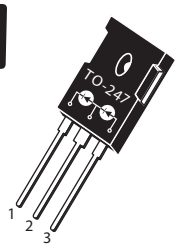
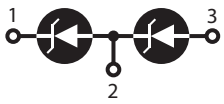
APT20SCD120BHB

1200V 20A

Zero Recovery Silicon Carbide Schottky Diode





1 - Cathode 1
2 - Anode 1
Cathode 2
3 - Anode 2

PRODUCT APPLICATIONS

- **Anti-Parallel Diode**
  - **Switchmode Power Supply**
  - **Inverters**
- **Power Factor Correction (PFC)**

PRODUCT FEATURES

- **Zero Recovery Time (t_{rr})**
- **Popular TO-247 Package**
- **Low Forward Voltage**
- **Low Leakage Current**

PRODUCT BENEFITS

- **Higher Reliability Systems**
- **Minimizes or eliminates snubber**

MAXIMUM RATINGS

T_C = 25°C unless otherwise specified.

Symbol	Characteristic / Test Conditions		Ratings	Unit
V_R	Maximum D.C. Reverse Voltage		1200	Volts
V_{RRM}	Maximum Peak Repetitive Reverse Voltage			
V_{RWM}	Maximum Working Peak Reverse Voltage			
I_F	Maximum D.C. Forward current	T_C = 25°C	37	Amps
		T_C = 106°C	20	
I_{FSM}	Non-Repetitive Forward Surge Current (T_J = 25°C, t_p = 8.3ms, Half Sine Wave)		110	
P_{tot}	Power Dissipation	T_C = 25°C	78	W
		T_C = 110°C	25	
T_J, T_{STG}	Operating and Storage Junction Temperature Range		-55 to 150	°C
T_L	Lead Temperature for 10 Seconds		300	

STATIC ELECTRICAL CHARACTERISTICS

Symbol	Characteristic / Test Conditions		Min	Typ	Max	Unit
V_F	Forward Voltage	I_F = 20A T_J = 25°C		1.5	1.8	Volts
		I_F = 20A, T_J = 150°C		2.2		
I_{RM}	Maximum Reverse Leakage Current	V_R = 1200V T_J = 25°C		20	400	µA
		V_R = 1200V, T_J = 150°C		1000		
Q_c	Total Capactive Charge V_R = 800V, I_F = 10A, di/dt = -100A/µs, T_J = 25°C			108		nC
C_T	Junction Capacitance V_R = 0V, T_J = 25°C, f = 1MHz			1100		pF
	Junction Capacitance V_R = 200V, T_J = 25°C, f = 1MHz			97		
	Junction Capacitance V_R = 400V, T_J = 25°C, f = 1MHz			88		

THERMAL AND MECHANICAL CHARACTERISTICS

APT20SCD120BHB

Symbol	Characteristic / Test Conditions	Min	Typ	Max	Unit
$R_{\theta JC}$	Junction-to-Case Thermal Resistance			1.6	°C/W
W_T	Package Weight		0.22		oz
			5.9		g
Torque	Maximum Mounting Torque			10	lb·in
				1.1	N·m

Microsemi reserves the right to change, without notice, the specifications and information contained herein.

TYPICAL PERFORMANCE CURVES

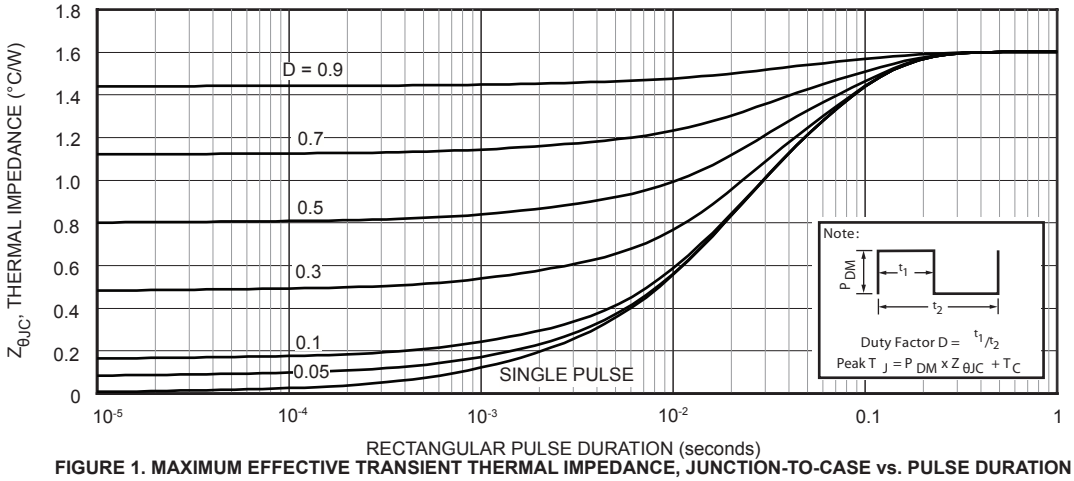


FIGURE 1. MAXIMUM EFFECTIVE TRANSIENT THERMAL IMPEDANCE, JUNCTION-TO-CASE vs. PULSE DURATION

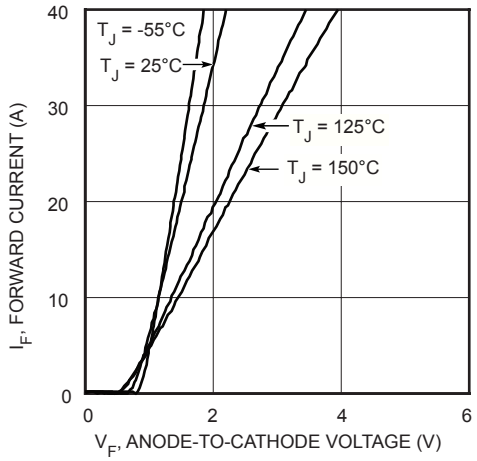


FIGURE 2, Forward Current vs. Forward Voltage

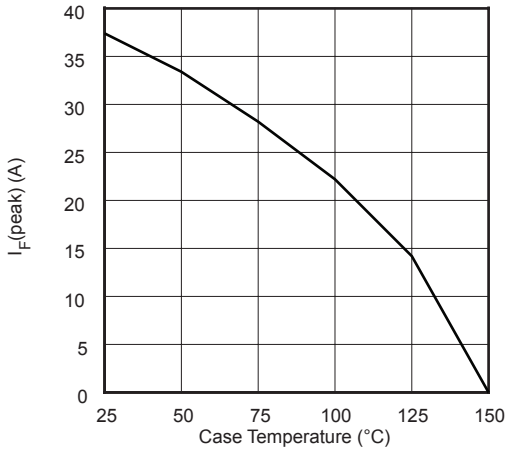


FIGURE 3, Maximum Forward Current vs. Case Temperature

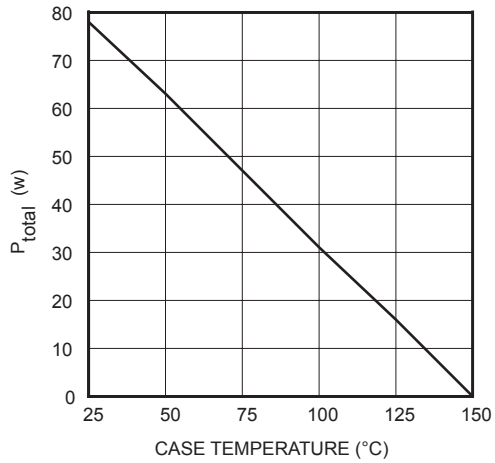


Figure 4. Maximum Power Dissipation *vs.* Case Temperature

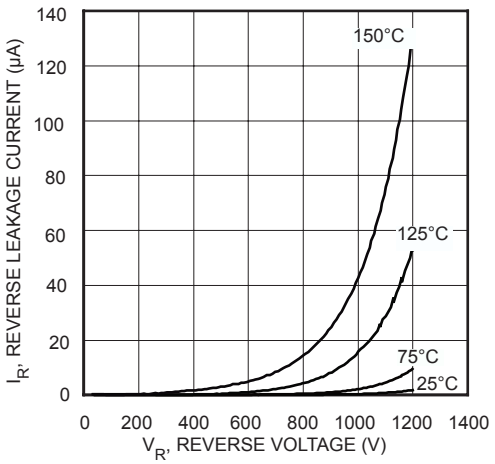


Figure 5. Reverse Leakage Currents *vs.* Reverse Voltage

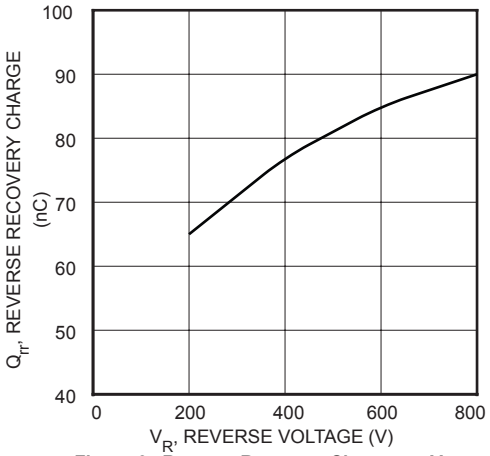


Figure 6. Reverse Recovery Charge *vs.* V_R

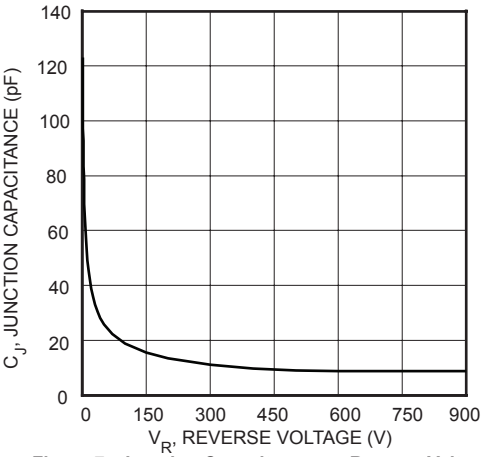
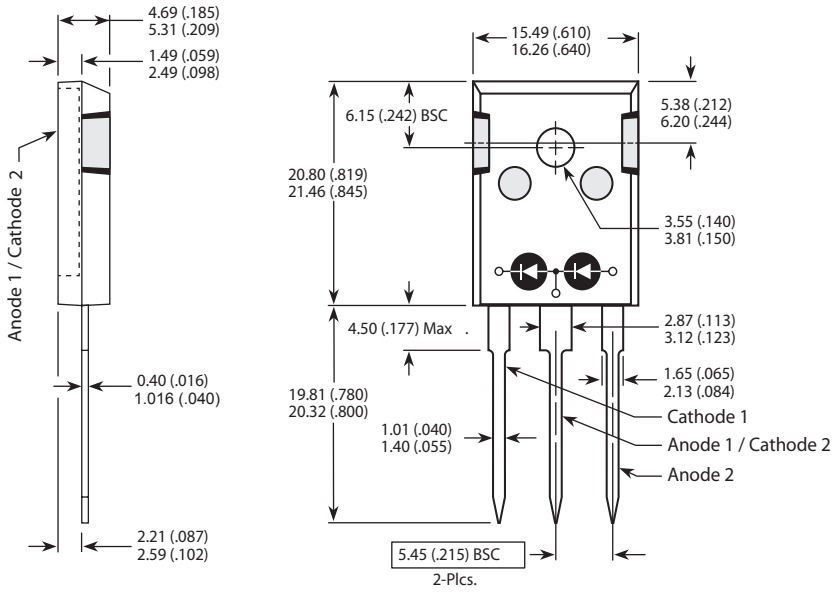


Figure 7. Junction Capacitance *vs.* Reverse Voltage

TO-247 Package Outline



Dimensions in Millimeters and (Inches)

050-7710 Rev A 10-2013

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