DACO SEMICONDUCTOR CO., LTD.

DACSB600120CT

SiC SCHOTTKY DIODE TYPE 2×300A

Features

Preliminary

- High surge current capable
- Zero reverse recovery current
- High bandwidth
- Temperature Independent Switching Behavior
- VDC 1200 V
- I_F (T_C<135°C) 2×300 A

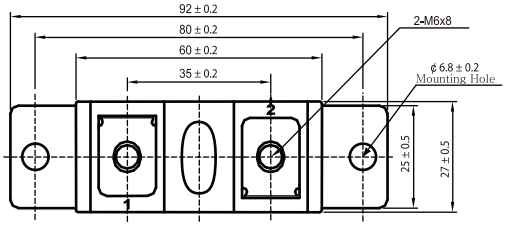
Benefits

- 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

Dimensions in mm (1 mm = 0.0394")

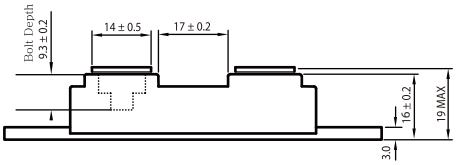


Maximum Ratings

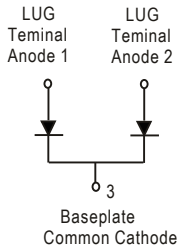
Operating Junction Temperature : - 55 ℃ to +175 ℃

Storage Temperature : -55 ℃ to +175 ℃

Part Number	Maximum Recurrent Peak Reverse Voltage	Maximum DC Blocking Voltage
DACSB600120CT	1200V	1200V



Maximum Rating	Symbol	Conditions	Value	Unit
Continuous forward current (per leg)	I_F	T_C=135 °C	300	A
Surge non-repetitive forward current sine halfwave (per leg)	I_{FSM}	T_C=25 °C, t_p=8.3 ms	2400	
		T_C=150 °C, t_p=8.3 ms	1750	
Non-repetitive peak forward current (per leg)	$I_{F,max}$	T_C=25 °C, t_p=10 μs	11200	
		T_C=150 °C, t_p=10 μs	7000	
Repetitive peak reverse voltage	V_{RRM}	T_j=25 °C	1200	V
Mounting torque		M6 Screw	3~4.7	N-m



Electrical Characteristics, at T_j=25 °C, unless otherwise specified. (per leg)

Static Characteristics	Symbol	Conditions	Values			Unit
			min.	typ.	max.	
DC blocking voltage	V_{DC}		1,200	-	-	V
Diode forward voltage	V_F	I_F =300A, T_j =25 °C	-	1.6	1.8	
		I_F =300A, T_j =175 °C	-	2.4	2.9	
Reverse current	I_R	V_R =1,200V, T_j =25 °C	-	10	130	μA
		V_R =1,200V, T_j =175 °C	-	140	1,400	

AC Characteristics (per leg)

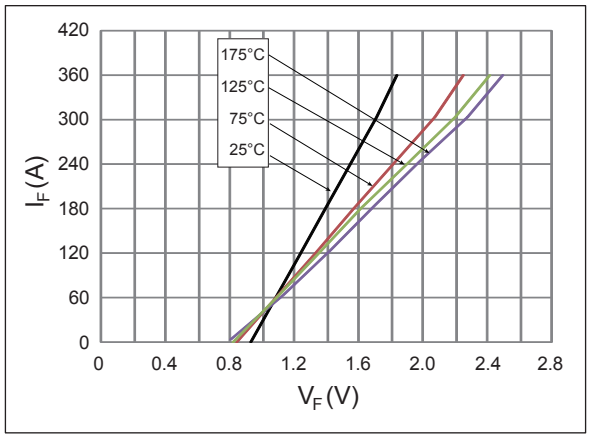
Static Characteristics	Symbol	Conditions	Values			Unit
			min.	typ.	max.	
Total capacitive charge	Q_{rr}	V_R=1,200V, T_j=25 °C	-	926	-	nC
Total capacitance	C	V_R=0V, f=1 MHz T_j=25 °C	-	16,680	-	pF
		V_R=600V, f=1 MHz T_j=25 °C	-	1,657	-	
		V_R=1,000V, f=1 MHz T_j=25 °C	-	1,551	-	

Thermal Characteristics (per leg)

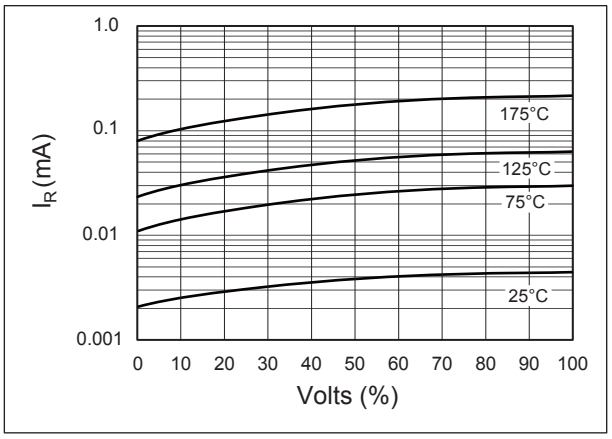
Static Characteristics	Symbol	Values	Unit
		typ.	
Thermal resistance from junction to case	$R_{\theta JC}$	0.023	°C/W

Typical Performance

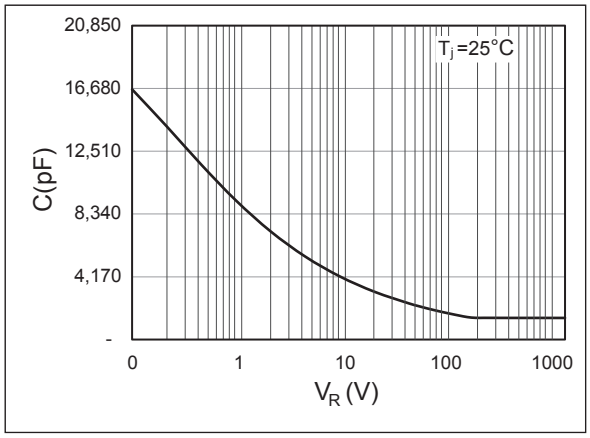
Forward Characteristics (parameterized on T_j)



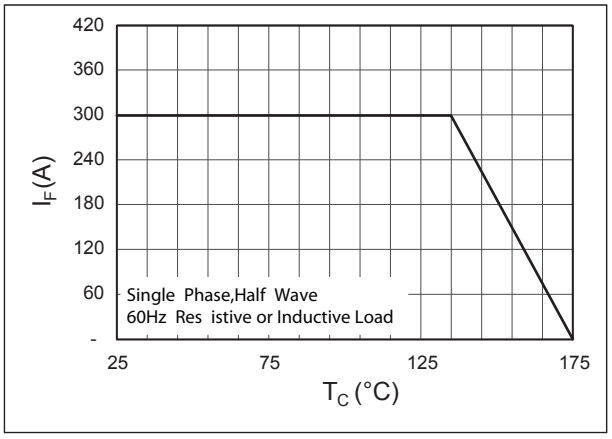
Reverse Characteristics (parameterized on Tj)



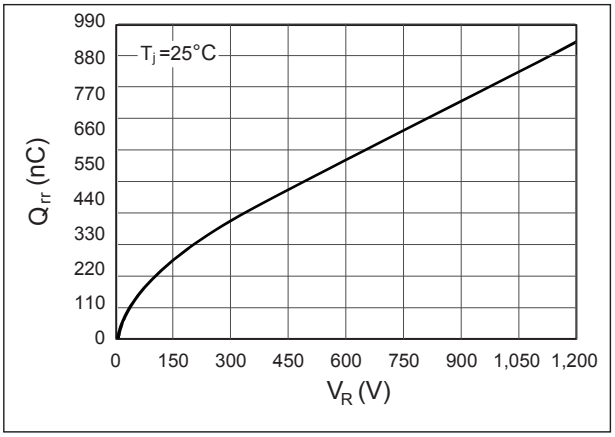
Capacitance



Current Derating



Recovery Charge



Forward Surge Current