DACO SEMICONDUCTOR CO., LTD.

CSRI4×25-120L1B

SiC Schottky Diode
Full Bridge Power Module

Preliminary

V_{RRM}=1,200V
I_F=25A@T_C=135℃

Features

- Zero reverse recovery
- Zero forward recovery
- Temperature-independent switching behavior
- Positive temperature coefficient on VF
- Very low stray inductance
- High level of integration

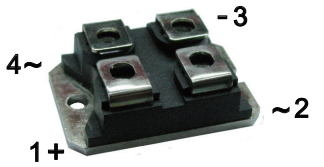
Benefits

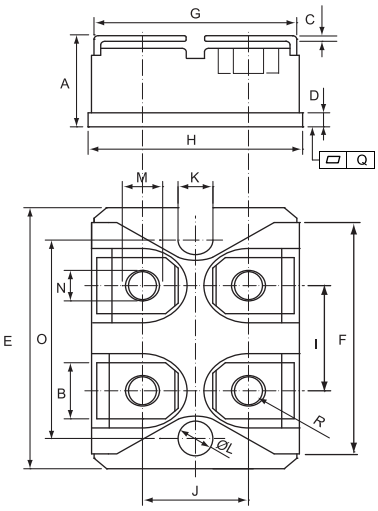
- Outstanding performance at high-frequency operation
- Direct mounting to heatsink (isolated package)
- Low junction-to-case thermal resistance
- RoHS compliant

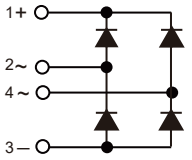
Applications

- Switch mode power supplies rectifier
- Induction heating
- Welding equipment
- High-speed rectifiers

SOT-227







Maximum Ratings

Part Number	Maximum Recurrent Peak Reverse Voltage	Maximum DC Blocking Voltage
CSRI4×25-120L1B	1200V	1200V

Maximum Rating	Symbol	Conditions	Value	Unit
Continuous forward current (per diode)	I_F	Tc=25°C	60	A
		Tc=125°C	30	
		Tc=135°C	25	
Non-repetitive peak forward surge current (per diode)	I_{FSM}	Tc=25°C, tp=8.3ms half sine wave	200	A
		Tc=150°C, tp=8.3ms half sine wave	125	
		Tc=25°C, tp=10μs pulse	800	
Repetitive peak forward surge current (per diode)	I_{FRM}	Tc=25°C, tp=10ms half sine wave, D=0.1	160	A
		Tc=125°C, tp=10ms half sine wave, D=0.1	88	
DC blocking voltage	V_R	Tj=25°C	1200	V
Repetitive peak reverse voltage	V_{RRM}	Tj=25°C	1200	V
Isolation voltage between All Terminals and Baseplate	V_{iso}	50/60Hz, RMS I_{ISOL} ≤ 1mA	2500	V
Operating junction and storage temperature	T_j		175	℃
	T_{stg}		-55 to 175	
Mounting torque		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 °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 =25A, T_j =25 °C	-	1.6	1.8	
		I_F =25A, T_j =175 °C	-	2.4	2.9	
Reverse current	I_R	V_R =1,200V, T_j =25 °C	-	20	50	μA
		V_R =1,200V, T_j =175 °C	-	50	200	

AC Characteristics (per diode)

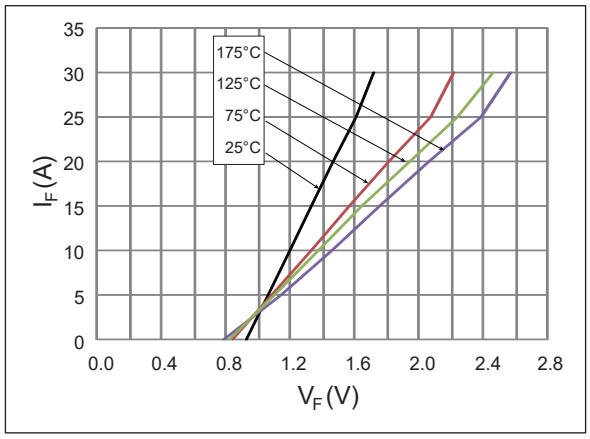
Static Characteristics	Symbol	Conditions	Values			Unit
			min.	typ.	max.	
Total capacitive charge	Q_{rr}	V_R=800V, T_j=25 °C	-	53.34	-	nC
Total capacitance	C	V_R=0V, f=1 MHz T_j=25 °C	-	1,250	-	pF
		V_R=400V, f=1 MHz T_j=25 °C	-	122	-	
		V_R=800V, f=1 MHz T_j=25 °C	-	85	-	

Thermal Characteristics (per diode)

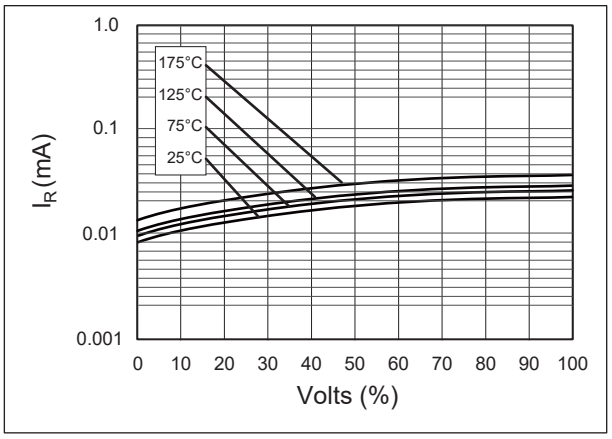
Static Characteristics	Symbol	Values	Unit
		typ.	
Thermal resistance from junction to case	$R_{\theta JC}$	0.56	°C/W

Typical Performance

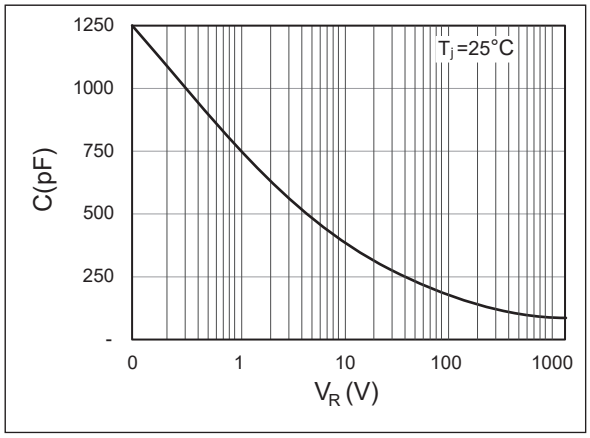
Forward Characteristics (parameterized on T_j)



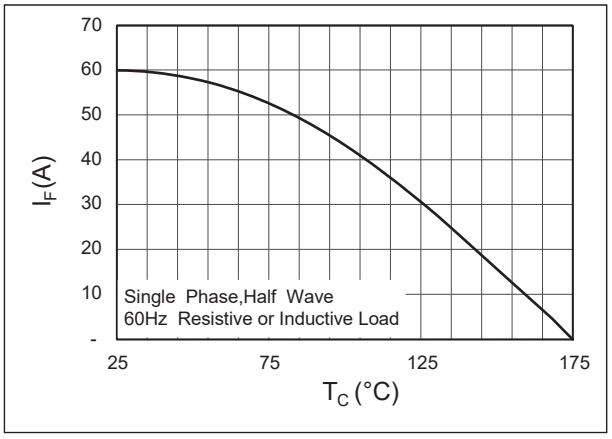
Reverse Characteristics (parameterized on Tj)



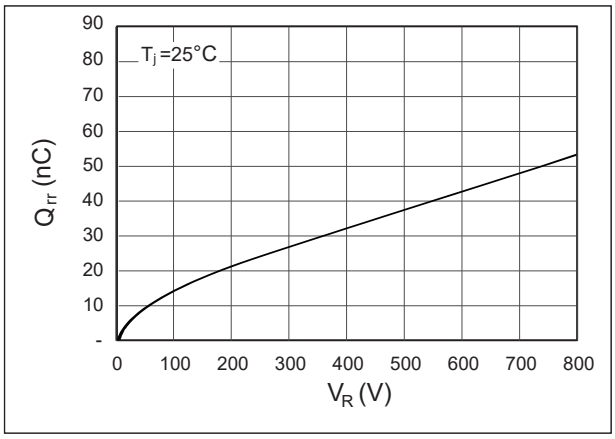
Capacitance



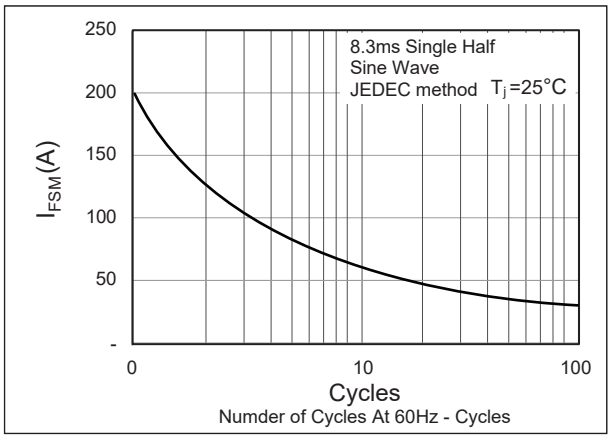
Current Derating



Recovery Charge



Forward Surge Current



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