DACO SEMICONDUCTOR CO., LTD.

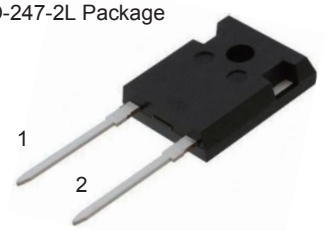
CSR50061P

SiC SCHOTTKY DIODE TYPE 50A

Features

- High surge current capable
- Zero reverse recovery current
- High bandwidth
- RoHS compliant
- Temperature Independent Switching Behavior
- High temperature soldering guaranteed: 260°C / 10 seconds at terminals
- VDC 600 V
- I_F (Per Leg/Device) 50A

TO-247-2L Package



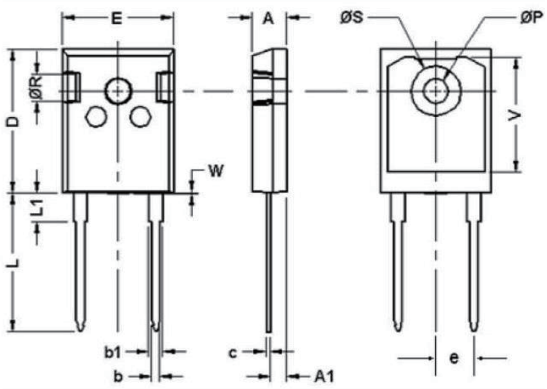
Package Dimensions

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

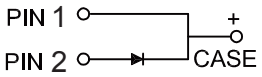
Operating Junction Temperature : - 55 ℃ to +175 ℃

Storage Temperature : -55 ℃ to +175 ℃

Part Number	Maximum Recurrent Peak Reverse Voltage	Maximum DC Blocking Voltage
CSR50061P	600V	600V

Maximum Rating Per Leg	Symbol	Conditions	Value	Unit
Continuous forward current	I_F	T_C=150 °C	50	A
Surge non-repetitive forward current sine halfwave	I_{FSM}	T_C=25 °C, t_p=8.3 ms	400	
		T_C=150 °C, t_p=8.3 ms	250	
Non-repetitive peak forward current	$I_{F,max}$	T_C=25 °C, t_p=10 μs	1000	
Repetitive peak reverse voltage	V_{RRM}	T_j=25 °C	600	V

POS	Inches		Millimeters	
	Min	Max	Min	Max
A	0.185	0.209	4.70	5.31
A1	0.087	0.102	2.21	2.59
b	0.040	0.055	1.02	1.40
b1	0.065	0.088	1.65	2.23
C	0.016	0.031	0.41	0.79
D	0.819	0.845	20.80	21.46
E	0.61	0.640	15.49	16.26
e	0.215	0.215	5.46	5.46
L	0.78	0.80	19.81	20.32
L1	0.164	0.176	4.17	4.47
øP	0.140	0.144	3.56	3.66
Q	0.212	0.244	5.38	6.20
øR	0.135	0.157	3.43	3.99
øS	0.278	0.288	7.06	7.32
V	0.652	0.662	16.56	16.81
W	0.000	0.006	0.00	0.15



Electrical Characteristics, at T_j=25 °C, unless otherwise specified.

Static Characteristics	Symbol	Conditions	Values			Unit
			min.	typ.	max.	
DC blocking voltage	V_{DC}		600	-	-	V
Diode forward voltage	V_F	I_F =50A, T_j =25 °C	-	1.45	1.65	
		I_F =50A, T_j =175 °C	-	1.65	2.00	
Reverse current	I_R	V_R =600V, T_j =25 °C	-	15.0	170	μA
		V_R =600V, T_j =175 °C	-	440	4000	

AC Characteristics

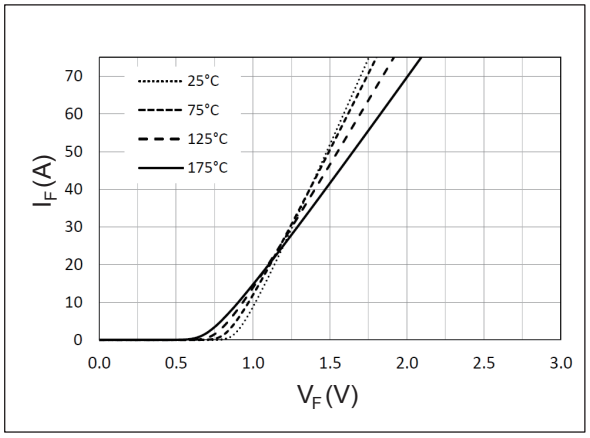
Static Characteristics	Symbol	Conditions	Values			Unit
			min.	typ.	max.	
Total capacitive charge	Q_c	V_R=600V, T_j=25 °C	-	114	-	nC
Total capacitance	C	V_R=1V, f=1 MHz T_j=25 °C	-	2635	-	pF
		V_R=300V, f=1 MHz T_j=25 °C	-	234	-	
		V_R=600V, f=1 MHz T_j=25 °C	-	190	-	

Thermal Characteristics

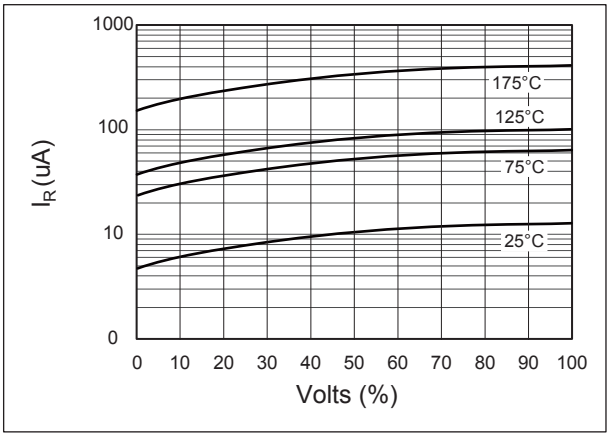
Static Characteristics	Symbol	Values	Unit
		typ.	
Thermal resistance from junction to case	$R_{\theta JC}$	0.33	°C/W

Typical Performance

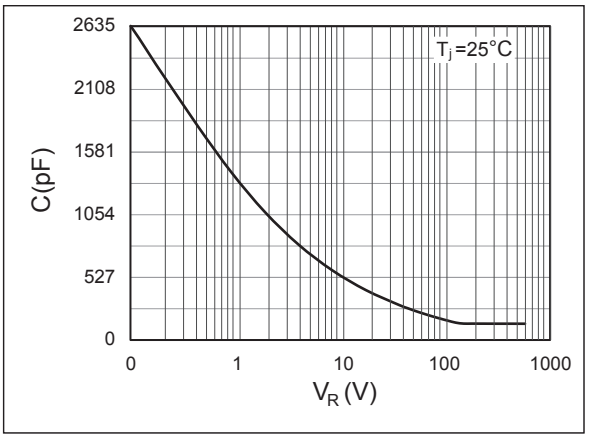
Forward Characteristics (parameterized on T_j)



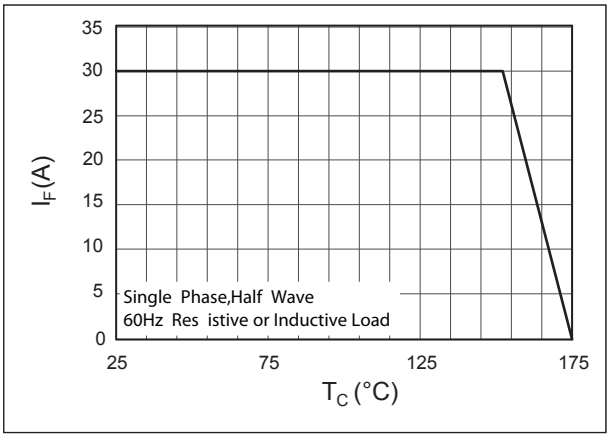
Reverse Characteristics (parameterized on Tj)



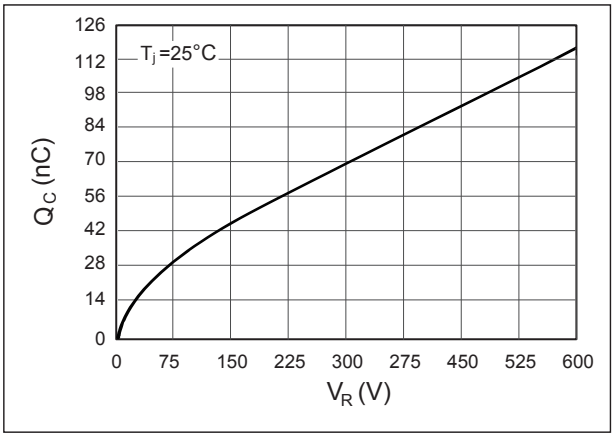
Capacitance



Current Derating



Recovery Charge



Forward Surge Current