

**Features**

- Zero Reverse Recovery Current
- Positive Temperature Coefficient
- High-Speed Switching
- 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: 0.38°C/W Junction to Case

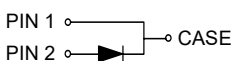
MCC Part Number	Device Marking
SICPT30120	SICPT30120

Peak Repetitive Reverse Voltage	$V_{RRM}$	1200V	
Surge Peak Reverse Voltage	$V_{RSM}$	1200V	
DC Reverse Voltage	$V_{DC}$	1200V	
Average Forward Current	$I_F$	30A	$T_J=149^\circ\text{C}$
Peak Forward Surge Current	$I_{FSM}$	240A	$T_C=25^\circ\text{C}$ , $t_p=10\text{ms}$ , Half Sine Pulse
Power Dissipation	$P_D$	394W	$T_C=25^\circ\text{C}$

Note:1. Halogen free "Green" products are defined as those which contain <900ppm bromine, <900ppm chlorine (<1500ppm total Br + Cl) and <1000ppm antimony compounds.

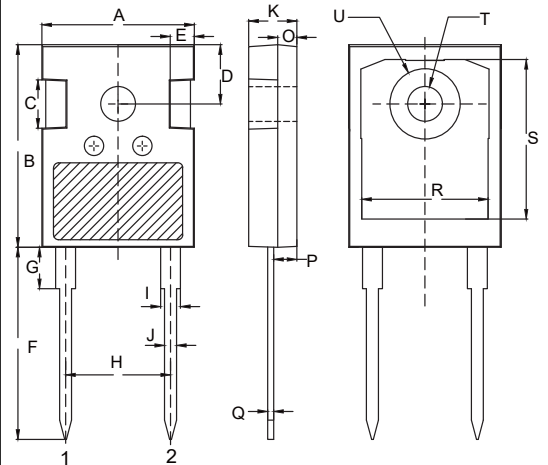
2. High Temperature Solder Exemptions Applied, see EU Directive Annex 7a.

**Internal Structure:**



**30Amp  
Silicon Carbide  
Schottky Barrier  
Rectifier  
1200 Volts**

**TO-247AD**



DIM	DIMENSIONS				NOTE
	INCHES		MM		
	MIN	MAX	MIN	MAX	
A	0.610	0.663	15.50	16.85	
B	0.815	0.839	20.70	21.30	
C	0.189	0.205	4.80	5.20	
D	0.242		6.15		BSC.
E	0.091	0.106	2.30	2.70	
F	0.772	0.796	19.62	20.22	
G	----	0.169	----	4.30	
H	0.428		10.88		BSC.
I	0.075	0.087	1.91	2.21	
J	0.044	0.054	1.11	1.36	
K	0.189	0.205	4.80	5.20	
O	0.073	0.085	1.85	2.15	
P	0.087	0.103	2.21	2.61	
Q	0.020	0.030	0.51	0.75	
R	0.512	0.535	13.00	13.60	
S	0.640	0.663	16.25	16.85	
T	0.134	0.150	3.40	3.80	Φ
U	----	0.287	----	7.30	Φ

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

Parameter	Symbol	Conditions	Typ.	Max.	Units
Forward Voltage	$V_F$	$I_F=30A, T_J=25^\circ C$	1.54	1.7	V
		$I_F=30A, T_J=175^\circ C$	2.31	2.7	V
Reverse Leakage Current	$I_R$	$V_R=1200V, T_J=25^\circ C$	1	60	$\mu A$
		$V_R=1200V, T_J=175^\circ C$	40		$\mu A$
Total Capacitive Charge	$Q_C$	$V_R=800V$	153		nC
Total capacitance	C	$V_R=0V, f=1MHz$	2259		pF
		$V_R=400V, f=1MHz$	143		pF
		$V_R=800V, f=1MHz$	103		pF
Capacitance Stored Energy	$E_C$	$V_R=800V$	39.5		$\mu J$

**Curve Characteristics**

Fig. 1 - Typical Forward Characteristics

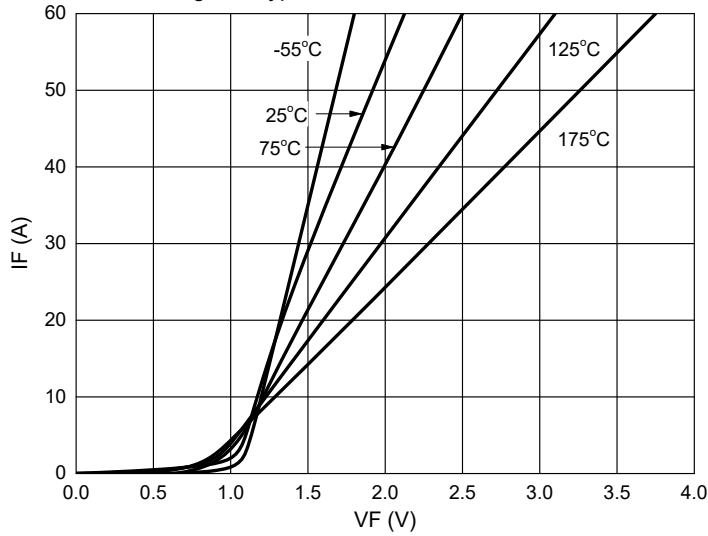


Fig. 2 - Typical Reverse Leakage Characteristics

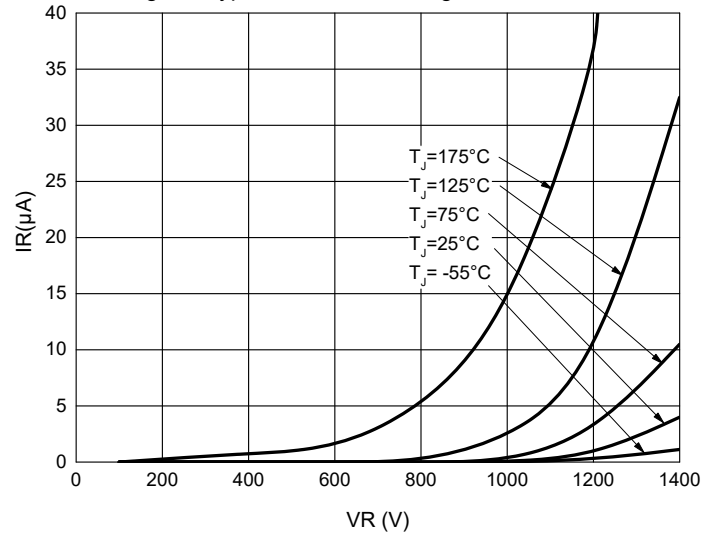


Fig. 3 - Capacitance vs Reverse Voltage

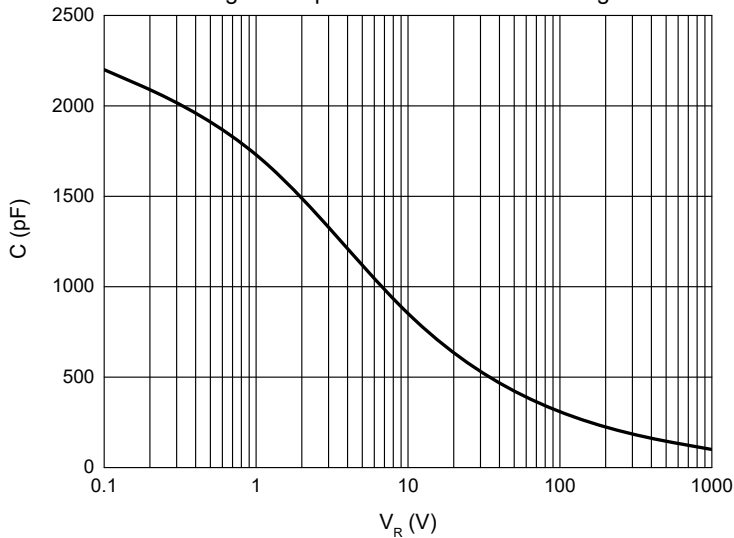


Fig. 4 - Typical Power Derating

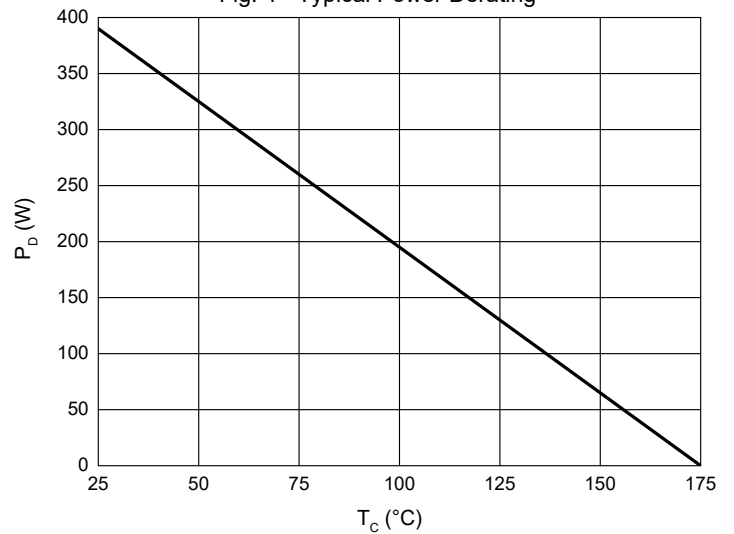


Fig. 5 - Capacitive Charge vs Reverse Voltage

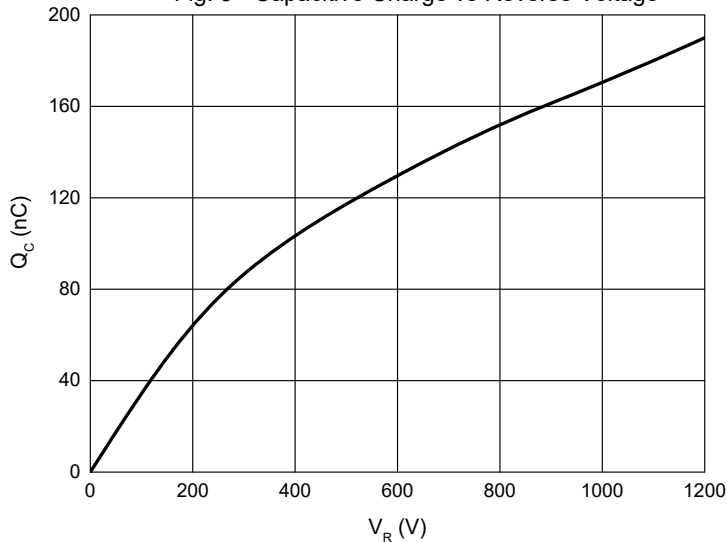
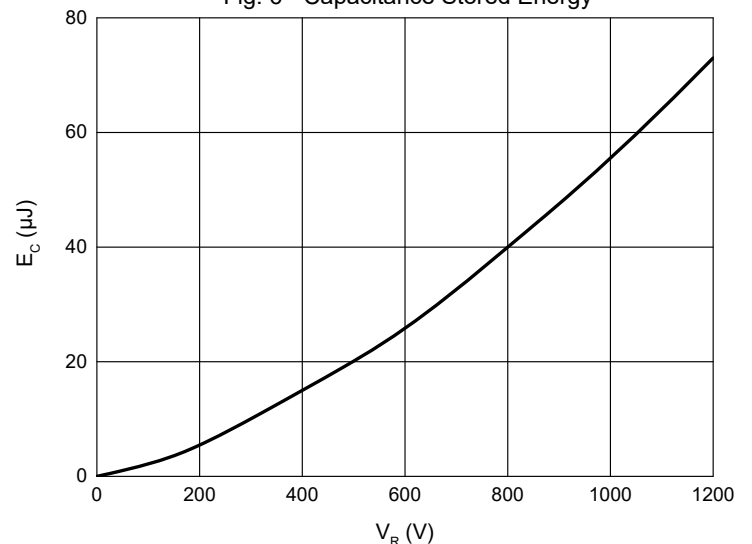
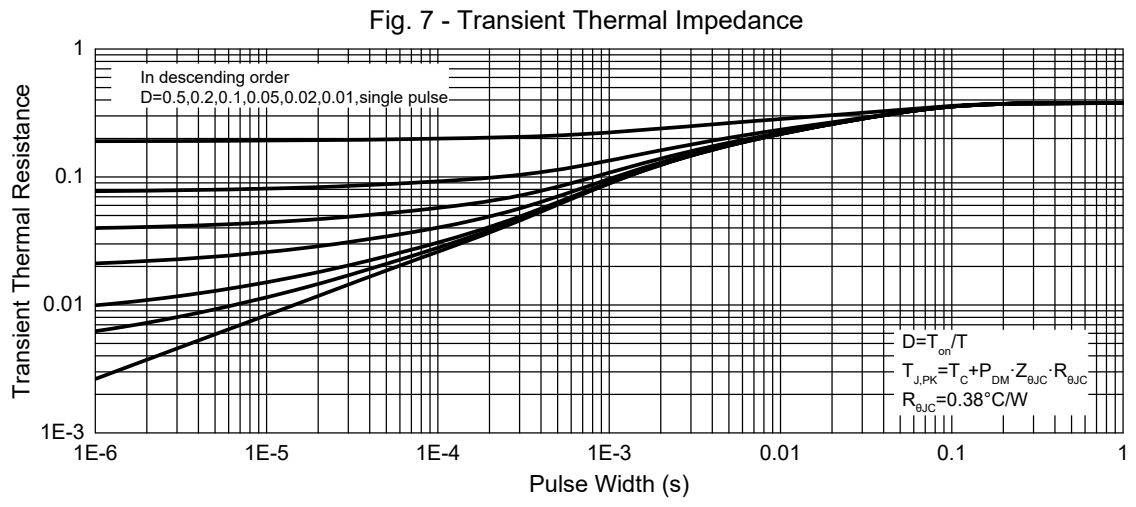


Fig. 6 - Capacitance Stored Energy



Curve Characteristics



## Ordering Information

Device	Packing
SICPT30120-BP	Bulk: 30pcs/Tube

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