

#### KEY FEATURES

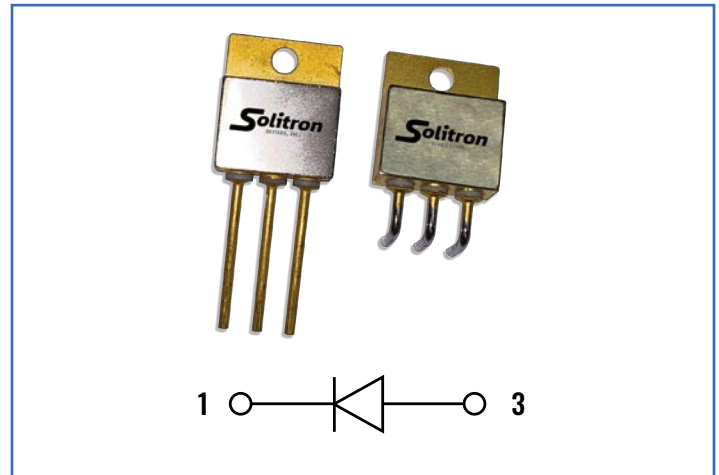
- $V_{RRM}$  1200V
- $I_F$  @ 125°C 20A
- ISOLATED BACKSIDE
- HERMETIC PACKAGE
- MIL-PRF-19500 SCREENING AVAILABLE

#### BENEFITS

- COMPACT, LIGHTWEIGHT DESIGN
- INCREASED POWER DENSITY

#### APPLICATIONS

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



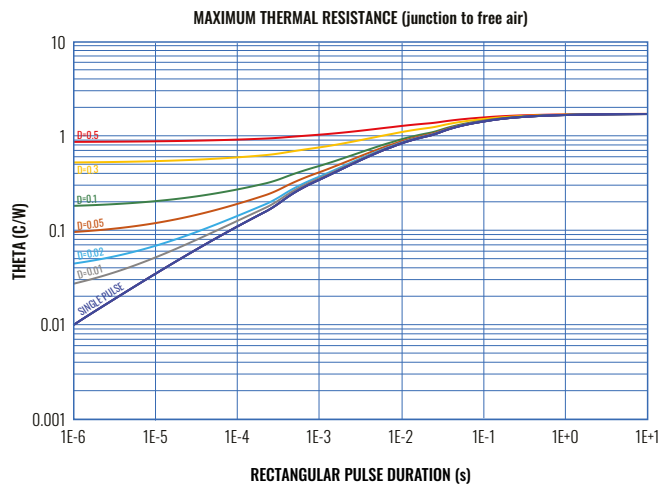
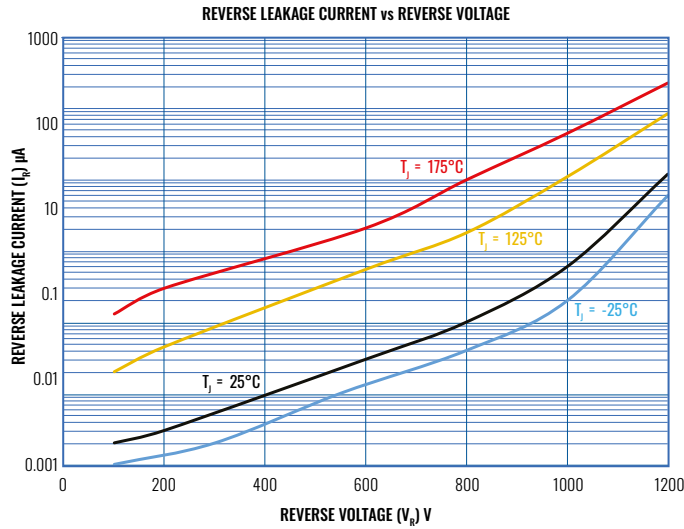
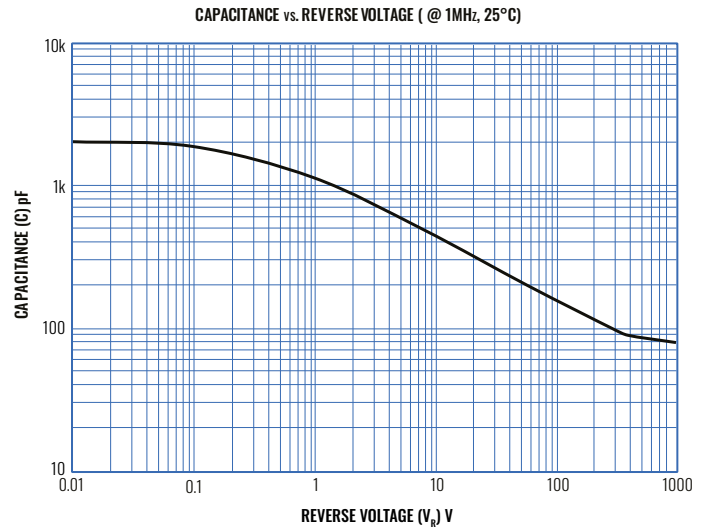
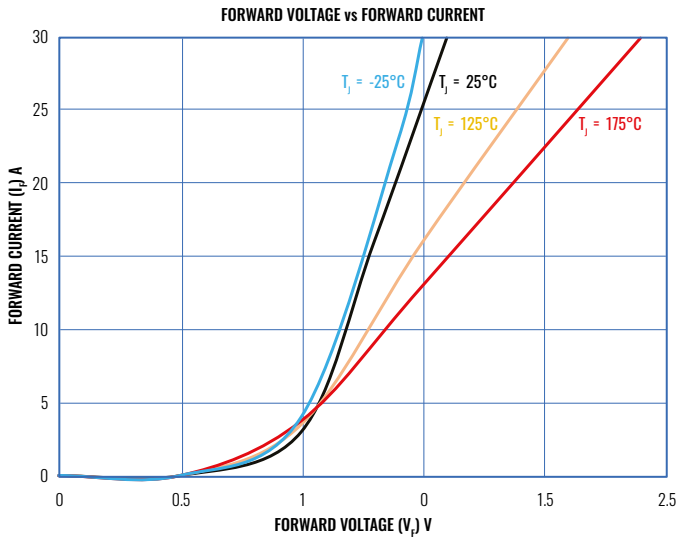
#### ORDERING GUIDE

<b>Part Number</b>	SD11805
<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	
Continuous Forward Current	$I_{F(avg)}$	20A	Limited by Junction Temperature ( $T_J$ )
Repetitive Peak Forward Current	$I_{FRM}$	44A	$T_C = 125^\circ\text{C}$ , $t_p = 10\text{ms}$ , Half Sine Pulse
Non-Repetative Forward Surge Current	$I_{FSM}$	43A 33A	$T_C = 25^\circ\text{C}$ , $t_p = 8.3\text{ms}$ , Half Sine Pulse $T_C = 150^\circ\text{C}$ , $t_p = 8.3\text{ms}$ , Half Sine Pulse
Power Dissipation	$P_D$	16W 19W	$T_C = 25^\circ\text{C}$ $T_C = 125^\circ\text{C}$
Maximum Junction Temperature	$T_{J(max)}$	175°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

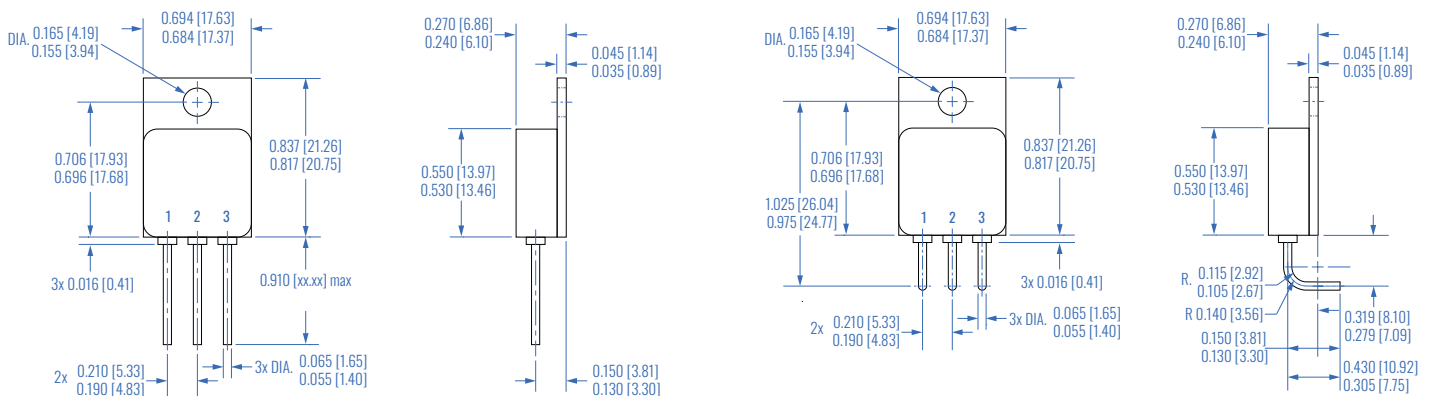
Typical @ 25°C unless otherwise noted

Parameter	Conditions	Symbol	Min.	Typ.	Max.	Unit
DC Blocking Voltage	$I_R = 0.4\text{mA}$	$V_{DC}$	1200			V
Forward Voltage	$I_F = 20\text{A}, T_J = 25^\circ\text{C}$ $I_F = 20\text{A}, T_J = 175^\circ\text{C}$	$V_F$		1.4 1.9		V V
Reverse Current	$V_R = 1200\text{V}, T_J = 25^\circ\text{C}$ $V_R = 1200\text{V}, T_J = 175^\circ\text{C}$	$I_{RM}$		20 200	400	$\mu\text{A}$ $\mu\text{A}$
Total Capacitive Charge	$V_R = 800\text{V}, di/dt = 500\text{A}/\mu\text{s}$	$Q_C$		65		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	$V_R = 800\text{V}, di/dt = 500\text{A}/\mu\text{s}$	$T_C$		18		ns

#### THERMAL AND MECHANICAL CHARACTERISTICS

Parameter	Symbol	Min.	Typ.	Max.	Unit
Thermal Resistance, Junction to Case	$R_{\theta(jc)}$		1.7		$^\circ\text{C}/\text{W}$
Weight	W	5.9	6.0		g
Mounting Torque	$M_S$		1.4	1.76	N-m

#### PACKAGE OUTLINE - TO-258-3L



#### PIN DESCRIPTION

Pin	Description
1	Cathode
3	Anode

#### SCHEMATIC

