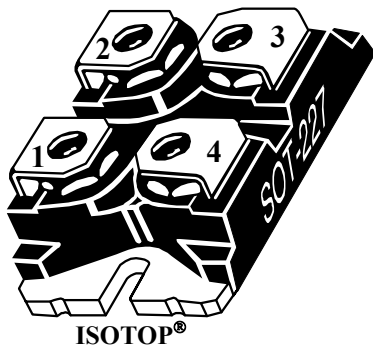
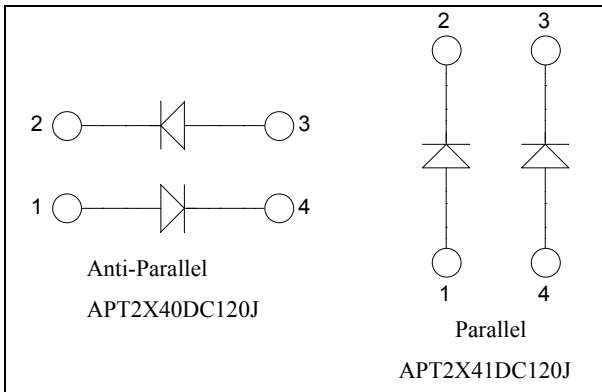


**ISOTOP<sup>®</sup> SiC Diode**  
**Power Module**
 $V_{RRM} = 1200V$   
 $I_F = 40A @ T_C = 100^{\circ}C$ 

**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<sup>®</sup> 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	1200	V
$V_{RRM}$	Maximum Peak Repetitive Reverse Voltage		
$I_{F(AV)}$	Maximum Average Forward Current	40	A
$I_{FSM}$	Non-Repetitive Forward Surge Current		
		10 $\mu$ s	
		$T_C = 100^{\circ}C$	
		$T_C = 25^{\circ}C$	

**CAUTION:** These Devices are sensitive to Electrostatic Discharge. Proper Handling Procedures Should Be Followed. See application note APT0502 on [www.microsemi.com](http://www.microsemi.com)

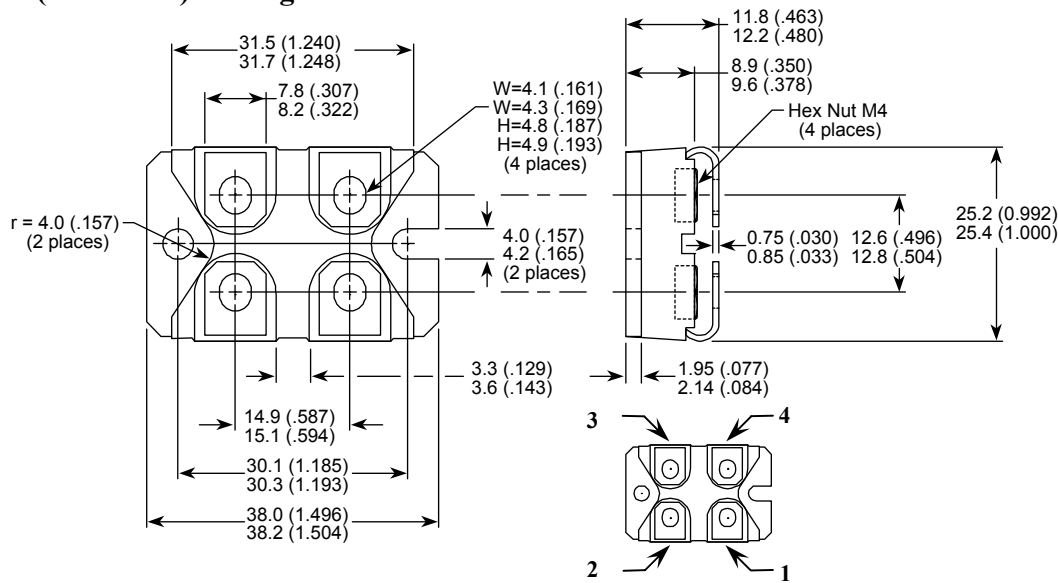
All ratings @  $T_j = 25^\circ\text{C}$  unless otherwise specified

**Electrical Characteristics (per leg)**

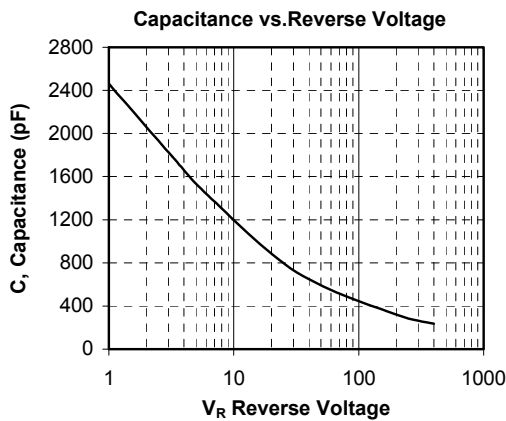
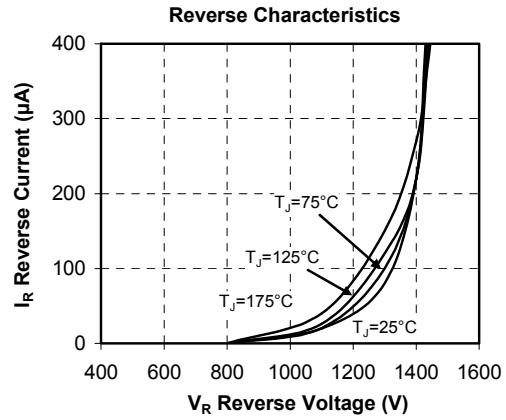
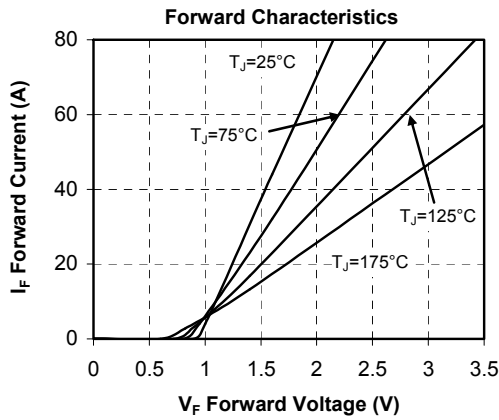
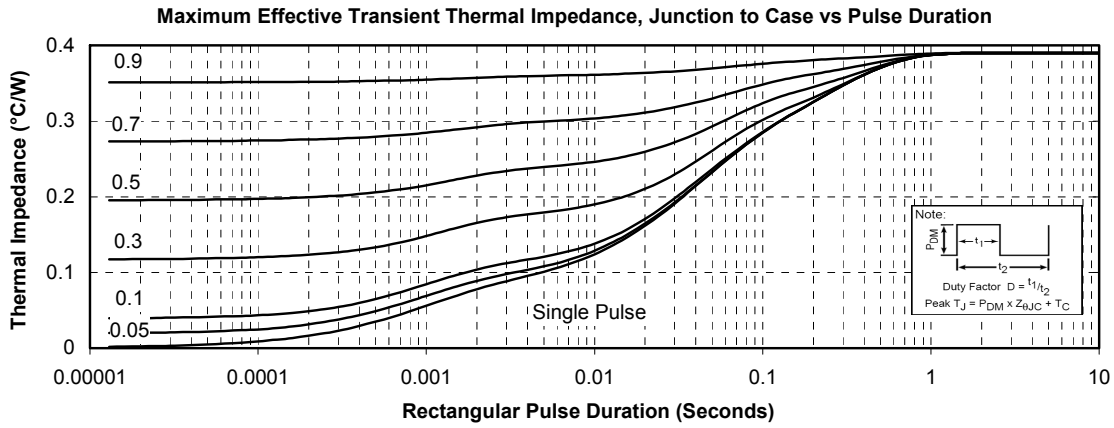
Symbol	Characteristic	Test Conditions	Min	Typ	Max	Unit	
$V_F$	Diode Forward Voltage	$I_F = 40\text{A}$	$T_j = 25^\circ\text{C}$		1.6	1.8	V
			$T_j = 175^\circ\text{C}$		2.3	3.0	
$I_{RM}$	Maximum Reverse Leakage Current	$V_R = 1200\text{V}$	$T_j = 25^\circ\text{C}$		128	800	$\mu\text{A}$
			$T_j = 175^\circ\text{C}$		224	4000	
$Q_C$	Total Capacitive Charge	$I_F = 40\text{A}, V_R = 600\text{V}$ $di/dt = 2000\text{A}/\mu\text{s}$		160		nC	
C	Total Capacitance	$f = 1\text{MHz}, V_R = 200\text{V}$		384		pF	
		$f = 1\text{MHz}, V_R = 400\text{V}$		276			

**Thermal and package characteristics (per leg)**

Symbol	Characteristic	Min	Typ	Max	Unit
$R_{thJC}$	Junction to Case Thermal resistance			0.39	$^\circ\text{C}/\text{W}$
$R_{thJA}$	Junction to Ambient (IGBT & Diode)			20	$^\circ\text{C}/\text{W}$
$V_{ISOL}$	RMS Isolation Voltage, any terminal to case $t = 1\text{ min}, 50/60\text{Hz}$	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<sup>®</sup>) Package Outline**


**Typical Diode Performance Curve**



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