Chipsmall Limited consists of a professional team with an average of over 10 year of expertise in the distribution of electronic components. Based in Hongkong, we have already established firm and mutual-benefit business relationships with customers from,Europe,America and south Asia,supplying obsolete and hard-to-find components to meet their specific needs.

With the principle of “Quality Parts,Customers Priority,Honest Operation,and Considerate Service”,our business mainly focus on the distribution of electronic components. Line cards we deal with include Microchip,ALPS,ROHM,Xilinx,Pulse,ON,Everlight and Freescale. Main products comprise IC,Modules,Potentiometer,IC Socket,Relay,Connector.Our parts cover such applications as commercial,industrial, and automotives areas.

We are looking forward to setting up business relationship with you and hope to provide you with the best service and solution. Let us make a better world for our industry!

Contact us

Tel: +86-755-8981 8866 Fax: +86-755-8427 6832
Email & Skype: info@chipsmall.com Web: www.chipsmall.com
Address: A1208, Overseas Decoration Building, #122 Zhenhua RD., Futian, Shenzhen, China

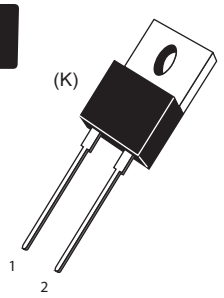
SiC Microsemi

Microsemi

APT20SCD65K

650V 20A

Zero Recovery Silicon Carbide Schottky Diode



1 - Cathode
2 - Anode
Back of Case - Cathode

PRODUCT APPLICATIONS

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

PRODUCT FEATURES

- **Zero Recovery Time (t_{rr})**
- **Popular TO-220 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		650	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	32	Amps
		T_C = 90°C	20	
I_{FRM}	Repetitive Peak Forward Surge Current (T_C = 25°C, t_p = 10ms, Half Sine Wave)		75	
I_{FSM}	Non-Repetitive Forward Surge Current (T_C = 25°C, t_p = 10ms, Half Sine)		165	
P_{TOT}	Power Dissipation	T_C = 25°C	114	W
		T_C = 110°C	36	
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		1.9		
I_{RM}	Maximum Reverse Leakage Current	V_R = 650V T_J = 25°C		20	400	µA
		V_R = 650V, T_J = 150°C		250		
Q_c	Total Capactive Charge V_R = 325V, I_F = 20A, di/dt = -500A/µs, T_J = 25°C			100		nC
C_T	Junction Capacitance V_R = 0.1V, T_J = 25°C, f = 1MHz			680		pF
	Junction Capacitance V_R = 200V, T_J = 25°C, f = 1MHz			89		
	Junction Capacitance V_R = 400V, T_J = 25°C, f = 1MHz			73		

THERMAL AND MECHANICAL CHARACTERISTICS

APT20SCD65K

Symbol	Characteristic / Test Conditions	Min	Typ	Max	Unit
$R_{\theta JC}$	Junction-to-Case Thermal Resistance			1.1	°C/W
W_T	Package Weight		0.07		oz
			1.9		g
Torque	Maximum Mounting Torque			6.4	lb·in
				0.7	N·m

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

TYPICAL PERFORMANCE CURVES

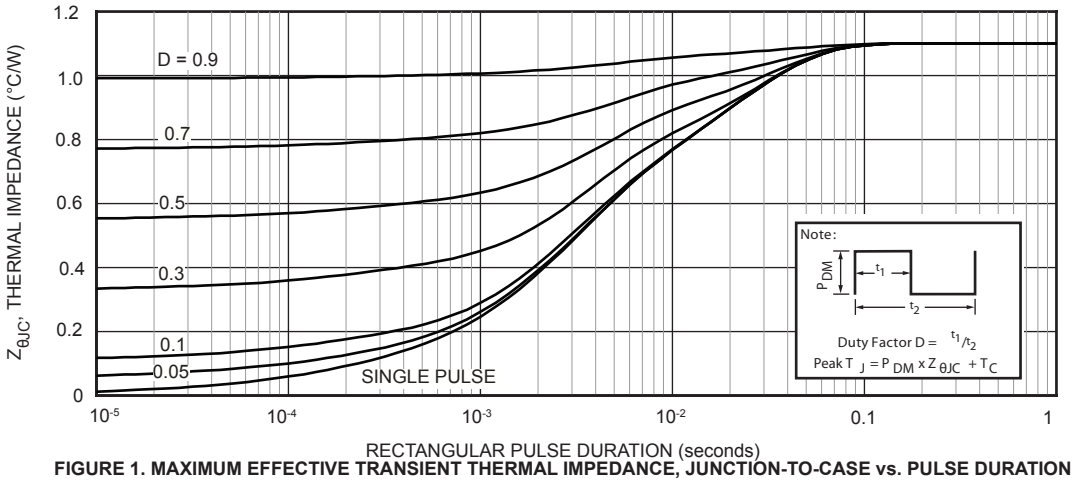


FIGURE 1. MAXIMUM EFFECTIVE TRANSIENT THERMAL IMPEDANCE, JUNCTION-TO-CASE vs. PULSE DURATION

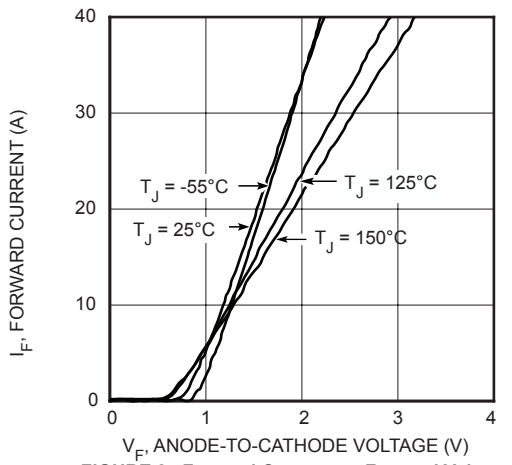


FIGURE 2, Forward Current vs. Forward Voltage

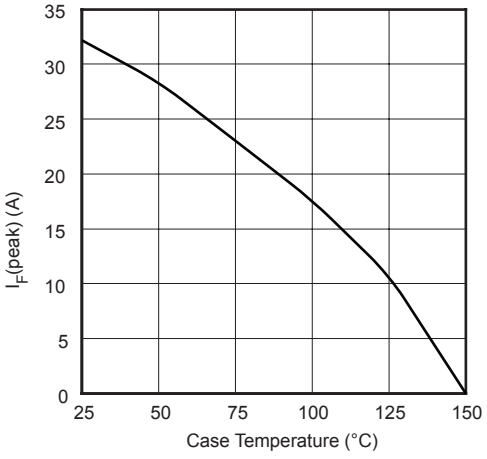


FIGURE 3, Maximum Forward Current vs. Case Temperature

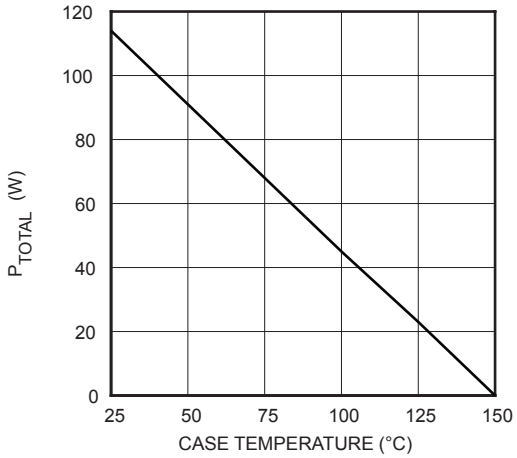


Figure 4. Maximum Power Dissipation *vs.* Case Temperature

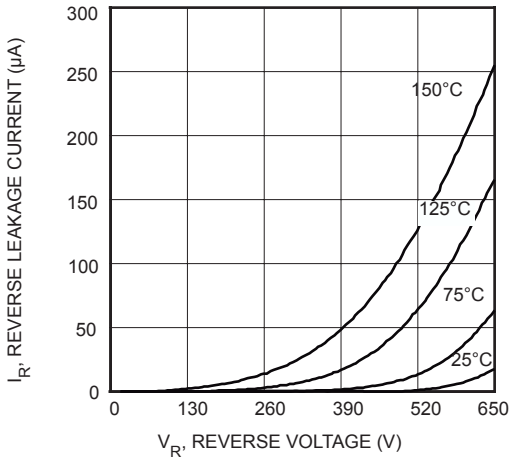


Figure 5. Reverse Leakage Currents *vs.* Reverse Voltage

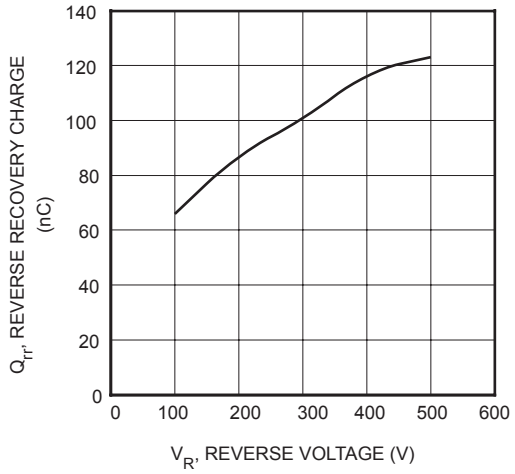


Figure 6. Reverse Recovery Charge *vs.* V_R

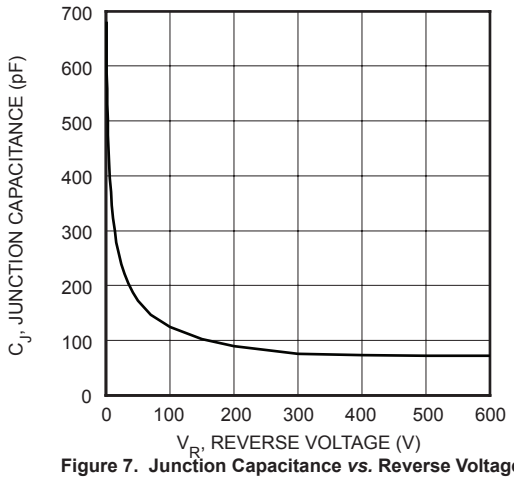
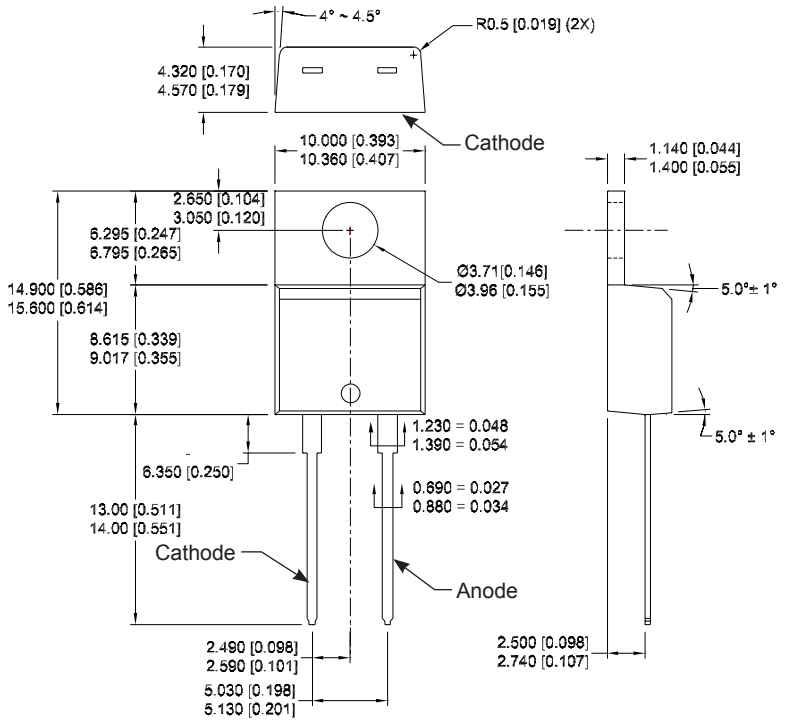


Figure 7. Junction Capacitance *vs.* Reverse Voltage

TO-220 (K) Package Outline

e3 100% Sn



Dimensions in millimeters and [inches]

Disclaimer:

050-7708 Rev B 9-2015