20Amp Silicon Carbide Schottky Barrier Rectifier 650 Volts

Features

- Zero Reverse Recovery Current
- Positive Temperature Coefficient
- High-Frequency Operation
- 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: 1.34°C/W Junction to Case (Per Leg)
- Thermal Resistance: 0.65°C/W Junction to Case (Device)

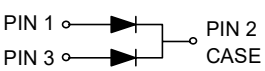
MCC Part Number	Device Marking
SICPT2060DY	SICPT2060DY

Peak Repetitive Reverse Voltage	V_{RRM}	650V	
Surge Peak Reverse Voltage	V_{RSM}	650V	
DC Reverse Voltage	V_{DC}	650V	
Average Forward Current (Per Leg/Device)	I_F	10A/20A	T_c=150°C
Non-repetitive Peak Forward Surge Current (Per Leg)	I_{FSM}	70A	T_C=25°C, t_p=10ms, Half Sine Pulse
Power Dissipation (Per Leg)	P_D	112W	T_C=25°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:



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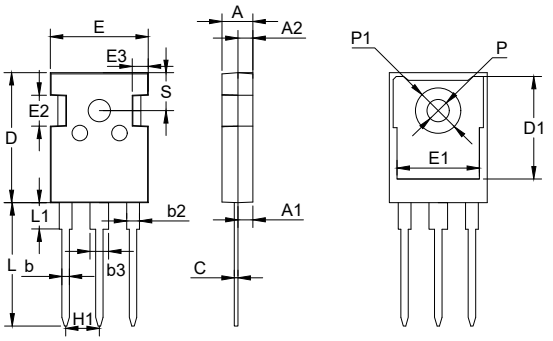


DIMENSIONS					
DIM	INCHES		MM		NOTE
	MIN	MAX	MIN	MAX	
A	0.189	0.205	4.80	5.20	
A1	0.087	0.103	2.21	2.61	
A2	0.073	0.085	1.85	2.15	
b	0.039	0.055	1.00	1.40	
b2	0.075	0.087	1.91	2.21	
C	0.020	0.028	0.50	0.70	
D	0.815	0.839	20.70	21.30	
D1	0.640	0.663	16.25	16.85	
E	0.610	0.634	15.50	16.10	
E1	0.512	0.535	13.00	13.60	
E2	0.189	0.205	4.80	5.20	
E3	0.091	0.106	2.30	2.70	
L	0.772	0.796	19.62	20.22	
L1	-	0.169	-	4.30	
P	0.134	0.150	3.40	3.80	Φ
P1		0.287	-	7.30	Φ
S	0.242		6.15		TYP
H1	0.214		5.44		TYP
b3	0.110	0.126	2.80	3.20	

Electrical Characteristics @ 25°C (Unless Otherwise Specified) (Per Leg)

Parameter	Symbol	Conditions	Typ.	Max.	Units
Forward Voltage	V_F	I_F=10A, T_J=25°C	1.35	1.55	V
		I_F=10A, T_J=175°C	1.80		V
Reverse Leakage Current	I_R	V_R=650V, T_J=25°C	0.5	25	μA
		V_R=650V, T_J=175°C	2		μA
Total Capacitive Charge	Q_C	V_R=400V	30		nC
Total capacitance	C	V_R=0V, f=1MHz	543		pF
		V_R=200V, f=1MHz	55		pF
		V_R=400V, f=1MHz	52		pF
Capacitance Stored Energy	E_C	V_R=400V	3.7		μJ

Curve Characteristics (Per Leg)

Fig. 1 - Typical Forward Characteristics

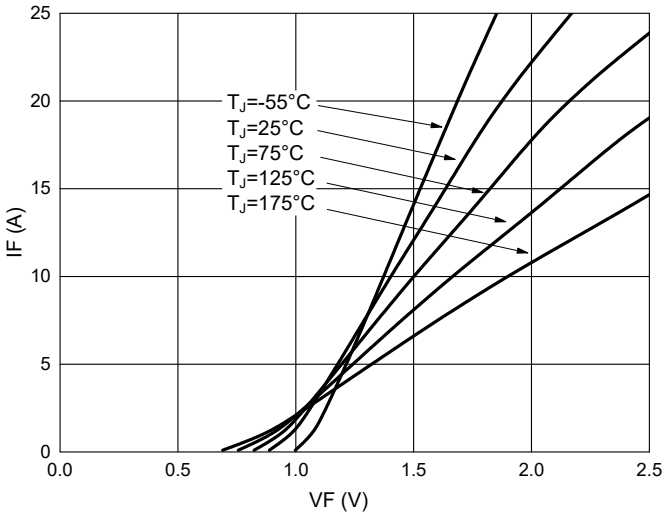


Fig. 2 - Typical Reverse Leakage Characteristics

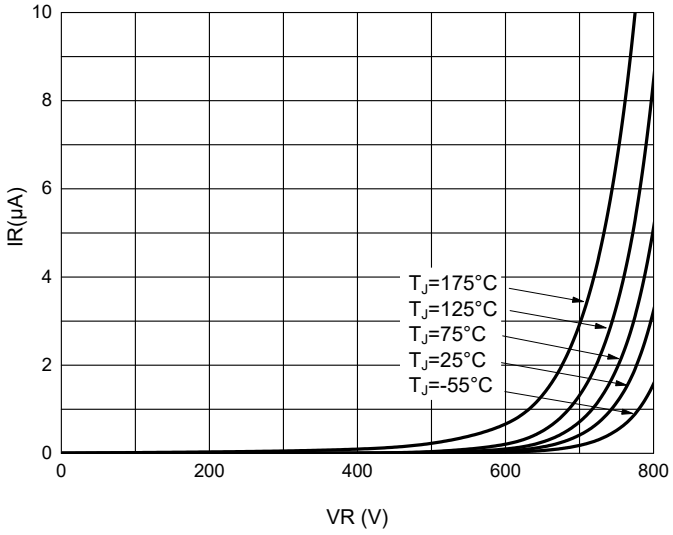


Fig. 3 - Capacitance vs Reverse Voltage

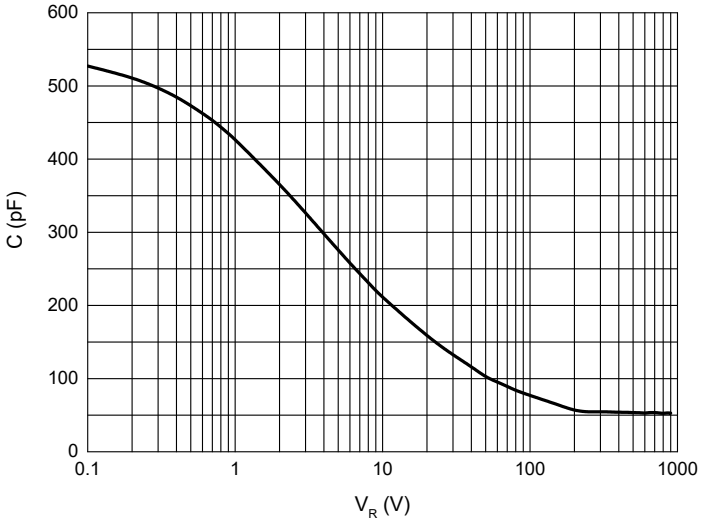


Fig. 4 - Typical Power Derating

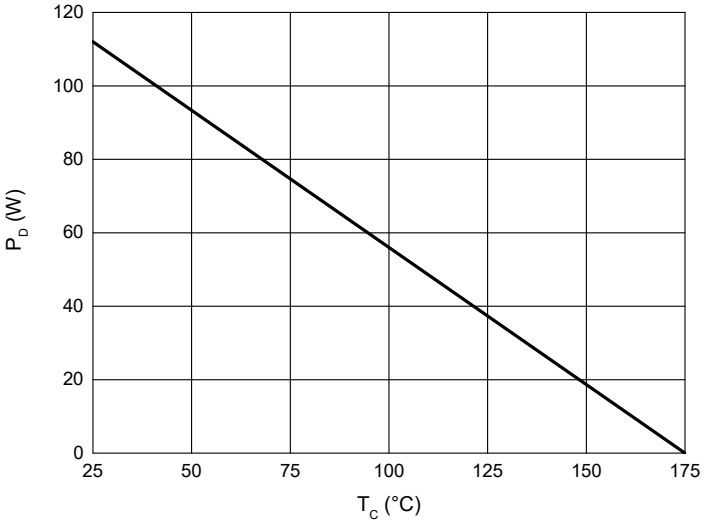


Fig. 5 - Capacitive Charge vs Reverse Voltage

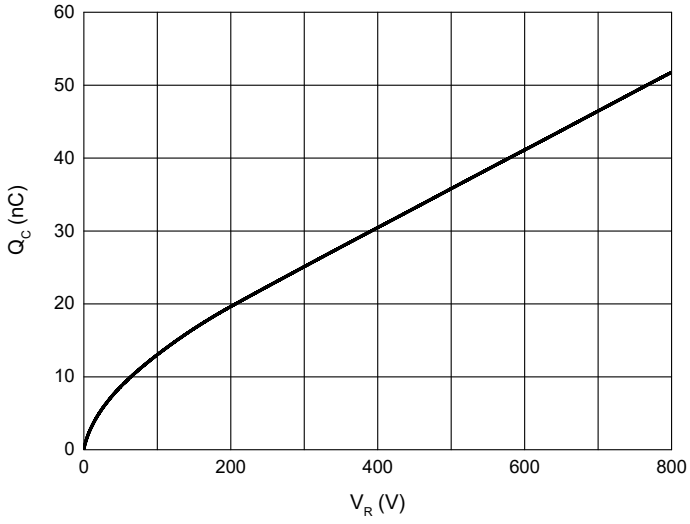
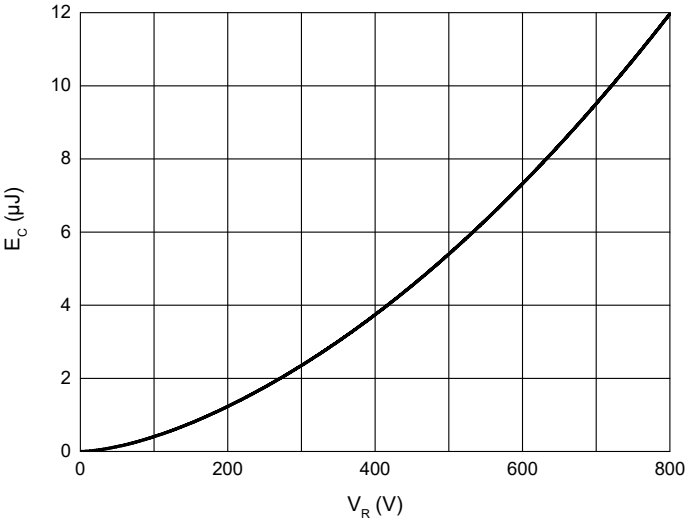
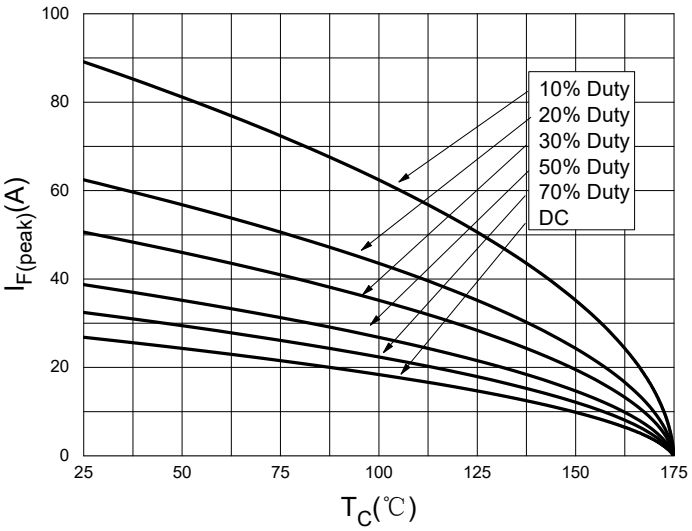


Fig. 6 - Capacitance Stored Energy



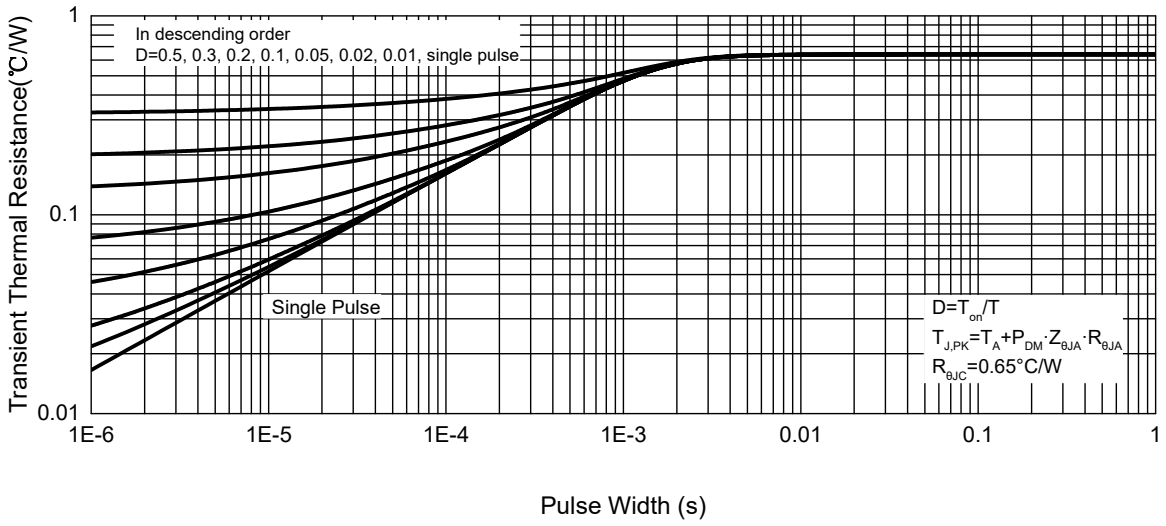
Curve Characteristics (Per Leg)

Fig. 7 - Current Derating



Curve Characteristics (Device)

Fig. 8 - Transient Thermal Impedance



Ordering Information

Device	Packing
SICPT2060DY-BP	Bulk: 360pcs/Box