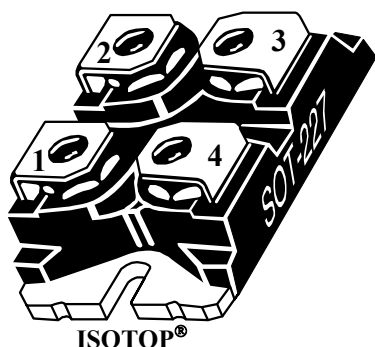
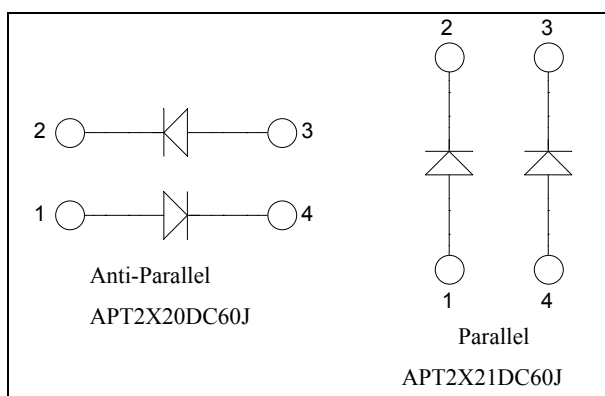


ISOTOP[®] SiC Diode Power Module

$$V_{RRM} = 600V$$

$$I_F = 20A @ T_C = 100^{\circ}C$$



Application

- Uninterruptible Power Supply (UPS)
- Induction heating
- Welding equipment
- High speed rectifiers

Features

- **SiC Schottky Diode**
 - Zero reverse recovery
 - Zero forward recovery
 - Temperature Independent switching behavior
 - Positive temperature coefficient on VF
- ISOTOP[®] Package (SOT-227)
- Very low stray inductance
- High level of integration

Benefits

- Outstanding performance at high frequency operation
- Low losses
- Low noise switching
- Direct mounting to heatsink (isolated package)
- Low junction to case thermal resistance
- RoHS Compliant

Absolute maximum ratings (per leg)

Symbol	Parameter			Max ratings	Unit
V _R	Maximum DC reverse Voltage			600	V
V _{RRM}	Maximum Peak Repetitive Reverse Voltage				
I _{F(AV)}	Maximum Average Forward Current	Duty cycle = 50%	T _C = 100°C	20	A
I _{FSM}	Non-Repetitive Forward Surge Current	10 μs	T _C = 25°C	250	

CAUTION: These Devices are sensitive to Electrostatic Discharge. Proper Handling Procedures Should Be Followed. See application note APT0502 on www.microsemi.com

All ratings @ $T_j = 25^\circ\text{C}$ unless otherwise specified

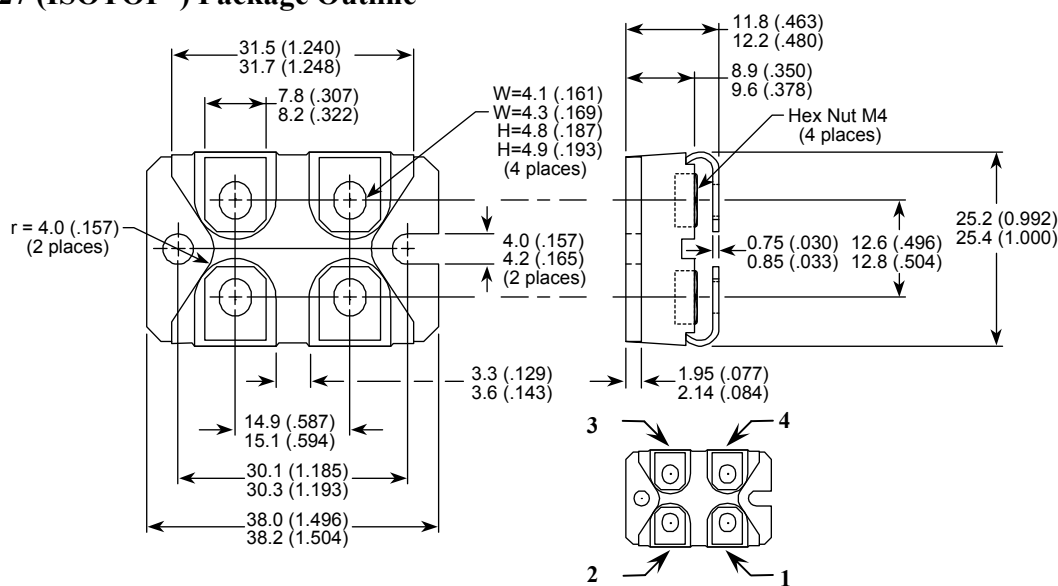
Electrical Characteristics (per leg)

Symbol	Characteristic	Test Conditions	Min	Typ	Max	Unit
V_F	Diode Forward Voltage	$I_F = 20\text{A}$	$T_j = 25^\circ\text{C}$	1.6	1.8	V
			$T_j = 175^\circ\text{C}$	2	2.4	
I_{RM}	Maximum Reverse Leakage Current	$V_R = 600\text{V}$	$T_j = 25^\circ\text{C}$	100	400	μA
			$T_j = 175^\circ\text{C}$	200	2000	
Q_C	Total Capacitive Charge	$I_F = 20\text{A}$, $V_R = 300\text{V}$ $di/dt = 800\text{A}/\mu\text{s}$		28		nC
C	Total Capacitance	$f = 1\text{MHz}$, $V_R = 200\text{V}$		130		pF
		$f = 1\text{MHz}$, $V_R = 400\text{V}$		100		

Thermal and package characteristics (per leg)

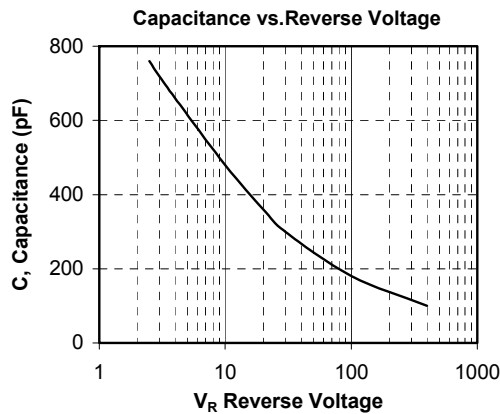
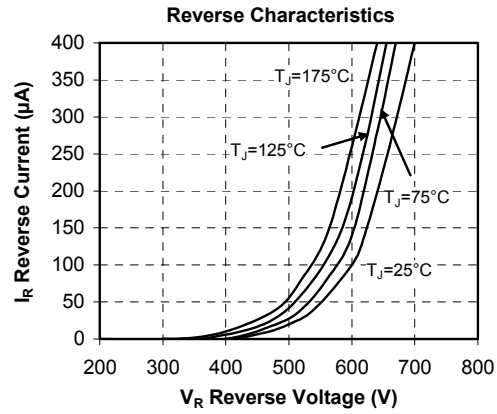
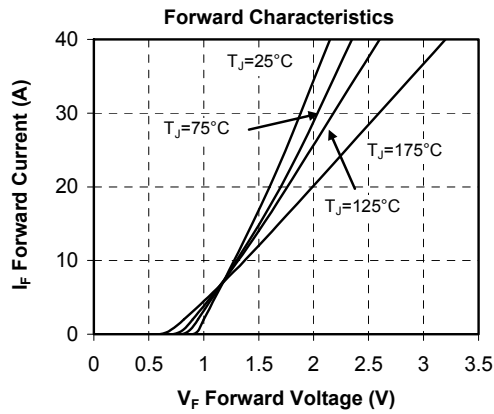
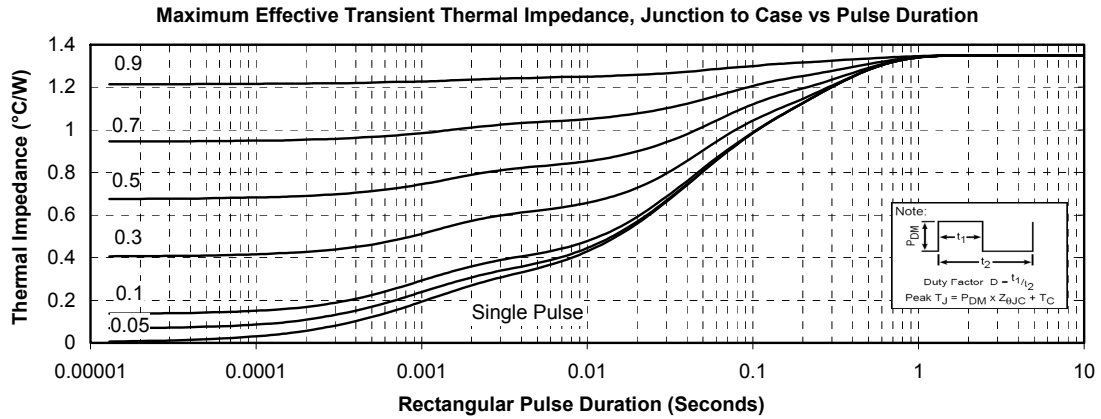
Symbol	Characteristic	Min	Typ	Max	Unit
R_{thJC}	Junction to Case Thermal resistance			1.35	$^\circ\text{C}/\text{W}$
R_{thJA}	Junction to Ambient (Diode)			20	$^\circ\text{C}/\text{W}$
V_{ISOL}	RMS Isolation Voltage, any terminal to case $t = 1\text{ min}$, 50/60Hz	2500			V
T_j, T_{STG}	Storage Temperature Range	-55		175	$^\circ\text{C}$
T_L	Max Lead Temp for Soldering: 0.063" from case for 10 sec			300	$^\circ\text{C}$
Torque	Mounting torque (Mounting = 8-32 or 4mm Machine and terminals = 4mm Machine)			1.5	N.m
Wt	Package Weight		29.2		g

SOT-227 (ISOTOP[®]) Package Outline



Dimensions in Millimeters and (Inches)

Typical Diode Performance Curve



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