



SiC SCHOTTKY DIODE TYPE 2x300A

Preliminary

Features

- High surge current capable
- Zero reverse recovery current
- High bandwidth
- Temperature Independent Switching Behavior
- VDC 1200 V
- $I_F$  ( $T_C < 135^\circ\text{C}$ ) 2x300 A

Benefits

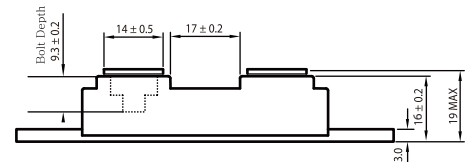
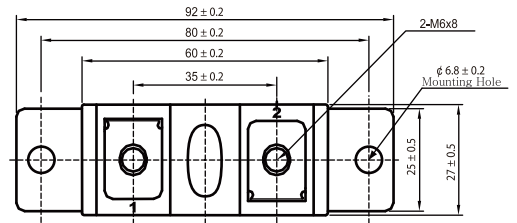
- Unipolar rectifier
- Zero switching loss
- Higher efficiency
- Smaller heat sink
- Parallel devices without thermal runaway



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")



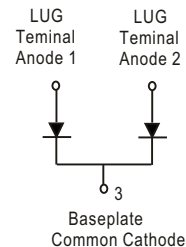
Maximum Ratings

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

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

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)	$I_F$	$T_C = 135^\circ\text{C}$	300	A
Surge non-repetitive forward current sine halfwave (per leg)	$I_{FSM}$	$T_C = 25^\circ\text{C}, t_p = 8.3\text{ ms}$	2400	
		$T_C = 150^\circ\text{C}, t_p = 8.3\text{ ms}$	1750	
Non-repetitive peak forward current (per leg)	$I_{F,max}$	$T_C = 25^\circ\text{C}, t_p = 10\ \mu\text{s}$	11200	
		$T_C = 150^\circ\text{C}, t_p = 10\ \mu\text{s}$	7000	
Repetitive peak reverse voltage	$V_{RRM}$	$T_J = 25^\circ\text{C}$	1200	V
Mounting torque		M6 Screw	3~4.7	N-m





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

Static Characteristics	Symbol	Conditions	Values			Unit
			min.	typ.	max.	
DC blocking voltage	V <sub>DC</sub>		1,200	-	-	V
Diode forward voltage	V <sub>F</sub>	I <sub>F</sub> =25A, T <sub>j</sub> =25 °C	-	1.6	1.8	
		I <sub>F</sub> =25A, T <sub>j</sub> =175 °C	-	2.4	2.9	
Reverse current	I <sub>R</sub>	V <sub>R</sub> =1,200V, T <sub>j</sub> =25 °C	-	10	130	μA
		V <sub>R</sub> =1,200V, T <sub>j</sub> =175 °C	-	140	1,400	

AC Characteristics (per leg)

Static Characteristics	Symbol	Conditions	Values			Unit
			min.	typ.	max.	
Total capacitive charge	Q <sub>rr</sub>	V <sub>R</sub> =1,200V, T <sub>j</sub> =25 °C	-	926	-	nC
Total capacitance	C	V <sub>R</sub> =0V, f=1 MHz T <sub>j</sub> =25 °C	-	16,680	-	pF
		V <sub>R</sub> =600V, f=1 MHz T <sub>j</sub> =25 °C	-	1,657	-	
		V <sub>R</sub> =1,000V, f=1 MHz T <sub>j</sub> =25 °C	-	1,551	-	

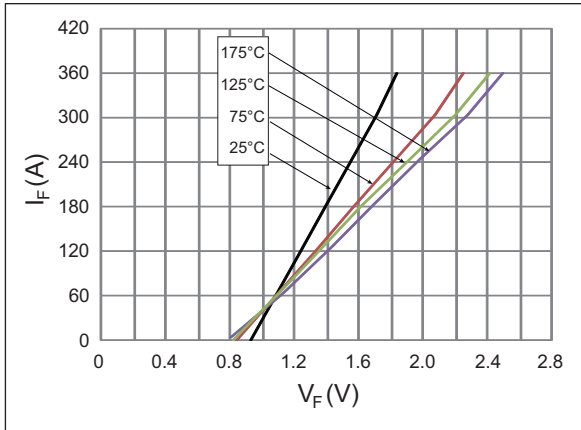
Thermal Characteristics (per leg)

Static Characteristics	Symbol	Values	Unit
		typ.	
Thermal resistance from junction to case	R <sub>θJC</sub>	0.023	°C/W

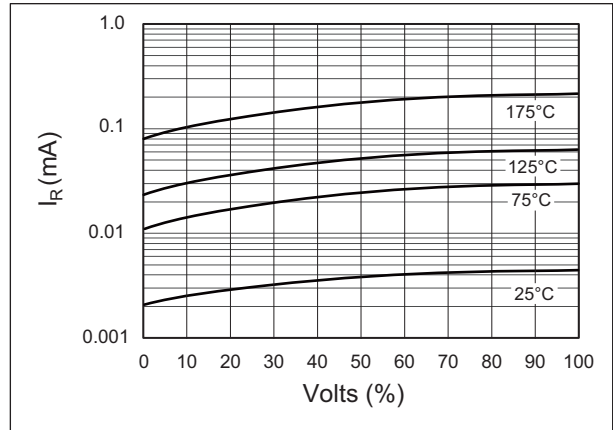


Typical Performance

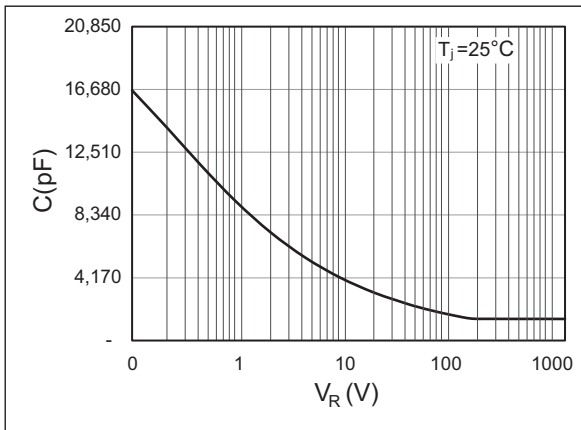
Forward Characteristics (parameterized on  $T_j$ )



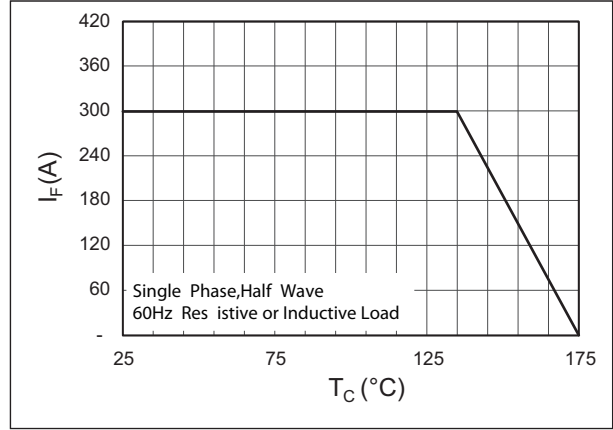
Reverse Characteristics (parameterized on  $T_j$ )



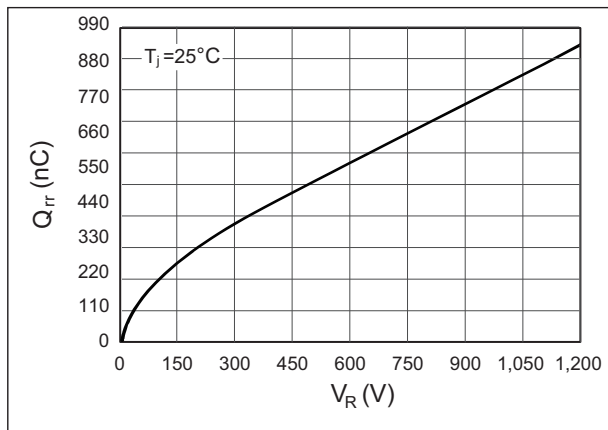
Capacitance



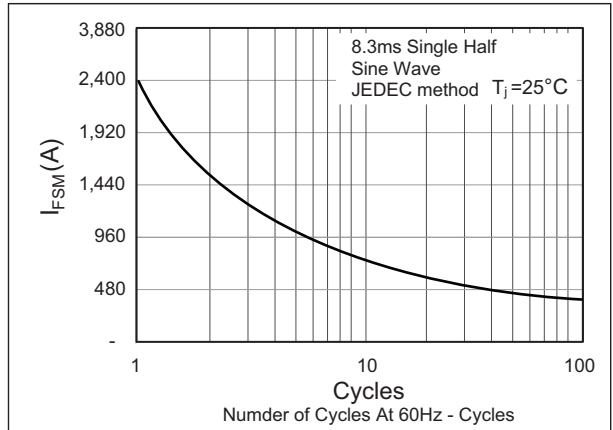
Current Derating



Recovery Charge



Forward Surge Current



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