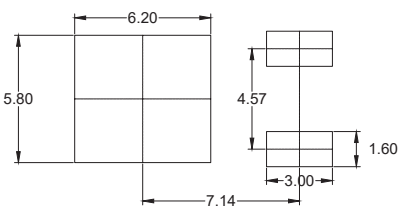
Maximum Ratings

Parameter	Symbol	Rating	Unit
Peak Repetitive Reverse Voltage@T_j=25°C	V_{RRM}	1200	V
Surge Peak Reverse Voltage@T_j=25°C	V_{RSM}	1200	V
DC Reverse Voltage@T_j=25°C	V_{DC}	1200	V
Continuous forward Current @T_C=25°C	I_F	18.2	A
Continuous forward Current @T_C=135°C	I_F	8.7	A
Continuous forward Current @T_C=159°C	I_F	5	A
Non-repetitive Peak Forward Surge Current @T_C=25°C, t_p=10ms, Half Sine Pulse	I_{FSM}	40	A
Power Dissipation @T_C=25°C	P_D	89	W
Power Dissipation @T_C=110°C	P_D	38	W
i^2t Value@ TC=25°C ,tp=10ms	$\int i^2dt$	8	A^2S

DIMENSIONS					
DIM	INCHES		MM		NOTE
	MIN	MAX	MIN	MAX	
A	0.087	0.094	2.20	2.40	
B	0.000	0.005	0.00	0.13	
C	0.026	0.034	0.66	0.86	
D	0.018	0.023	0.46	0.58	
E	0.256	0.264	6.50	6.70	
F	0.201	0.215	5.10	5.46	
G	0.190		4.83		TYP.
H	0.236	0.244	6.00	6.20	
I	0.086	0.094	2.18	2.39	
J	0.386	0.409	9.80	10.40	
K	0.114		2.90		TYP.
L	0.055	0.067	1.40	1.70	
M	0.063		1.60		TYP.
O	0.043	0.051	1.10	1.30	
Q	0.000	0.012	0.00	0.30	
V	0.211		5.35		TYP.

Suggested Solder Pad Layout

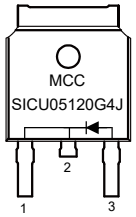
Unit:mm



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 Code: SICU05120G4J

Electrical Characteristics @ 25°C (Unless Otherwise Specified)

Parameter	Symbol	Conditions	Typ.	Max.	Units
Forward Voltage	V_F	I_F=5A, T_J=25°C	1.38	1.60	V
		I_F=5A, T_J=175°C	1.9		V
Reverse Leakage Current	I_R	V_R=1200V, T_J=25°C	0.5	25	μA
		V_R=1200V, T_J=175°C	5		μA
Total Capacitive Charge	Q_C	V_R=800V	29		nC
Total capacitance	C	V_R=0V, f=1MHz	383		pF
		V_R=400V, f=1MHz	27		pF
		V_R=800V, f=1MHz	20		pF
Capacitance Stored Energy	E_C	V_R=800V	7.4		μJ

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}		1.68		°C/W

Curve Characteristics

Figure 1. Forward Characteristics

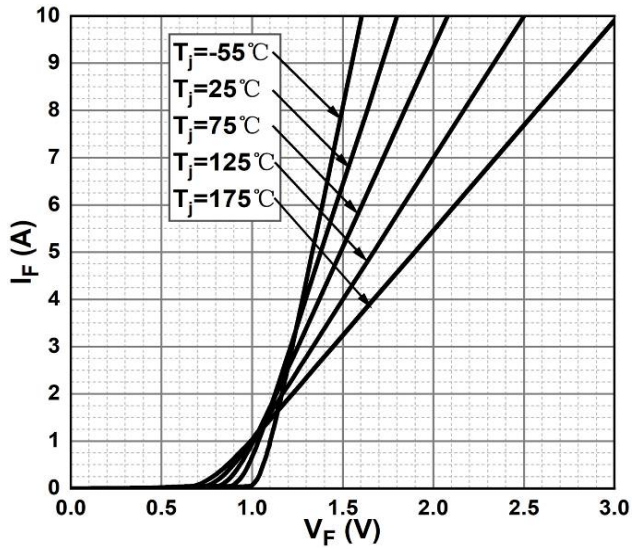


Figure 2. Reverse Characteristics

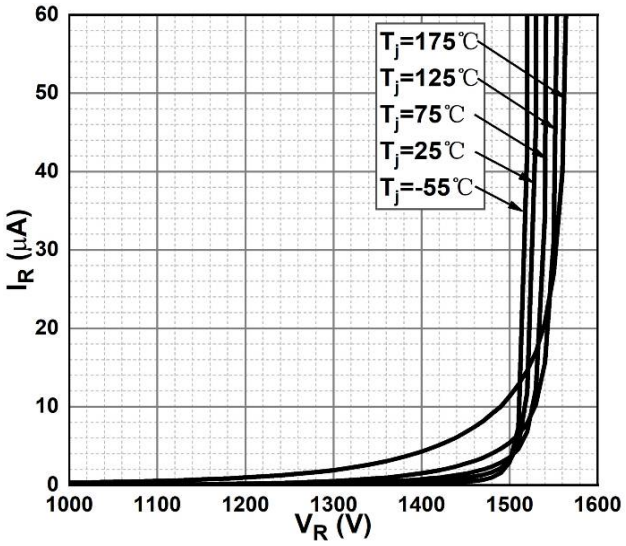


Figure 3. Capacitance vs. Reverse Voltage

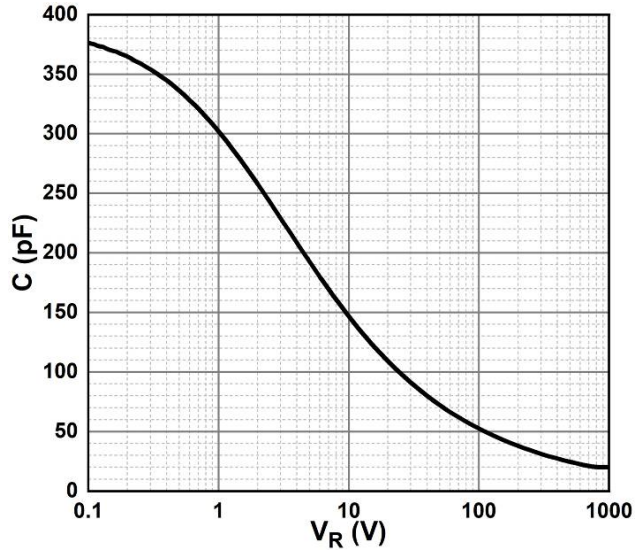


Figure 4. Total Capacitance Charge vs. Reverse Voltage

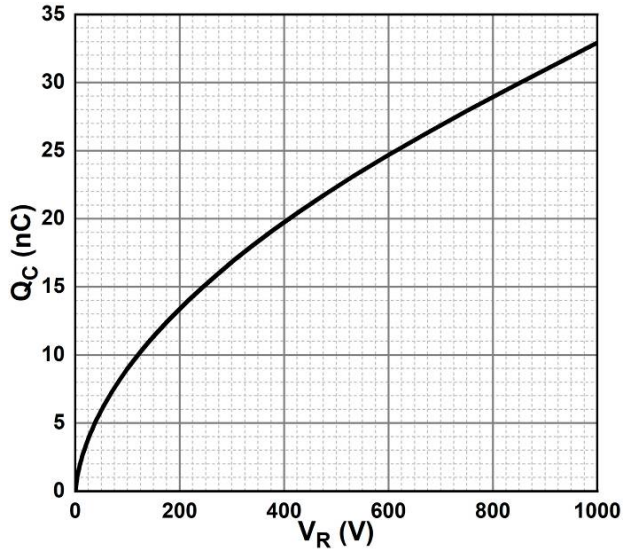


Figure 5. Capacitance Stored Energy

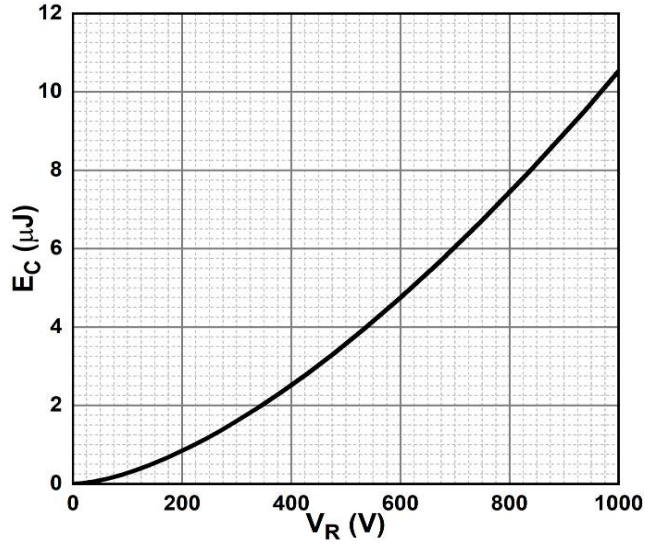
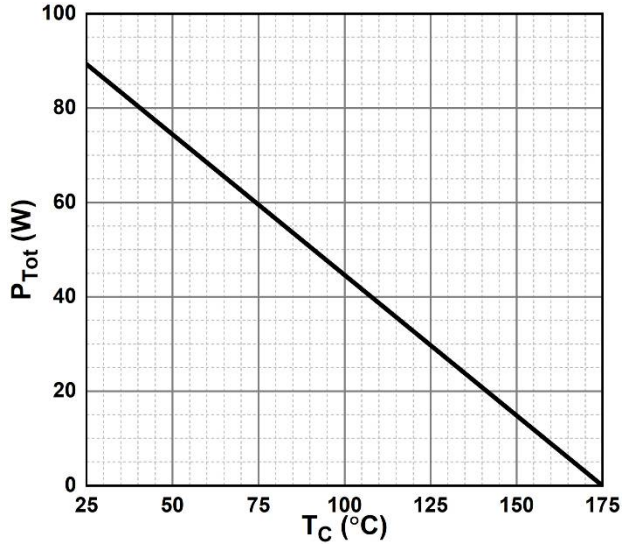


Figure 6. Power Derating



Curve Characteristics

Figure 7. Current Derating

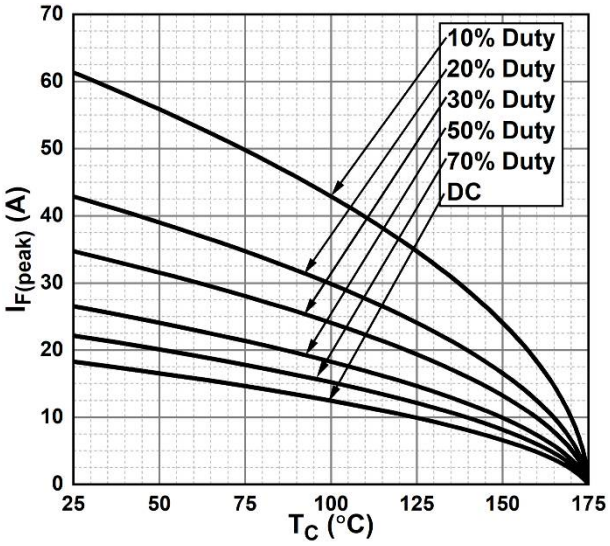
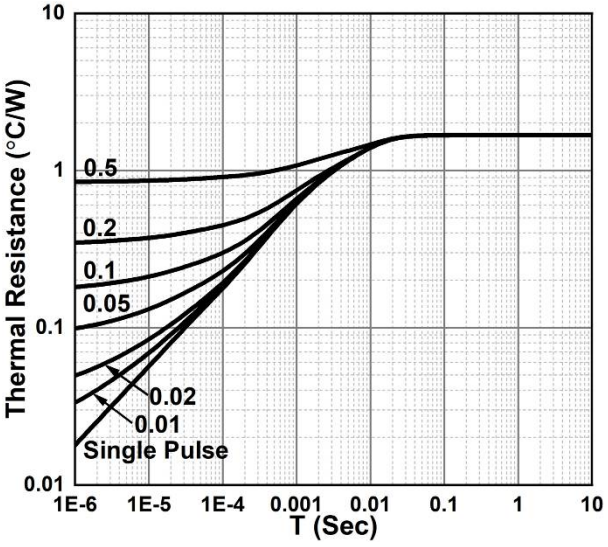


Figure 8. Transient Thermal Impedance



Ordering Information

Device	Packing
Part Number-TP	Tape&Reel: 2.5Kpcs/Reel