

Features

- Zero Forward Recovery Voltage
- Positive Temperature Coefficient
- High-Frequency Operation
- 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

Applications

- Switching Power Supply
- Power Factor Correction
- Solar Inverter

Maximum Ratings

- Operating Junction Temperature Range: -55°C to +175°C
- Storage Temperature Range: -55°C to +175°C
- Thermal Resistance: 0.79°C/W Junction to Case

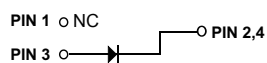
MCC Part Number	Device Marking
SICU10120Y	SICU10120Y

Peak Repetitive Reverse Voltage	V_{RRM}	1200V	
Surge Peak Reverse Voltage	V_{RSM}	1200V	
DC Reverse Voltage	V_{DC}	1200V	
Average Forward Current	I_F	10A	$T_C=159^\circ\text{C}$
Non-repetitive Peak Forward Surge Current	I_{FSM}	85A	$T_C=25^\circ\text{C}$, $t_p=10\text{ms}$, Half Sine Wave
i^2t Value	$\int i^2 dt$	36 A ² S	$T_C=25^\circ\text{C}$, $t_p=10\text{ms}$,
Power Dissipation	P_D	189W	$T_C=25^\circ\text{C}$

Note:

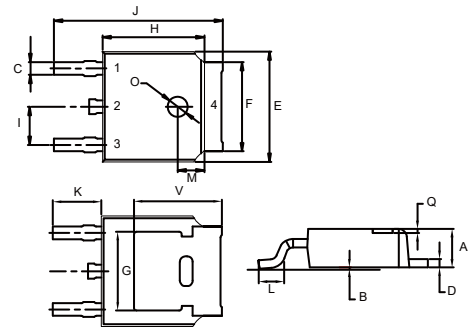
1. Halogen free "Green" products are defined as those which contain <900ppm bromine, <900ppm chlorine (<1500ppm total Br + Cl) and <1000ppm antimony compounds.
2. High Temperature Solder Exemptions Applied, see EU Directive Annex 7a.

Internal Structure:



**10 Amp
Silicon Carbide
Schottky Barrier
Rectifier
1200 Volts**

DPAK



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	$I_F=10A, T_J=25^{\circ}C$	1.42	1.54	V
		$I_F=10A, T_J=175^{\circ}C$	2.1		V
Reverse Leakage Current	I_R	$V_R=1200V, T_J=25^{\circ}C$	1.3	13	μA
		$V_R=1200V, T_J=175^{\circ}C$	6		μA
Total Capacitive Charge	Q_C	$V_R=800V$	53		nC
Total capacitance	C	$V_R=0V, f=1MHz$	700		pF
		$V_R=400V, f=1MHz$	49		pF
		$V_R=800V, f=1MHz$	39		pF
Capacitance Stored Energy	E_C	$V_R=800V$	14		μJ

Curve Characteristics

Fig. 1 - Typical Forward Characteristics

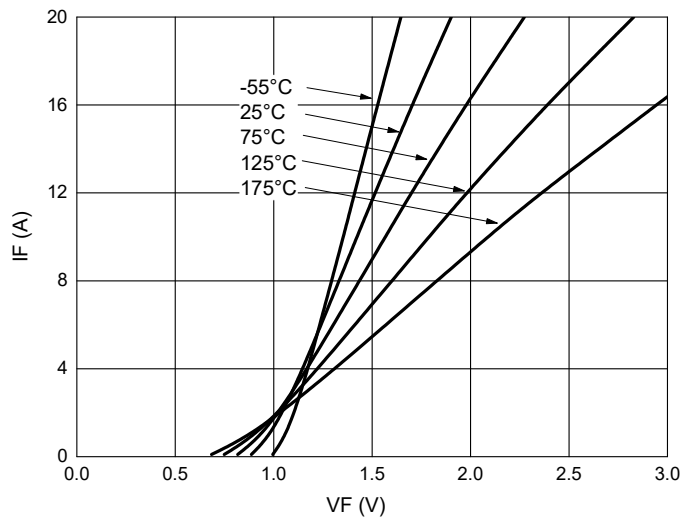


Fig. 2 - Typical Reverse Leakage Characteristics

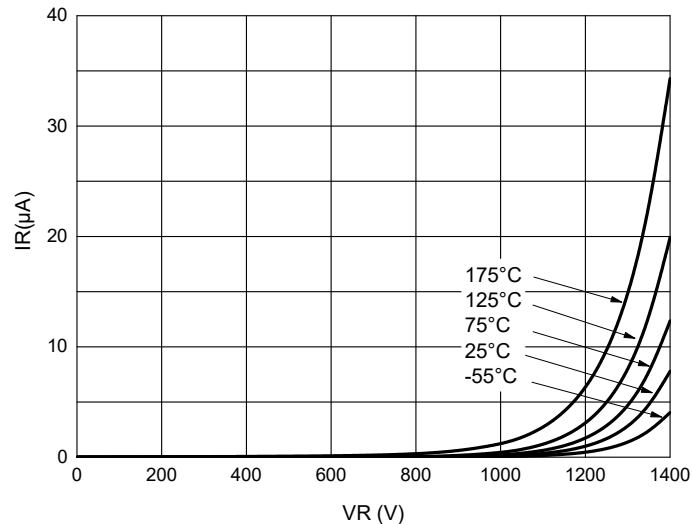


Fig. 3 - Capacitance vs Reverse Voltage

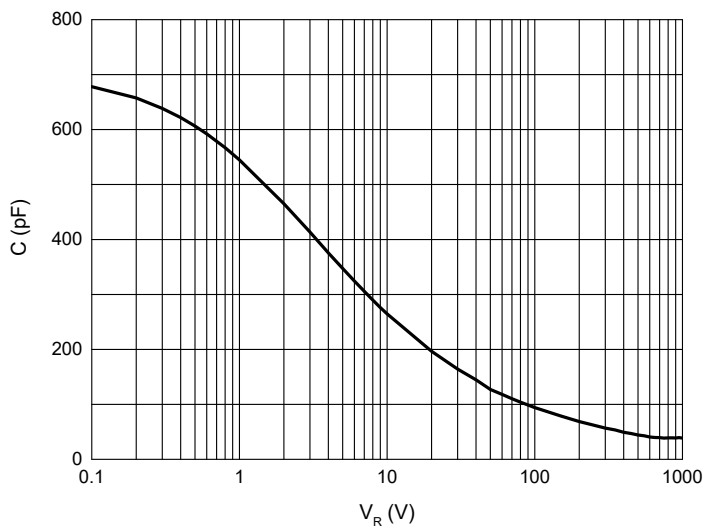


Fig. 4 - Current Derating

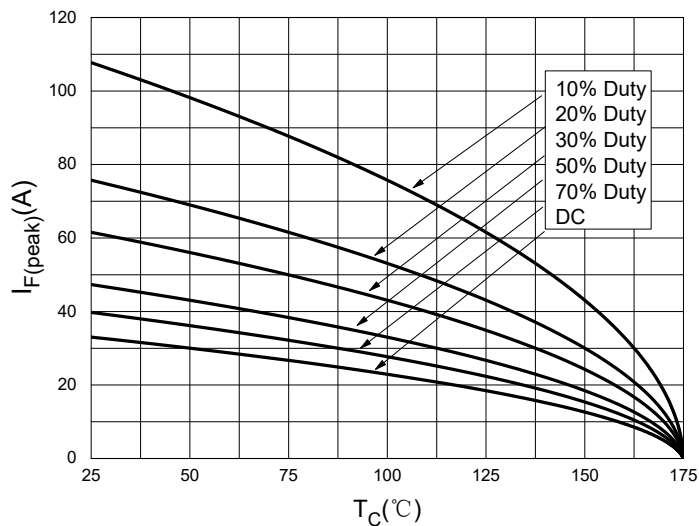


Fig. 5 - Capacitive Charge vs Reverse Voltage

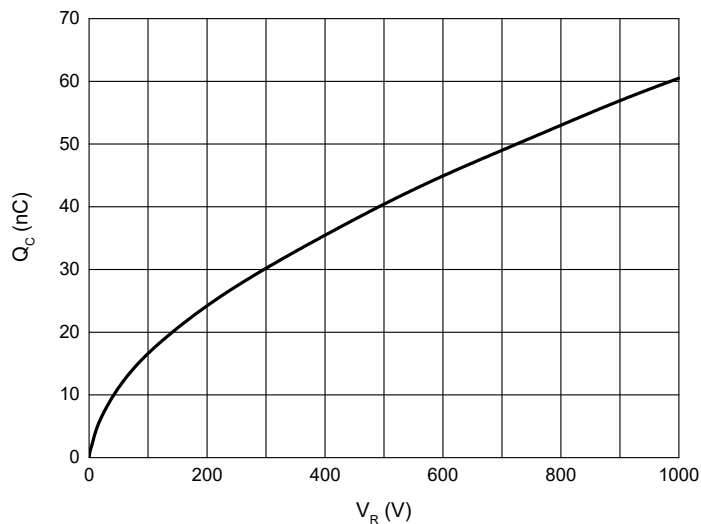
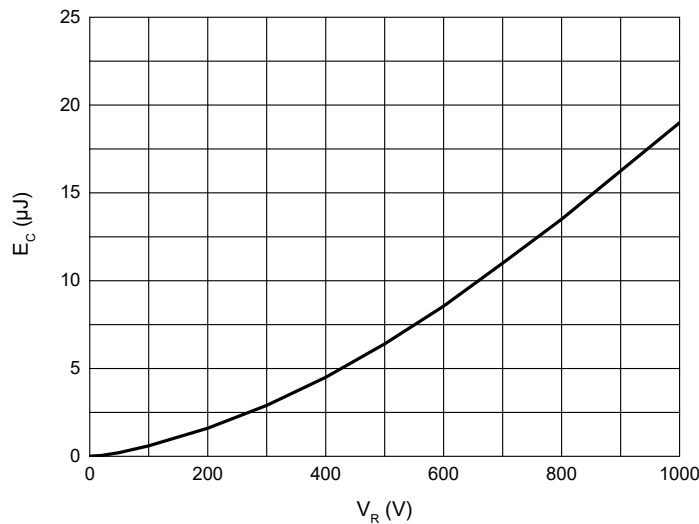


Fig. 6 - Capacitance Stored Energy



Curve Characteristics

Fig. 7 - Power Derating

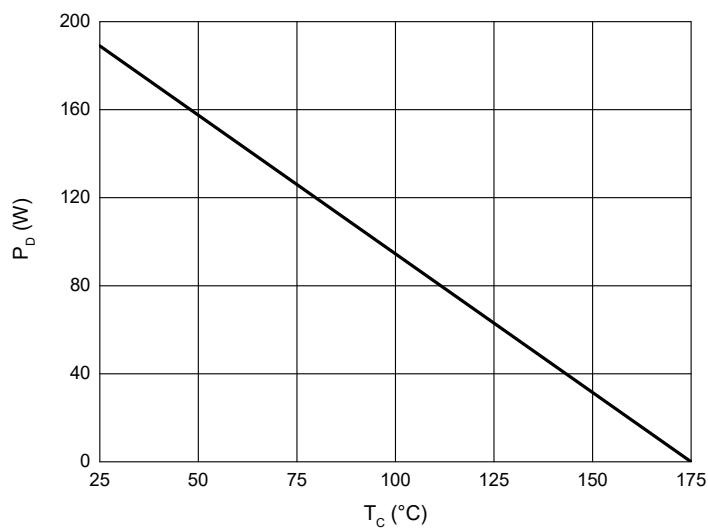
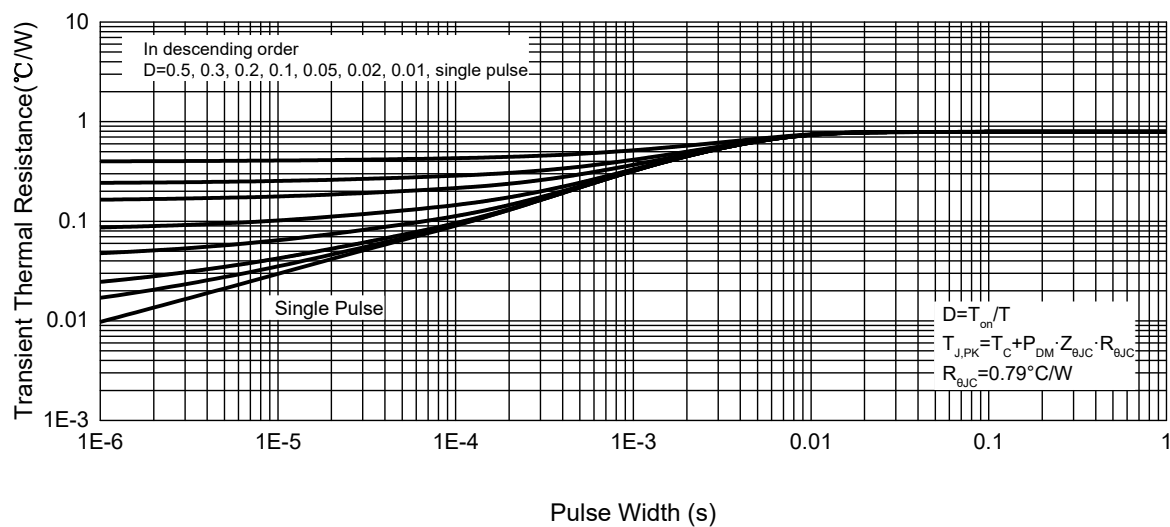


Fig. 8 - Transient Thermal Impedance



Ordering Information

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

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