

Features

- Zero Forward Recovery Voltage
- 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 2) ("P" Suffix designates RoHS Compliant. See ordering information)

Benefits

- Temperature-Independent Performance
- Essentially No Switching Losses
- Low Heat Dissipation Requirements

Applications

- Switching Power Supply
- Power Factor Correction
- Motor Drive, Traction
- Charging Pile

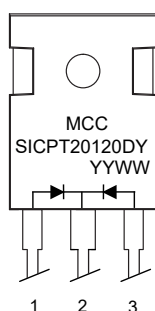
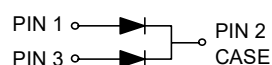
Maximum Ratings

Parameter	Symbol	Rating	Unit
Peak Repetitive Reverse Voltage@ $T_j=25^{\circ}\text{C}$	V_{RRM}	1200	V
Surge Peak Reverse Voltage@ $T_j=25^{\circ}\text{C}$	V_{RSM}	1200	V
DC Reverse Voltage@ $T_j=25^{\circ}\text{C}$	V_{DC}	1200	V
Continuous forward Current (Per Leg/Device)	@ $T_c=25^{\circ}\text{C}$	27/54	A
	@ $T_c=135^{\circ}\text{C}$	13/26	
	@ $T_c=152^{\circ}\text{C}$	10/20	
Non-repetitive Peak Forward Surge Current (Per Leg/Device)@ $T_c=25^{\circ}\text{C}$, $t_p=10\text{ms}$, Half Sine Pulse	I_{FSM}	85	A
Power Dissipation (Per Leg/Device)	@ $T_c=25^{\circ}\text{C}$	136/267	W
	@ $T_c=110^{\circ}\text{C}$	58.9/115	

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.

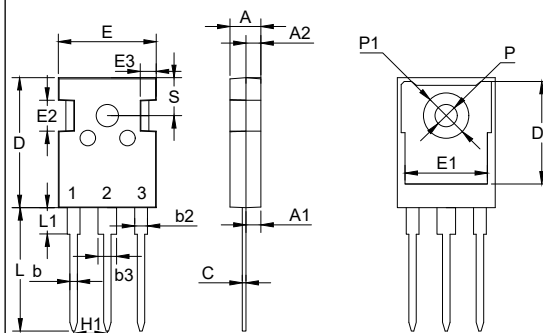
Internal Structure:



Device Code: SICPT20120DY
Date Code: YYWW (Year & Week)

20Amp Silicon Carbide Schottky Barrier Rectifier 1200 Volts

TO-247AB



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)

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

Thermal characteristics

Parameter	Symbol	Min	Typ	Max	Units
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 (Per Leg)	$R_{th_{J-C}}$		1.1		$^{\circ}C/W$
Thermal Resistance from Junction to Case (Device)	$R_{th_{J-C}}$		0.53		$^{\circ}C/W$

Curve Characteristics (Per Leg)

Fig. 1 - Typical Forward Characteristics

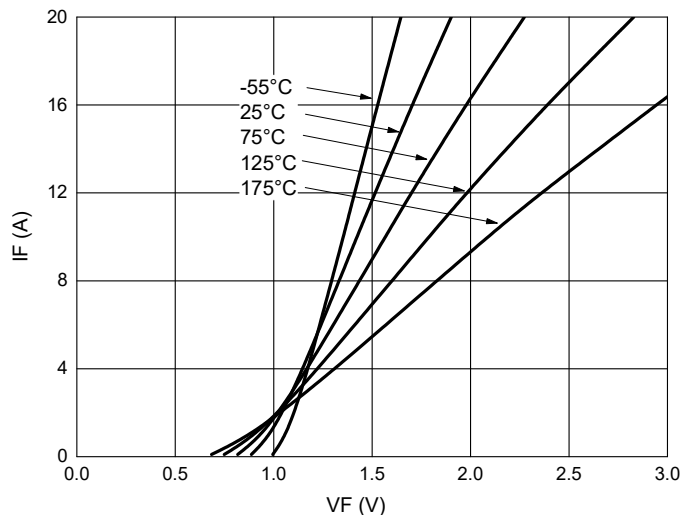


Fig. 2 - Typical Reverse Leakage Characteristics

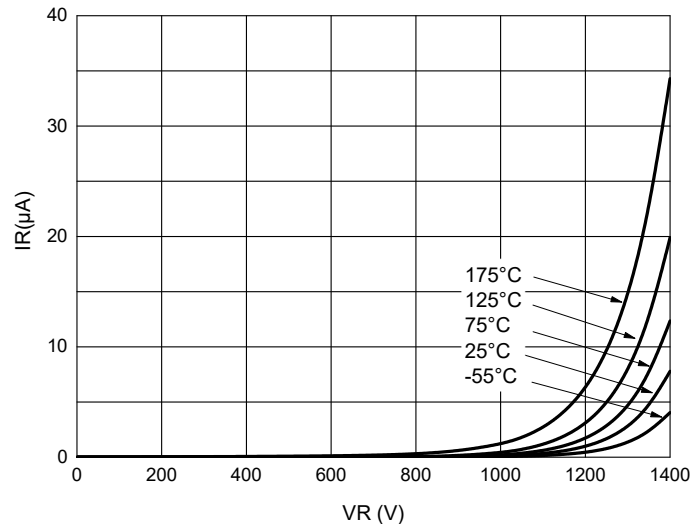


Fig. 3 - Capacitance vs Reverse Voltage

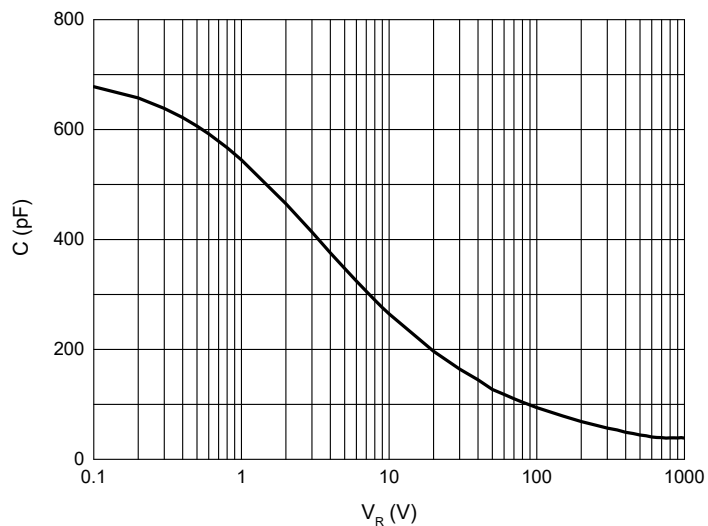


Fig. 4 - Current Derating

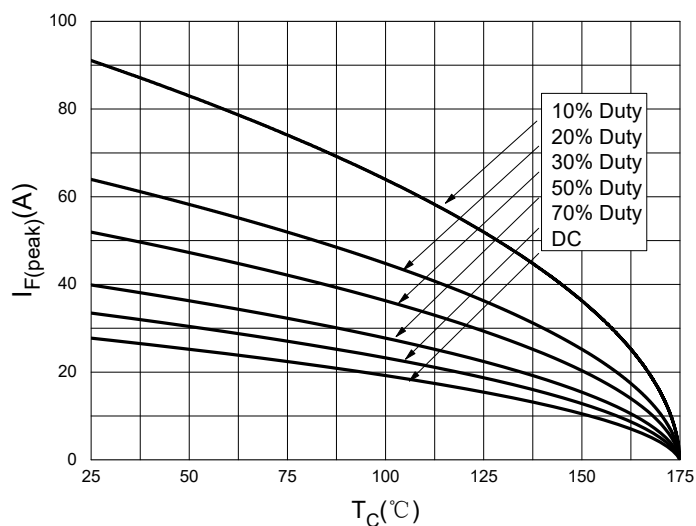


Fig. 5 - Capacitive Charge vs Reverse Voltage

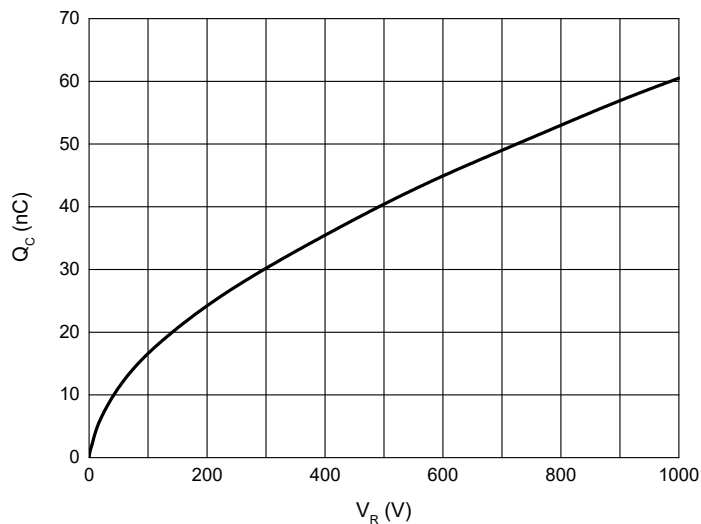
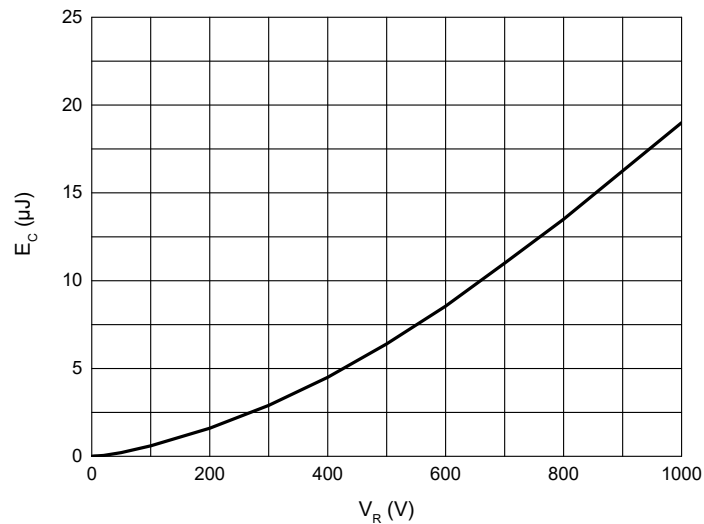


Fig. 6 - Capacitance Stored Energy



Curve Characteristics

Fig. 7 - Power Derating (Per Leg)

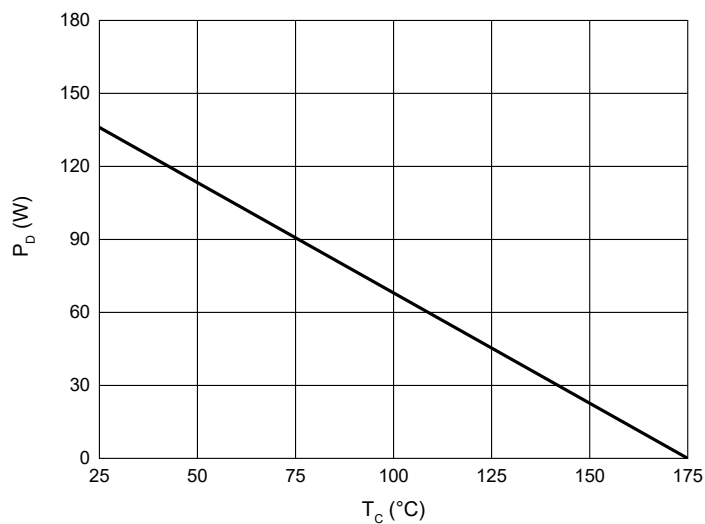
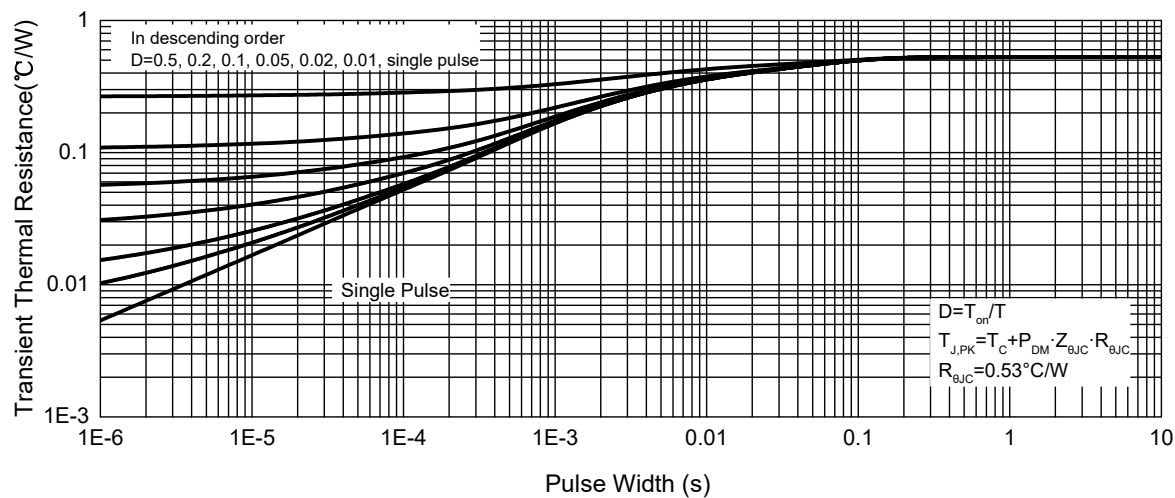


Fig. 8 - Transient Thermal Impedance (Per Device)



Ordering Information

Device	Packing
SICPT20120DY-BP	Bulk: 30pcs/Tube, 360pcs/Box, 1800pcs/Carton

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