

## SiC SCHOTTKY DIODE TYPE 2×50A

### Features

- High surge current capable
- Zero reverse recovery
- Zero forward recovery
- Isolation type package
- Temperature independent switching behavior
- $V_{bc}$  1200 V
- $I_F$  ( $T_C < 135^\circ\text{C}$ ) 2×50 A

### Benefits

- Unipolar rectifier
- Higher efficiency
- Smaller heat sink

### Applications

- Motor drives
- Switch mode power supplies
- Ev chargers
- Solar inverters
- Welding equipment
- Power factor correction
- Diode snubber
- Automotive
- induction heating

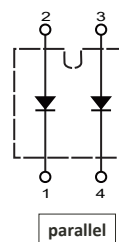
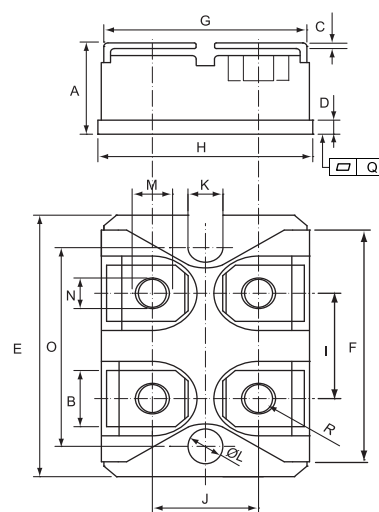
### Maximum Ratings

Operating Junction Temperature :  $-55^\circ\text{C}$  to  $+175^\circ\text{C}$

Storage Temperature :  $-55^\circ\text{C}$  to  $+175^\circ\text{C}$

Part Number	Maximum Recurrent Peak Reverse Voltage	Maximum DC Blocking Voltage
CSRI2×50-120P3B	1200V	1200V

Maximum Rating	Symbol	Conditions	Value	Unit
Continuous forward current (per diode)	$I_F$	$T_C = 135^\circ\text{C}$	50	A
Surge non-repetitive forward current sine halfwave (per diode)	$I_{FSM}$	$T_C = 25^\circ\text{C}$ , $t_p = 8.3\text{ ms}$	400	
		$T_C = 150^\circ\text{C}$ , $t_p = 8.3\text{ ms}$	250	
Non-repetitive peak forward current (per diode)	$I_{F,max}$	$T_C = 25^\circ\text{C}$ , $t_p = 10\text{ }\mu\text{s}$	1600	
		$T_C = 150^\circ\text{C}$ , $t_p = 10\text{ }\mu\text{s}$	1000	
Repetitive peak reverse voltage	$V_{RRM}$	$T_J = 25^\circ\text{C}$	1200	V
Isolation voltage (between All Terminals and Baseplate)	$V_{iso}$	50/60 Hz, $t = 1\text{ min}$ $I_{ISOL} \leq 1\text{ mA}$	2500	V
Mounting torque	$M_d$	To heatsink	1.3	Nm
		To terminal	1.1	



DIMENSIONS				
	INCHES		MM	
	MIN	MAX	MIN	MAX
A	0.460	0.483	11.68	12.28
B	0.307	0.323	7.80	8.20
C	0.030	0.033	0.75	0.85
D	0.071	0.081	1.80	2.05
E	1.488	1.504	37.80	38.20
F	1.248	1.260	31.70	32.00
G	0.917	0.957	23.30	24.30
H	0.996	1.008	25.30	25.60
I	0.579	0.602	14.70	15.30
J	0.492	0.516	12.50	13.10
K	0.161	0.169	4.10	4.30
L	0.161	0.169	4.10	4.30
M	0.181	0.197	4.60	5.00
N	0.165	0.181	4.20	4.60
O	1.181	1.197	30.00	30.40
Q	-0.002	0.004	-0.05	0.10
R	M4*8			

**Electrical Characteristics**, at  $T_J=25\text{ }^{\circ}\text{C}$ , unless otherwise specified. (per diode)

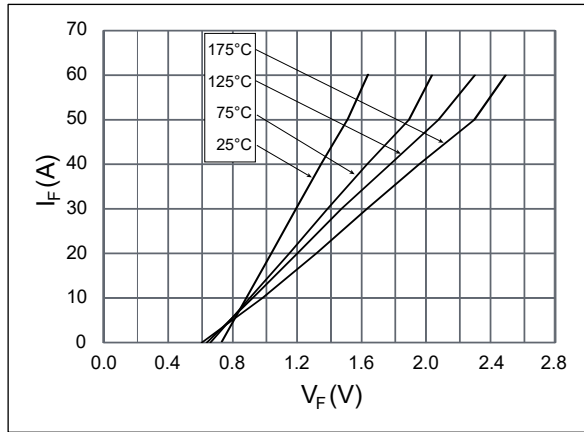
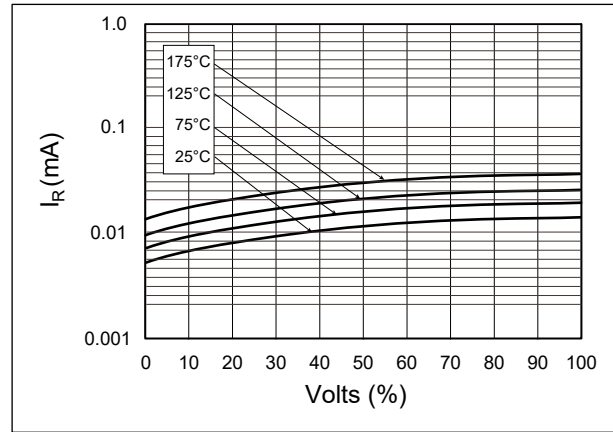
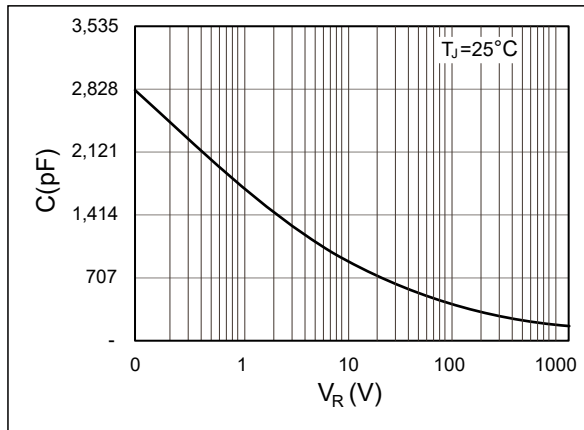
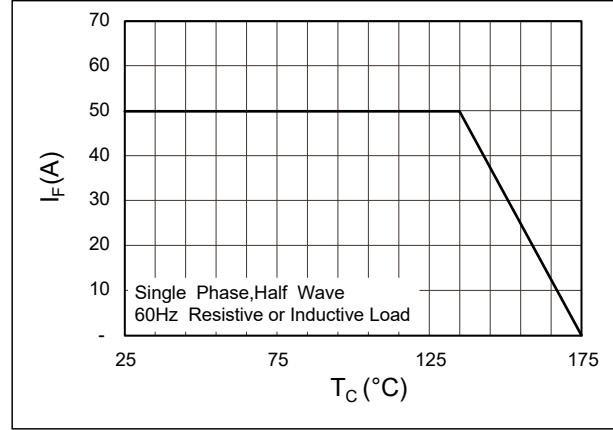
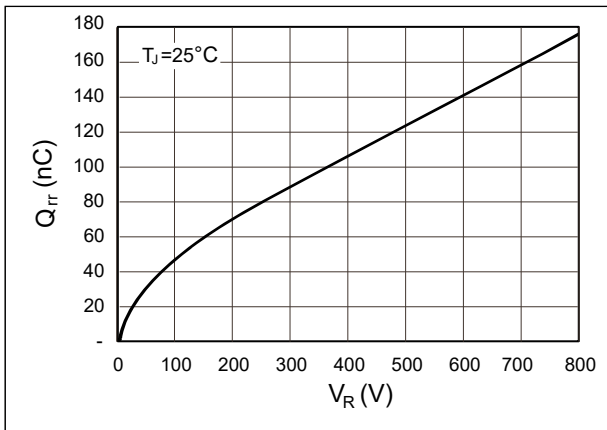
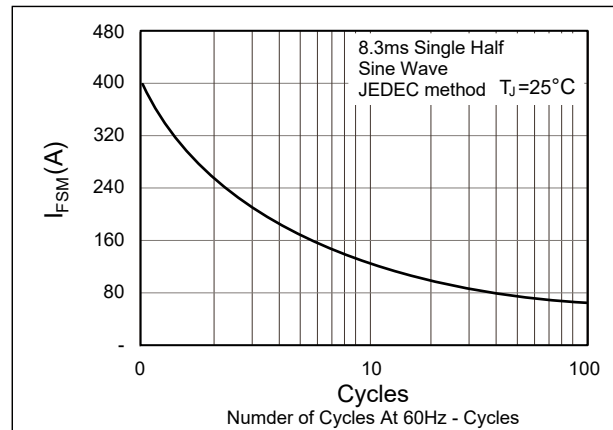
Static Characteristics	Symbol	Conditions	Values			Unit
			min.	typ.	max.	
DC blocking voltage	$V_{DC}$		1,200	-	-	V
Diode forward voltage	$V_F$	$I_F=50\text{A}$ , $T_J=25\text{ }^{\circ}\text{C}$	-	1.5	1.7	V
		$I_F=50\text{A}$ , $T_J=175\text{ }^{\circ}\text{C}$	-	2.3	2.8	
Reverse current	$I_R$	$V_R=1,200\text{V}$ , $T_J=25\text{ }^{\circ}\text{C}$	-	5	25	$\mu\text{A}$
		$V_R=1,200\text{V}$ , $T_J=175\text{ }^{\circ}\text{C}$	-	50	250	

**AC Characteristics** (per diode)

Static Characteristics	Symbol	Conditions	Values			Unit
			min.	typ.	max.	
Total capacitive charge	$Q_{rr}$	$di/dt=1100\text{A}/\mu\text{s}$ $I_F=50\text{A}$ , $V_R=800\text{V}$	-	177	-	nC
Total capacitance	C	$V_R=0\text{V}$ , $f=100\text{KHz}$ $T_J=25\text{ }^{\circ}\text{C}$	-	2,828	-	pF
		$V_R=400\text{V}$ , $f=100\text{KHz}$ $T_J=25\text{ }^{\circ}\text{C}$	-	230	-	
		$V_R=800\text{V}$ , $f=100\text{KHz}$ $T_J=25\text{ }^{\circ}\text{C}$	-	164	-	

**Thermal Characteristics** (per diode)

Static Characteristics	Symbol	Values	Unit
		typ.	
Thermal resistance from junction to case	$R_{\theta JC}$	0.28	$^{\circ}\text{C}/\text{W}$

**Typical Performance**
**Forward Characteristics** (parameterized on  $T_J$ )

**Reverse Characteristics** (parameterized on  $T_J$ )

**Capacitance**

**Current Derating**

**Recovery Charge**

**Forward Surge Current**


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