

SiC SCHOTTKY DIODE MODULE

Features

- High surge current capable
- Zero reverse recovery current
- High bandwidth
- Isolation type package
- **V_{DC} 1700 V**
- **I_F(T_C<135°C) 2×100 A**
- Temperature independent switching behavior

Benefits

- Unipolar rectifier
- Zero switching loss
- Higher efficiency
- Smaller heat sink
- Parallel devices without thermal runaway

Applications

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

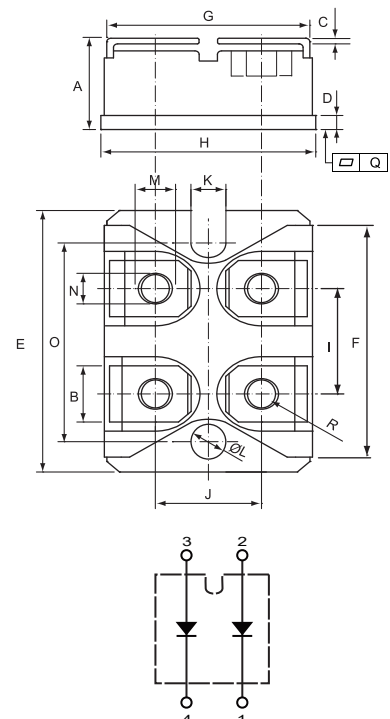
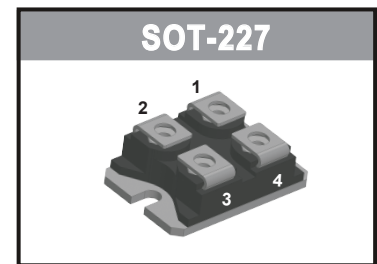
Maximum Ratings

Operating Junction Temperature : -55 °C to +175 °C

Storage Temperature : -55 °C to +175 °C

Part Number	Maximum Recurrent Peak Reverse Voltage	Maximum DC Blocking Voltage
CSRI2×100-170P2B	1700V	1700V

Maximum Rating	Symbol	Conditions	Value	Unit
Continuous forward current (per diode)	I _F	T _C =135 °C	100	A
Surge non-repetitive forward current sine halfwave (per diode)	I _{FSM}	T _C =25 °C, t _p =8.3 ms	800	
		T _C =150 °C, t _p =8.3 ms	500	
Non-repetitive peak forward current (per diode)	I _{F,max}	T _C =25 °C, t _p =10 μs	3200	
		T _C =150 °C, t _p =10 μs	2000	
Repetitive peak reverse voltage	V _{RRM}	T _J =25 °C	1700	V
Isolation voltage between all terminals and baseplate	V _{iso}	50/60 Hz, t=1min I _{ISOL} ≤ 1mA	2500	V
Mounting torque		To heatsink	1.3	Nm
		To terminal	1.1	



parallel

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)

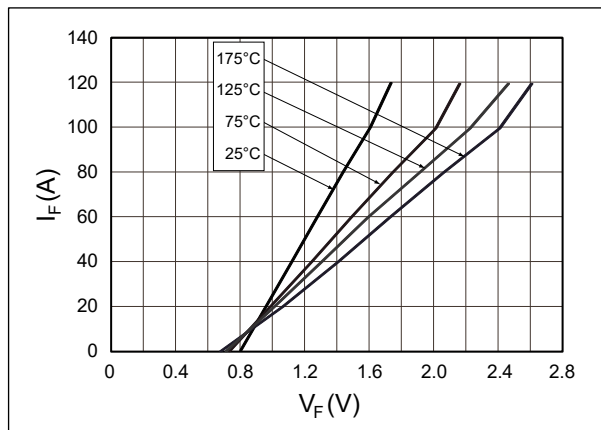
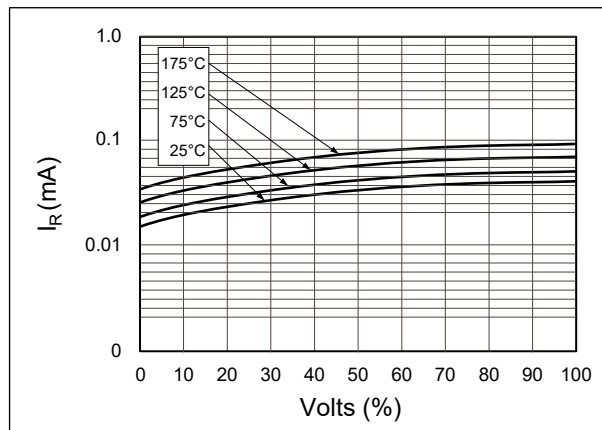
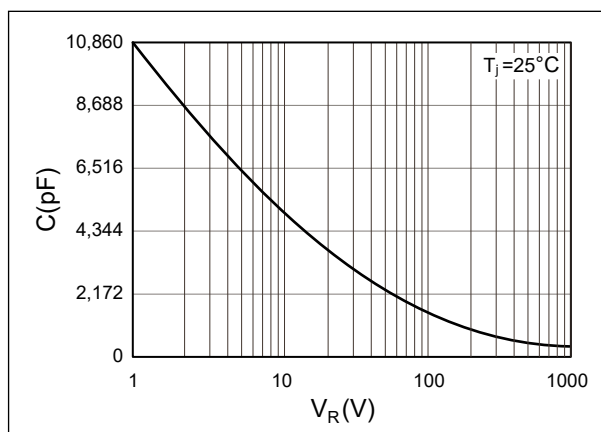
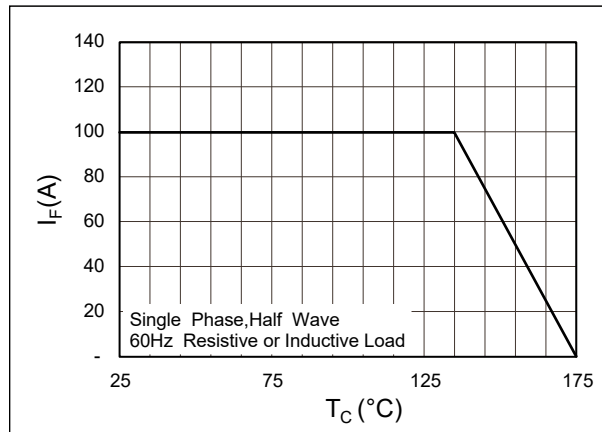
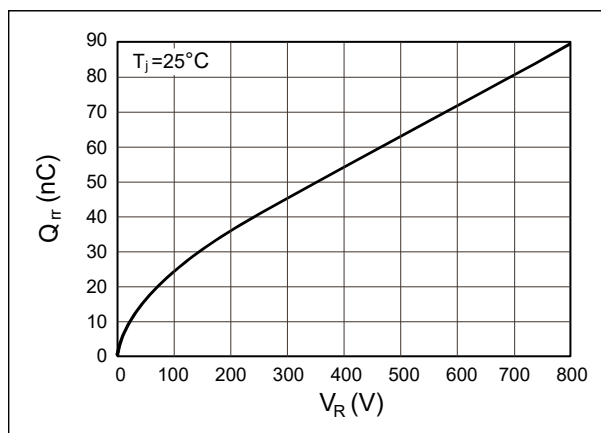
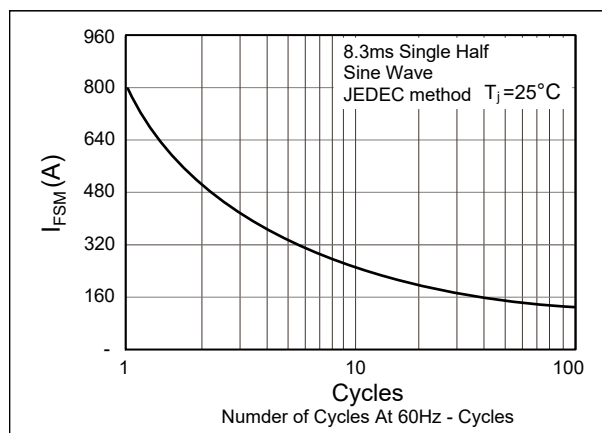
Static Characteristics	Symbol	Conditions	Values			Unit
			min.	typ.	max.	
DC blocking voltage	V_{DC}		1,700	-	-	V
Diode forward voltage	V_F	$I_F=100\text{A}$, $T_j=25\text{ }^{\circ}\text{C}$	-	1.6	1.8	
		$I_F=100\text{A}$, $T_j=175\text{ }^{\circ}\text{C}$	-	2.4	2.9	
Reverse current	I_R	$V_R=1,700\text{V}$, $T_j=25\text{ }^{\circ}\text{C}$	-	60	100	μA
		$V_R=1,700\text{V}$, $T_j=175\text{ }^{\circ}\text{C}$	-	100	500	

AC Characteristics (per diode)

Static Characteristics	Symbol	Conditions	Values			Unit
			min.	typ.	max.	
Total capacitive charge	Q_{rr}	$V_R=800\text{V}$, $I_F=100\text{A}$ $di/dt=333\text{A}/\mu\text{s}$, $T_j=25\text{ }^{\circ}\text{C}$	-	90	-	nC
Total capacitance	C	$V_R=1\text{V}$, $f=1\text{MHz}$ $T_j=25\text{ }^{\circ}\text{C}$	-	10,860	-	pF
		$V_R=800\text{V}$, $f=1\text{MHz}$ $T_j=25\text{ }^{\circ}\text{C}$	-	375	-	
		$V_R=1000\text{V}$, $f=1\text{MHz}$ $T_j=25\text{ }^{\circ}\text{C}$	-	340	-	

Thermal Characteristics (per diode)

Static Characteristics	Symbol	Values	Unit
		typ.	
Thermal resistance from junction to case	$R_{\theta JC}$	0.14	$^{\circ}\text{C}/\text{W}$

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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