

### 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 1) ("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: 1.23°C/W Junction to Case

MCC Part Number	Device Marking
SICU0860P	SICU0860P

Peak Repetitive Reverse Voltage	$V_{RRM}$	650V	
Surge Peak Reverse Voltage	$V_{RSM}$	650V	
DC Reverse Voltage	$V_{DC}$	650V	
Average Forward Current	$I_F$	8A	$T_J=153^{\circ}C$
Peak Forward Surge Current	$I_{FSM}$	39A	$T_C=25^{\circ}C, t_p=10ms,$ Half Sine Pulse
Power Dissipation	$P_D$	122W	$T_C=25^{\circ}C$

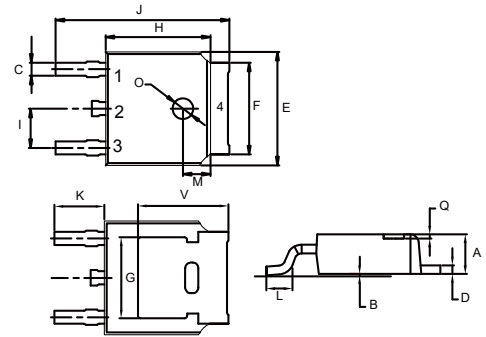
Note:1. High Temperature Solder Exemptions Applied, see EU Directive Annex 7a.

### Internal Structure:



# 8Amp Silicon Carbide Schottky Barrier Rectifier 650 Volts

## DPAK(TO-252)



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.

**Electrical Characteristics @ 25°C (Unless Otherwise Specified)**

Parameter	Symbol	Conditions	Typ.	Max.	Units
Forward Voltage	$V_F$	$I_F=8A, T_J=25^\circ C$	1.39	1.6	V
		$I_F=8A, T_J=175^\circ C$	1.65		V
Reverse Leakage Current	$I_R$	$V_R=650V, T_J=25^\circ C$	10.2	36	$\mu A$
		$V_R=650V, T_J=175^\circ C$	301		$\mu A$
Total Capacitive Charge	$Q_C$	$V_R=400V$	19.6		nC
Total capacitance	C	$V_R=0V, f=1MHz$	346		pF
		$V_R=200V, f=1MHz$	39		pF
		$V_R=400V, f=1MHz$	30		pF
Capacitance Stored Energy	$E_C$	$V_R=400V$	2.42		$\mu J$

## Curve Characteristics

Fig. 1 - Typical Forward Characteristics

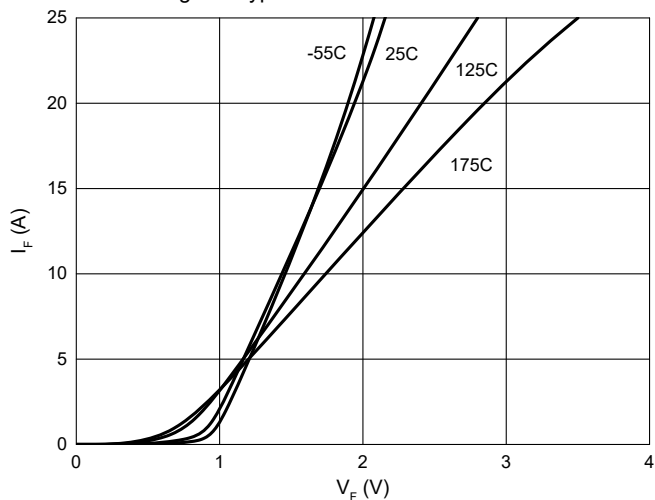


Fig. 2 - Typical Reverse Leakage Characteristics

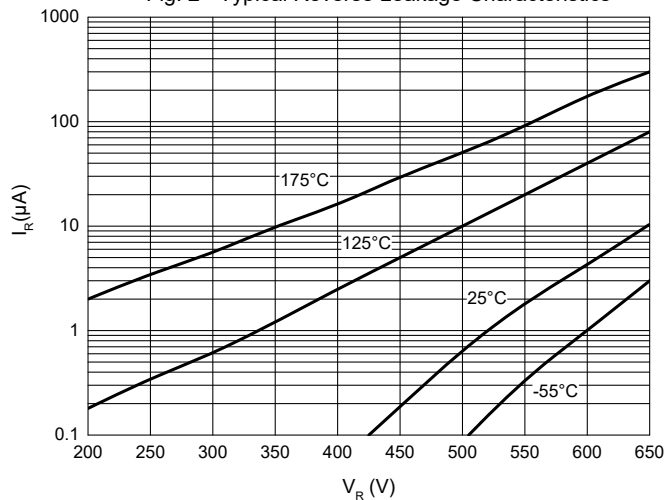


Fig. 3 - Capacitance vs Reverse Voltage

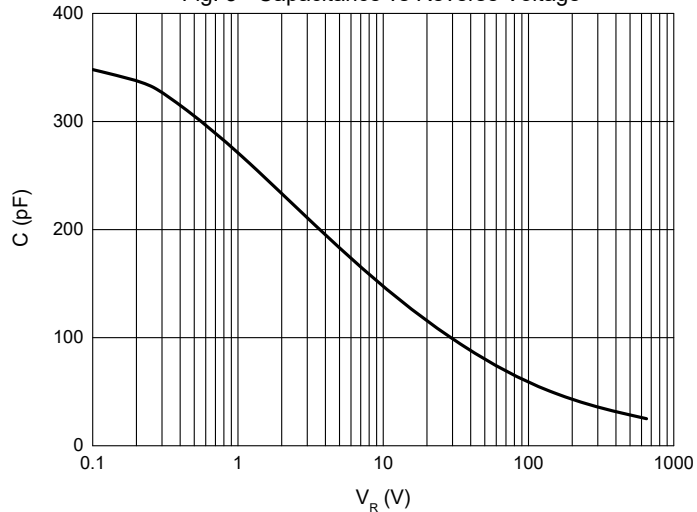


Fig. 4 - Typical Power Derating

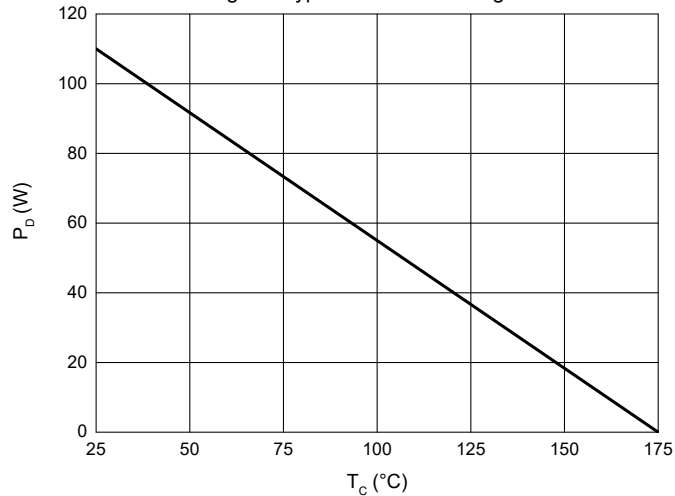
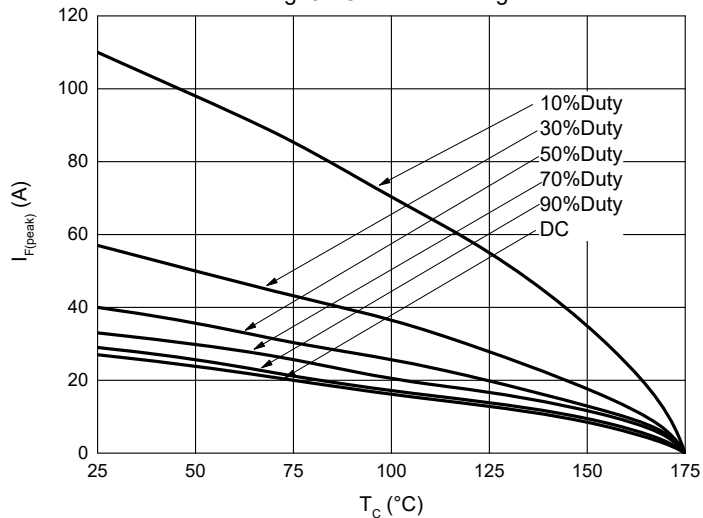


Fig. 5 - Current Derating



## Ordering Information

Device	Packing
SICU0860P-TP	Tape&Reel: 2.5Kpcs/Reel

Note : Adding "-HF" Suffix for Halogen Free, eg. Part Number-TP-HF

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