

### KEY FEATURES

- $V_{RRM}$  1200V
- $I_F$  @ 125°C 10A
- SMALL FOOTPRINT
- CERAMIC ISOLATED BACKSIDE

### BENEFITS

- COMPACT, LIGHTWEIGHT DESIGN
- INCREASED POWER DENSITY

### APPLICATIONS

- AEROSPACE
- HIGH EFFICIENCY CONVERTERS & MOTOR DRIVES
- POWER SUPPLIES



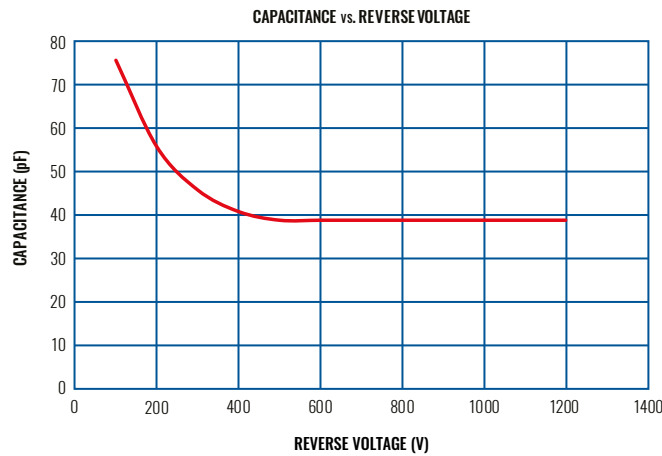
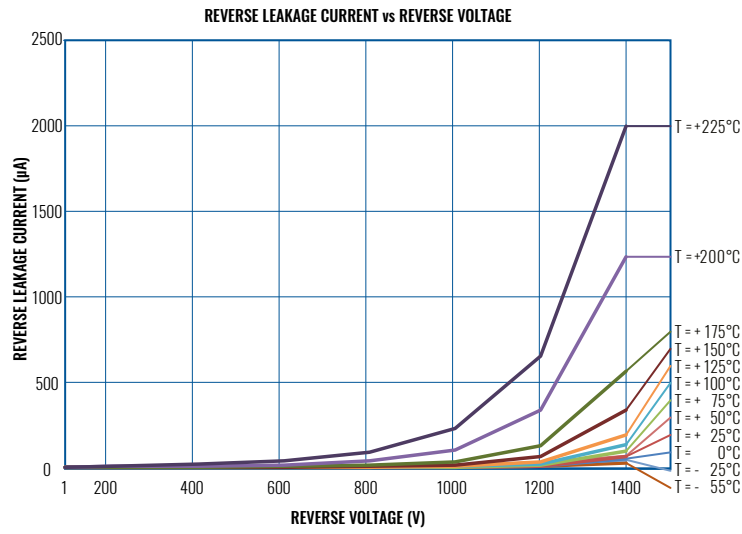
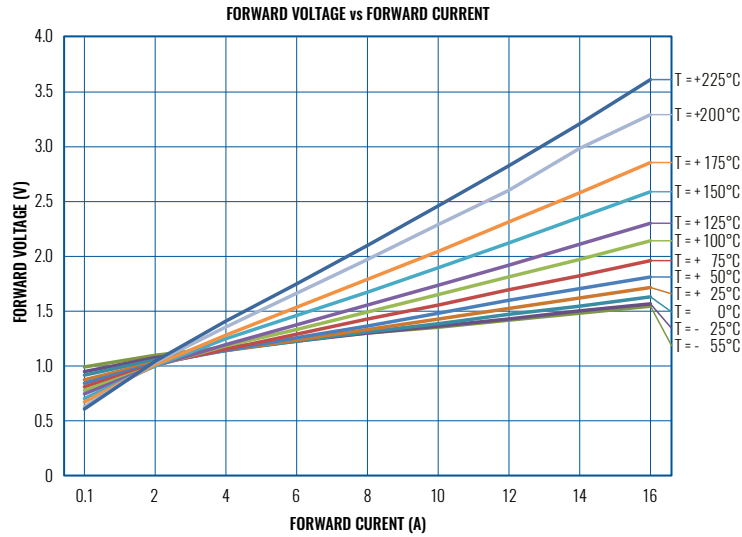
### ORDERING GUIDE

<b>Part Number</b>	SD11800
<b>Description</b>	1200V Silicon Carbide Diode (isolated back side)

### ABSOLUTE MAXIMUM RATINGS

PARAMETER	SYMBOL	VALUE	TEST CONDITIONS
Max D.C. Reverse Voltage	$V_R$	1200V	
Repetitive Peak Voltage	$V_{RRM}$	1200V	
Surge Peak Reverse Voltage	$V_{RSM}$	1200V	
DC Blocking Voltage	$V_{DC}$	1200V	
DC Forward Current	$I_{F(avg)}$	10A 10A	$T_C = 25^\circ\text{C}$ $T_C = 125^\circ\text{C}$
Repetitive Peak Forward Current	$I_{FRM}$	44A	$T_C = 125^\circ\text{C}$ , tp = 10ms, Half Sine Pulse
Non-Repetative Forward Surge Current	$I_{FSM}$	43A 33A	$T_C = 25^\circ\text{C}$ , tp = 8.3ms, Half Sine Pulse $T_C = 150^\circ\text{C}$ , tp = 8.3ms, Half Sine Pulse
Power Dissipation	$P_D$	16W 19W	$T_C = 25^\circ\text{C}$ $T_C = 125^\circ\text{C}$
Maximum Case Temperature	$T_{C(max)}$	175°C	
Maximum Junction Temperature	$T_{J(max)}$	200°C	
Operating Temperature Range	T	-55°C to +175°C	
Storage Temperature Range	$T_{STG}$	-55°C to +175°C	
Lead Temperature for 10 Seconds	$T_L$	260°C	

**TYPICAL PERFORMANCE CURVES**



### ELECTRICAL SPECIFICATIONS

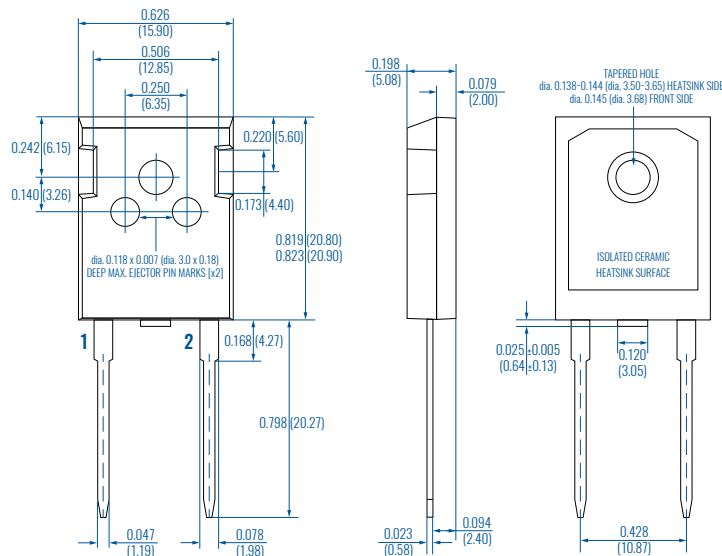
Typical @ 25°C unless otherwise noted

Parameter		Symbol	Min.	Typ.	Max.	Unit
DC Blocking Voltage		$V_{DC}$	1200	1300		V
Forward Voltage	$I_F = 10A, T_J = 25^\circ C$ $I_F = 10A, T_J = 125^\circ C$	$V_F$		1.4 1.7		V V
Reverse Current	$V_R = 1400V, T_J = 25^\circ C$ $V_R = 1400V, T_J = 125^\circ C$	$I_{RM}$		12 80	200 1000	$\mu A$ $\mu A$
Total Capacitive Charge	$I_F = 10A$	$Q_C$		19		nC
Total Capacitance	100V, f = 1MHz 200V, f = 1MHz 400V, f = 1MHz 600V, f = 1MHz 800V, f = 1MHz 1000V, f = 1MHz	C		77 56 41 39 39 39		pF
Switching Time	$I_F = 10A$	$T_{rr}$		20		ns

### THERMAL AND MECHANICAL CHARACTERISTICS

Parameter		Symbol	Min.	Typ.	Max.	Unit
Thermal Resistance, Junction to Case		$R_{\theta(JC)}$		1.7		°C/W
Weight		W	5.9		6.1	g
Mounting Torque		$M_S$		1.4	1.76	N-m

### PACKAGE OUTLINE - TO-247-2L



### PIN DESCRIPTION

Pin	Description
1	Cathode
2	Anode

### SCHEMATIC

