DACO SEMICONDUCTOR CO., LTD.

CSRI4×35-065L1B

SiC Schottky Diode
Full Bridge Power Module

Preliminary

$V_{RRM}=650V$
$I_F=35A@T_C=135°C$

SOT-227

Features

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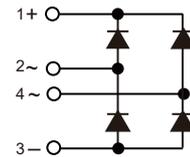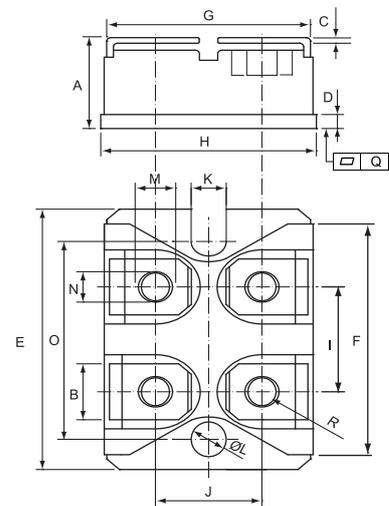- High level of integration

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

Maximum Ratings

Part Number	Maximum Recurrent Peak Reverse Voltage	Maximum DC Blocking Voltage
CSRI4×35-065L1B	650V	650V

Maximum Rating	Symbol	Conditions	Value	Unit
Continuous forward current (per diode)	I_F	Tc=25°C	62	A
		Tc=125°C	40	
		Tc=135°C	35	
Non- repetitive peak forward surge current (per diode)	I_{FSM}	Tc=25°C, tp=10ms half sine wave	204	A
		Tc=125°C, tp=10ms half sine wave	170	
		Tc=25°C, tp=10µs pulse	1058	
Repetitive peak forward surge current (per diode)	I_{FRM}	Tc=25°C, tp=10ms half sine wave, D=0.1	163	A
		Tc=125°C, tp=10ms half sine wave, D=0.1	122	
DC blocking voltage	V_R	Tj=25°C	650	V
Repetitive peak reverse voltage	V_{RRM}	Tj=25°C	650	V
Isolation voltage between All Terminals and Baseplate	V_{iso}	50/60Hz, RMS $I_{ISOL} \leq 1mA$	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.

Static Characteristics	Symbol	Conditions	Values			Unit
			min.	typ.	max.	
DC blocking voltage	V_{DC}	I_R =500µA, T_j =25 °C	650	-	-	V
Forward voltage	V_F	I_F =35A, T_j =25 °C	-	1.50	1.70	V
		I_F =35A, T_j =175 °C	-	1.70	2.00	
Reverse current	I_R	V_R =650V, T_j =25 °C	-	30	60	μA
		V_R =650V, T_j =175 °C	-	60	250	

AC Characteristics

Static Characteristics	Symbol	Conditions	Values			Unit
			min.	typ.	max.	
Total capacitive charge	Q_{rr}	I_F=35A, dI/dt=300A/µs, V_R =400V, T_j =25 °C	-	35	-	nC
Total capacitance	C	V_R=1V, f=1 MHz T_j=25 °C	-	1500	-	pF
		V_R=200V, f=1 MHz T_j=25 °C	-	160	-	
		V_R=400V, f=1 MHz T_j=25 °C	-	156	-	

Thermal Characteristics

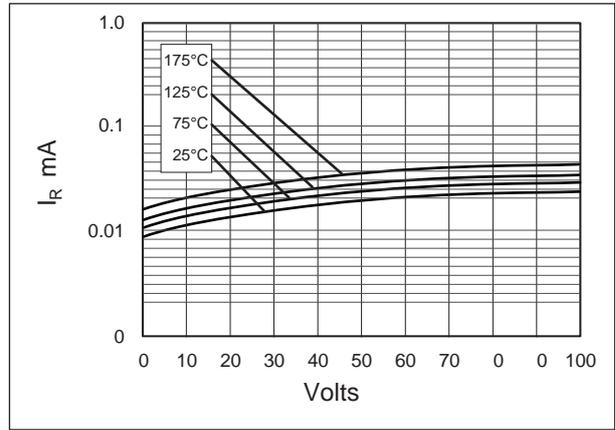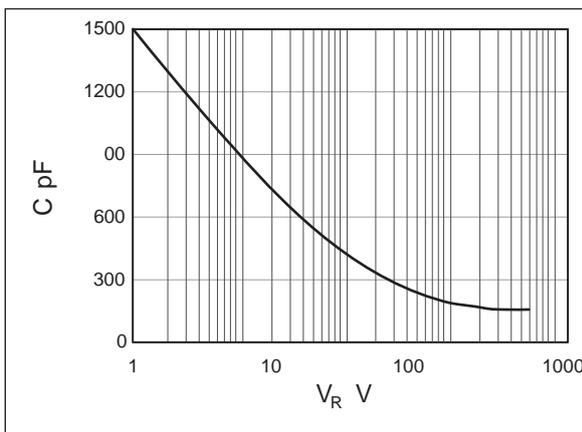| Static Characteristics	Symbol	Values	Unit
		typ.	
Thermal resistance junction to case	$R_{\theta JC}$	0.5	°C/W

Typical Performance

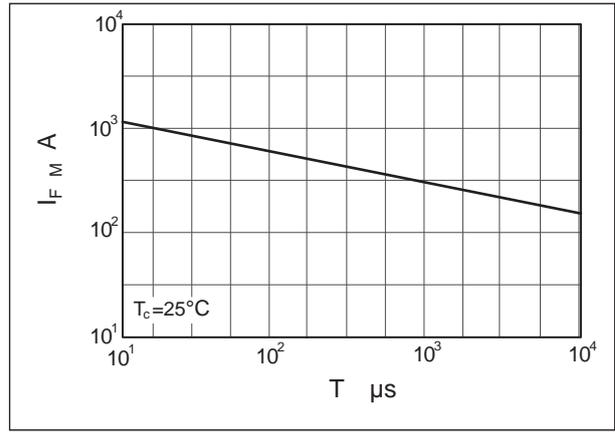**Forward Characteristics**
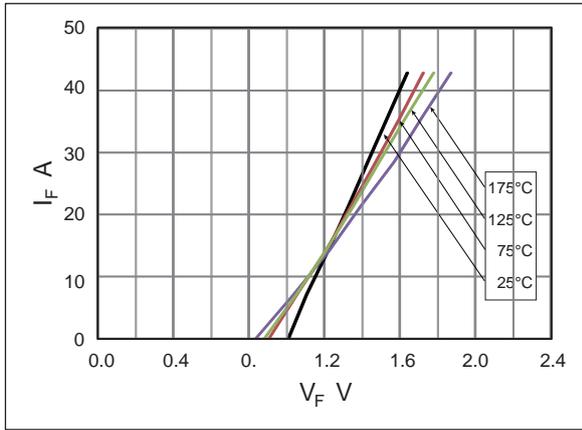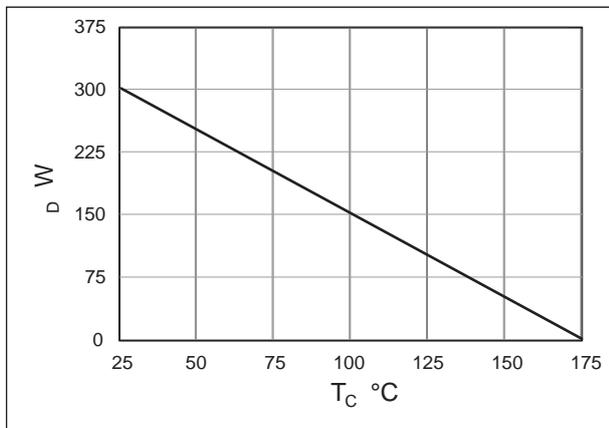

Reverse Characteristics

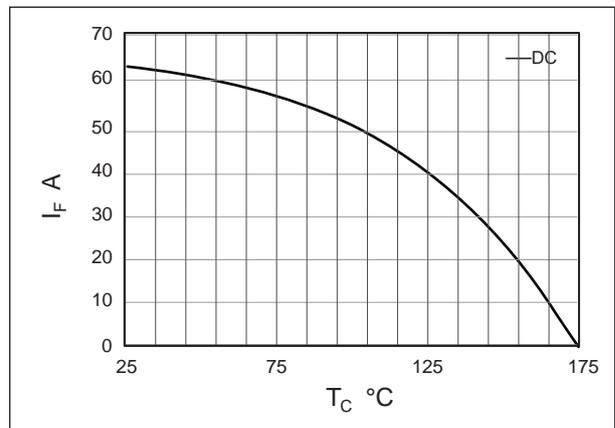**Capacitance vs. Reverse Voltage**

Non-Repetitive Peak Forward Surge Current (Pulse Mode)

Power Derating

Current Derating

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