SD11804

1200V 10A/20A Centertap Silicon Carbide Schottky Diode - 1

KEY FEATURES

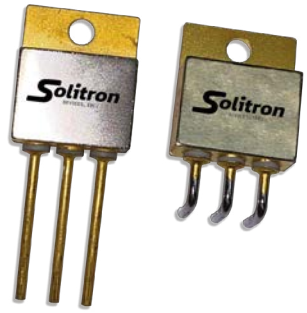
- NO REVERSE RECOVERY / NO FORWARD RECOVERY
- NEAR ZERO SWITCH LOSS
- SWITCHING BEHAVIOR INDEPENDENT OF TEMPERATURE
- 200°C OPERATING TEMPERATURE
- ISOLATED CASE
- HERMETIC PACKAGE
- TX, TXV AND SPACE LEVEL SCREENING AVAILABLE

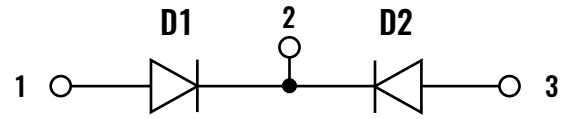
BENEFITS

- PARALLEL DEVICES WITHOUT THERMAL RUNAWAY
- HIGHER EFFECIENCY
- SMALLER HEAT SINK
- IDEAL FOR EXTREME ENVIRONMENT APPLICATIONS

APPLICATIONS

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





ORDERING GUIDE

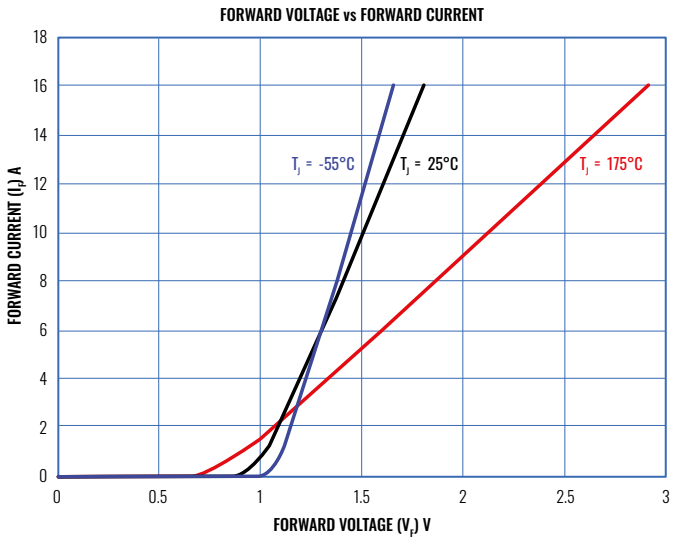
Part Number SD11804

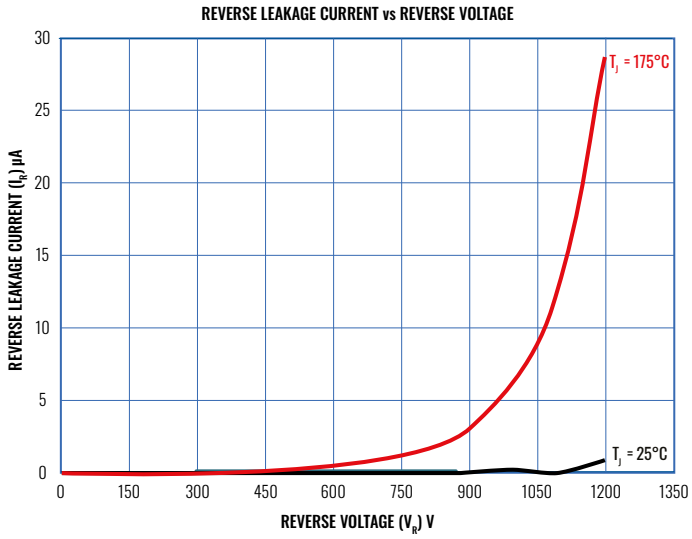
Description 1200V 10A/20A Centertap Silicon Carbide Diode

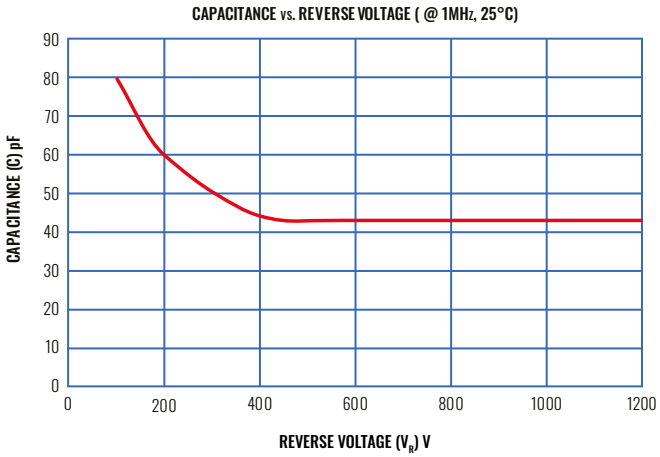
ABSOLUTE MAXIMUM RATINGS

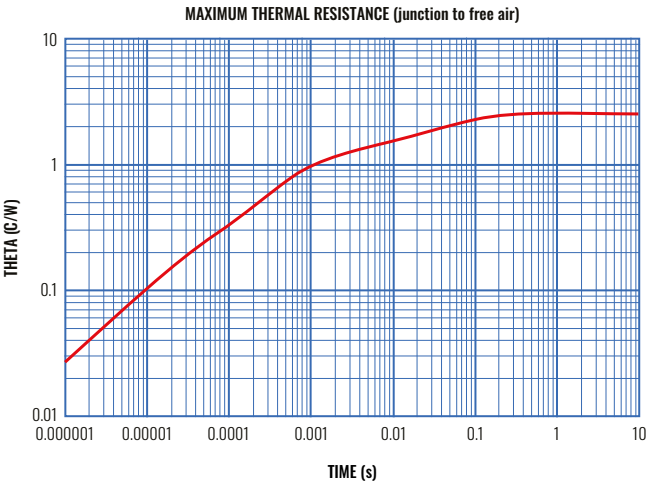
PARAMETER	SYMBOL	VALUE	TEST CONDITIONS
Max D.C. Reverse Voltage	V_R	1200V	
Repetitive Peak Voltage	V_{RRM}	1200V	
Surge Peak Reverse Voltage	V_{RSM}	1200V	
DC Blocking Voltage	V_{DC}	1200V	
DC Forward Current	$I_{F(avg)}$	10A/20A 10A/20A	T_C = 25°C T_C = 125°C
Repetitive Peak Forward Current	I_{FRM}	44A/88A	T_C = 125°C, tp = 10ms, Half Sine Pulse
Non-Repetative Forward Surge Current	I_{FSM}	43A/89A 33A/66A	T_C = 25°C, tp = 8.3ms, Half Sine Pulse T_C = 150°C, tp = 8.3ms, Half Sine Pulse
Power Dissipation. max.	P_D	66W 21W	T_C = 25°C T_C = 125°C
Maximum Case Temperature	$T_{C(max)}$	175°C	
Maximum Junction Temperature	$T_{J(max)}$	225°C	
Operating Temperature Range	T_{OP}	-55°C to +210°C	
Storage Temperature Range	T_{STG}	-55°C to +210°C	
Lead Temperature for 10 Seconds	T_L	260°C	

TYPICAL PERFORMANCE CURVES









ELECTRICAL SPECIFICATIONS (per diode)

Typical @ 25°C unless otherwise noted

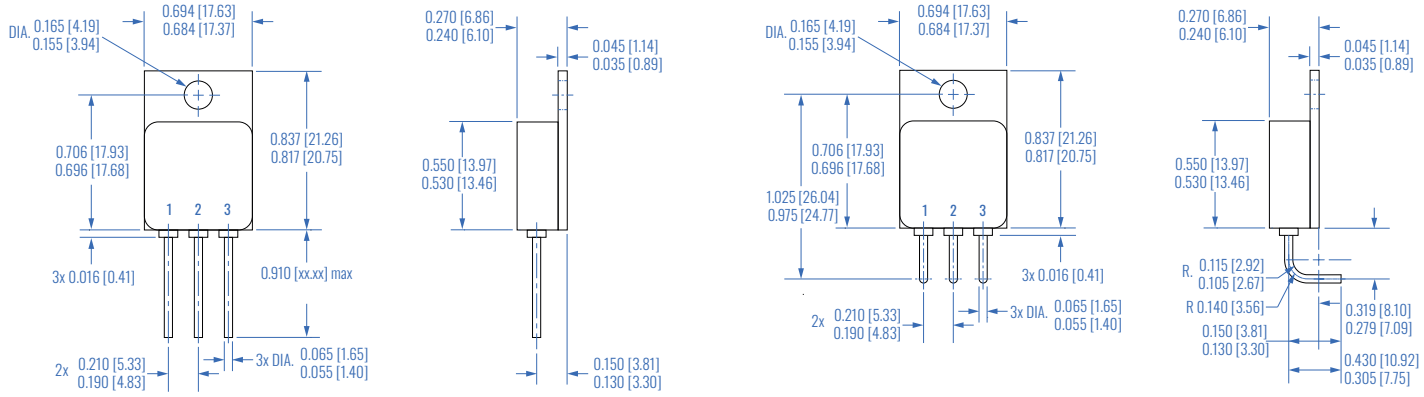
Parameter		Symbol	Min.	Typ.	Max.	Unit
DC Blocking Voltage		V_{DC}	1200			V
Forward Voltage	I_F = 10A, T_J = 25°C I_F = 10A, T_J = 175°C I_F = 10A, T_J = -55°C	V_F		1.5 2.1 1.4		V V V
Reverse Current	V_R = 1200V, T_J = 25°C V_R = 1200V, T_J = 175°C	I_{RM}		1 30	200 1000	µA µA
Total Capacitive Charge	I_F = 10A/20A , V_R = 15V, di/dt = 100A/µs	Q_C		19/54		nC
Total Capacitance	100V, f = 1MHz 200V, f = 1MHz 400V, f = 1MHz 600V, f = 1MHz 800V, f = 1MHz 1000V, f = 1MHz 1200V, f = 1MHz	C		79 60 44 43 43 43 43		pF
Switching Time	I_F = 10A , V_R = 15V, di/dt = 100A/µs	T_{rr}		20		ns

THERMAL AND MECHANICAL CHARACTERISTICS

Parameter	Symbol	Min.	Typ.	Max.	Unit
Thermal Resistance, Junction to Case (per diode)	$R_{\theta(JC)}$		1.7 (1)	2.3 (2)	°C/W
Weight	W		8.21		g

Entire Package: (1) Typ. = 0.85°C/W, max. = 1.7 °C/W

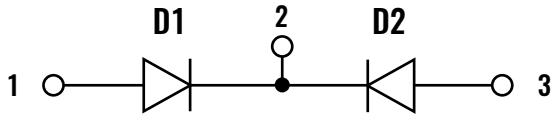
PACKAGE OUTLINE - TO-258-3L



PIN DESCRIPTION

Pin	Description
1	Anode 1
2	Cathode
3	Anode 2

SCHEMATIC



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