

### KEY FEATURES

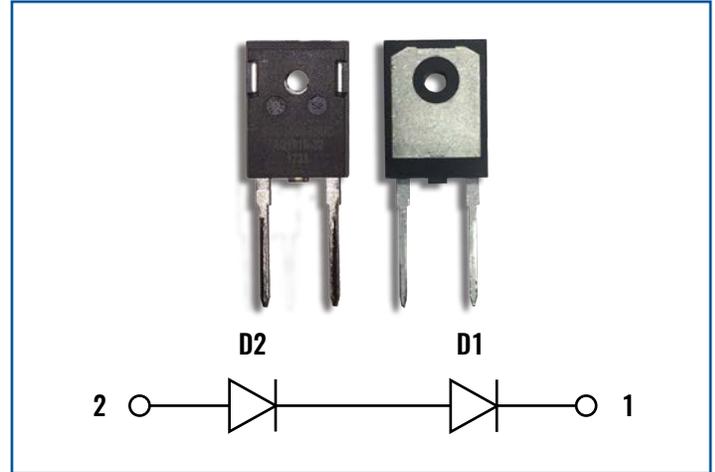
- VRRM 650V
- IF @ 125°C 50A
- BACKSIDE ISOLATION
- SMALL FOOTPRINT
- ZERO REVERSE RECOVERY
- PLASTIC COTS PACKAGING

### BENEFITS

- COMPACT, LIGHTWEIGHT DESIGN
- INCREASED POWER DENSITY

### APPLICATIONS

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



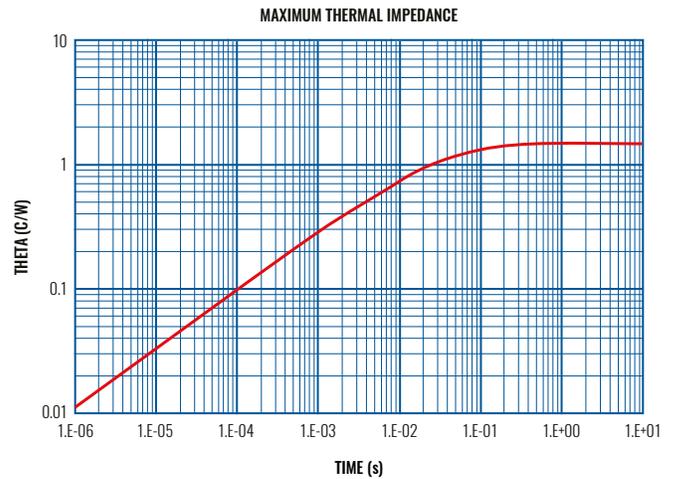
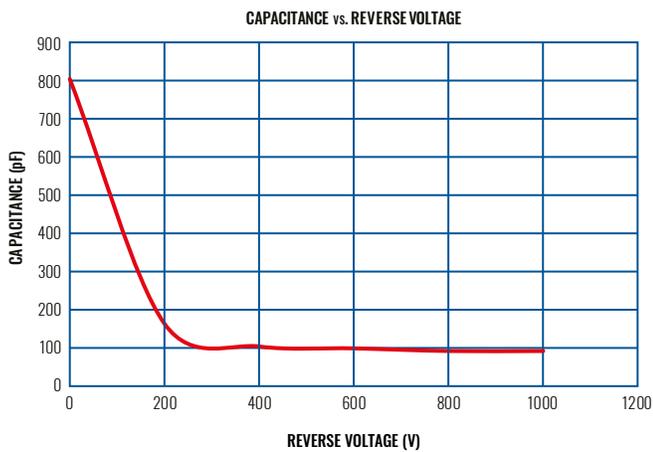
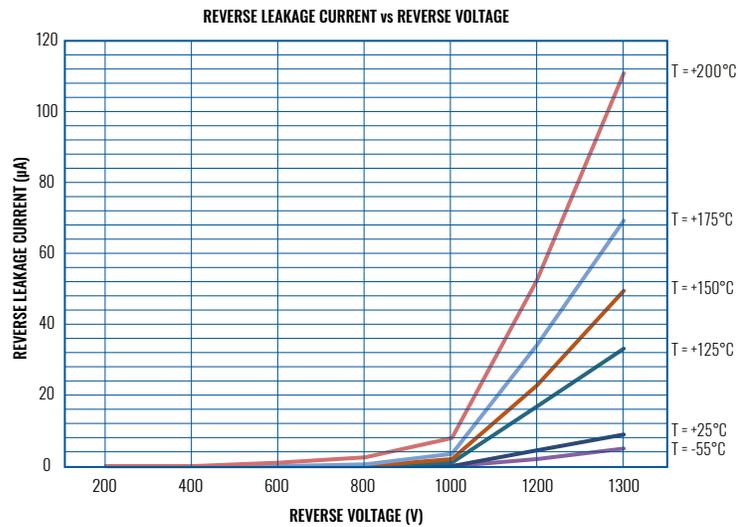
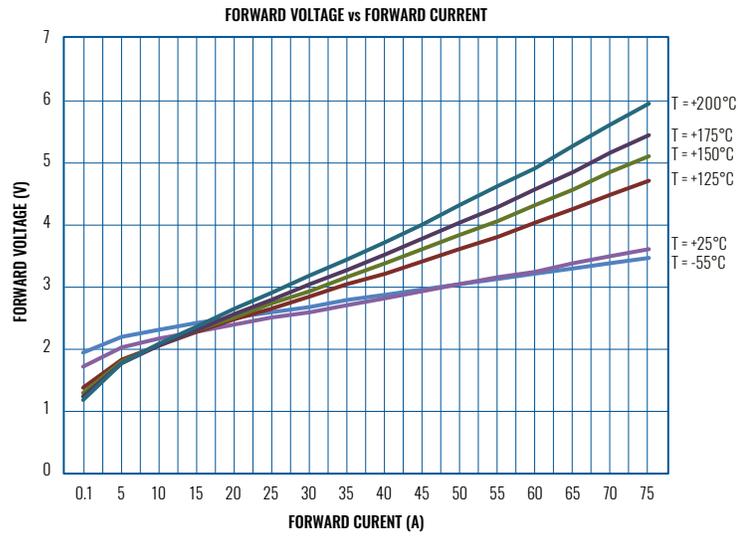
### ORDERING GUIDE

**Part Number** SDD50065SHD  
**Description** Dual 650V 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 +175°C	
Storage Temperature Range	$T_{STG}$	-55°C to +175°C	
Lead Temperature for 10 Seconds	$T_L$	220°C	

**TYPICAL PERFORMANCE CURVES**



### ELECTRICAL SPECIFICATIONS

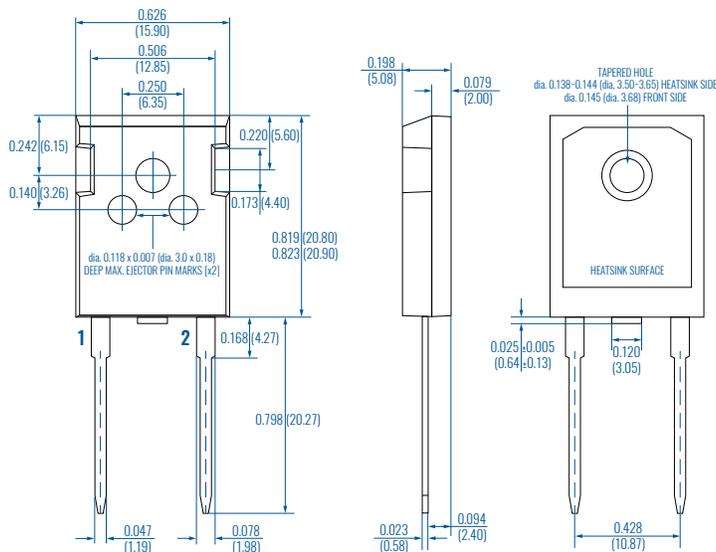
Typical @ 25°C unless otherwise noted

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

