

KEY FEATURES

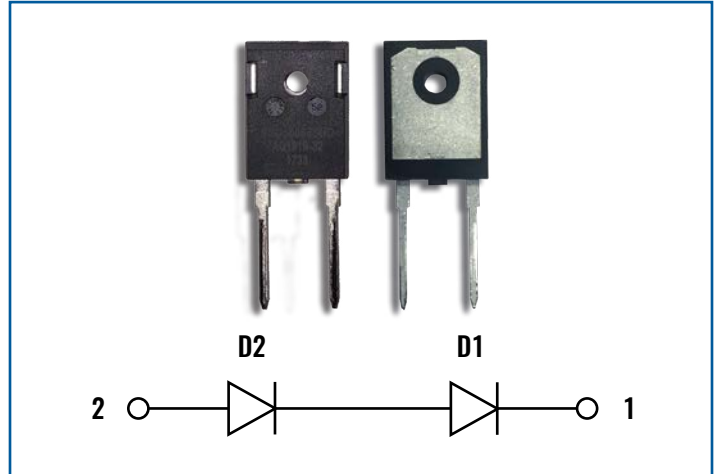
- VRRM 650V
- IF @ 125°C 50A
- BACKSIDE ISOLATION
- SMALL FOOTPRINT
- ZERO REVERSE RECOVERY
- PLASTIC COTS PACKAGING

BENEFITS

- COMPACT, LIGHTWEIGHT DESIGN
- INCREASED POWER DENSITY

APPLICATIONS

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



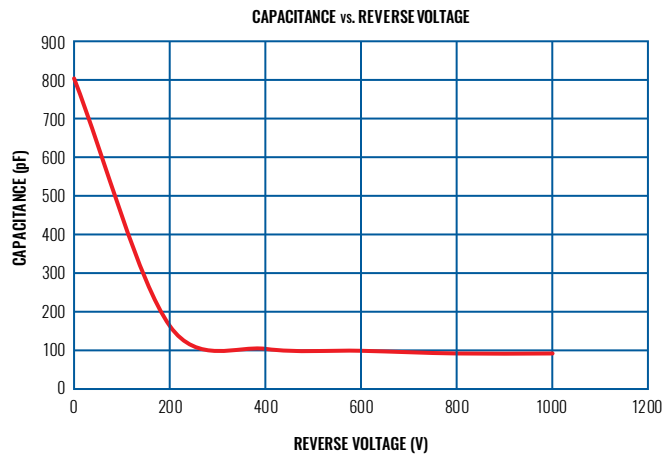
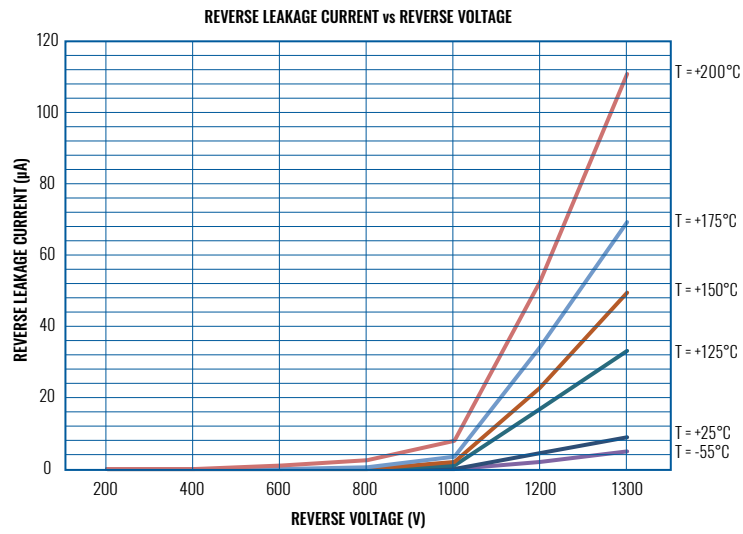
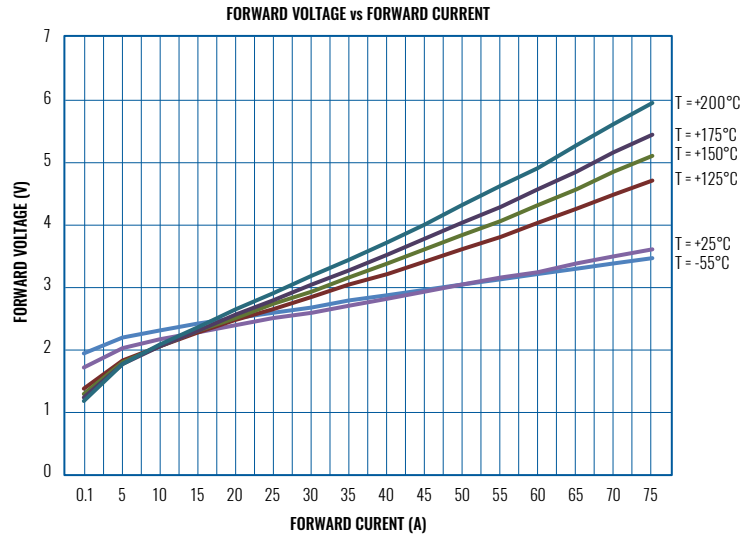
ORDERING GUIDE

Part Number SDD50065SHD
Description Dual 650W Silicon Carbide Diode

ABSOLUTE MAXIMUM RATINGS

PARAMETER	SYMBOL	VALUE	TEST CONDITIONS
Max D.C. Reverse Voltage	V_R	1300V	
Repetitive Peak Voltage	V_{RRM}	1300V	
Surge Peak Reverse Voltage	V_{RSM}	1300V	
DC Blocking Voltage	V_{DC}	1300V	
Isolation Voltage	V_{ISO}	1500V	
DC Forward Current	$I_{F(avg)}$	50A 50A	TC = 25°C TC = 125°C
Repetitive Peak Forward Current	I_{FRM}	46A 30A	$T_C=25^\circ\text{C}$, $t_p=10\text{ms}$, Half Sine Pulse $T_C=125^\circ\text{C}$, $t_p=10\text{ms}$, Half Sine Pulse
Non-Repetative Forward Surge Current	I_{FSM}	90A 70A	$T_C=25^\circ\text{C}$, $t_p=10\text{ms}$, Half Sine Pulse $T_C=125^\circ\text{C}$, $t_p=10\text{ms}$, Half Sine Pulse
Power Dissipation	P_D	150W 180W	TC = 25°C TC = 125°C
Maximum Case Temperature	$T_{C(max)}$	+125°C	
Maximum Junction Temperature	$T_{J(max)}$	+175°C	
Operating Temperature Range	T	-55°C to +125°C	
Storage Temperature Range	T_{STG}	-55°C to +125°C	
Lead Temperature for 10 Seconds	T_L	220°C	

TYPICAL PERFORMANCE CURVES



ELECTRICAL SPECIFICATIONS

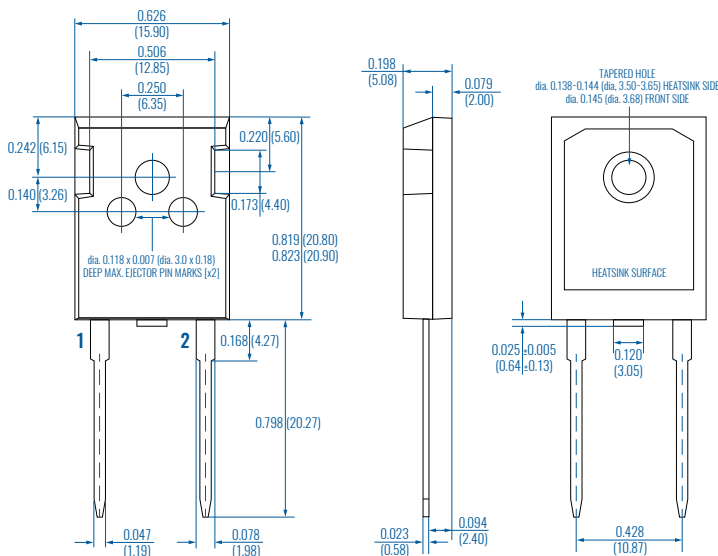
Typical @ 25°C unless otherwise noted

Parameter	Symbol	Min.	Typ.	Max.	Unit
DC Blocking Voltage	V_{DC}		1300		V
Forward Voltage	V_F	$I_F = 50A, T_J = 25^\circ C$ $I_F = 50A, T_J = 125^\circ C$	3.0 3.6		V V
Reverse Current	I_{RM}	$V_R = 1300V, T_J = 25^\circ C$ $V_R = 1300V, T_J = 125^\circ C$	10 34	500 1000	μA μA
Total Capacitive Charge	Q_C	$I_F = 50A$	84	150	nC
Total Capacitance	C	0V, f = 1MHz 200V, f = 1MHz 400V, f = 1MHz 600V, f = 1MHz 800V, f = 1MHz 1000V, f = 1MHz	806 162 100 95 88 88		pF
Switching Time	T_{RR}	$I_F = 50A$	60		nS

THERMAL AND MECHANICAL CHARACTERISTICS

Parameter	Symbol	Min.	Typ.	Max.	Unit
Thermal Resistance, Junction to Case	$R_{\theta(JC)}$		0.92		$^\circ C/W$
Weight	W	6.3		6.8	g
Mounting Torque	M_S	1.2		1.76	N-m

PACKAGE OUTLINE



PIN DESCRIPTION

Pin	Description
1	Cathode
2	Anode

SCHEMATIC

