

SiC SCHOTTKY DIODE TYPE 450A

Features

- High surge current capable
- Zero reverse recovery current
- High bandwidth
- Temperature independent switching behavior
- V_{DC} 1200 V

Benefits

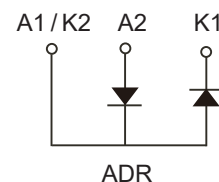
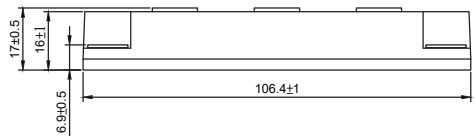
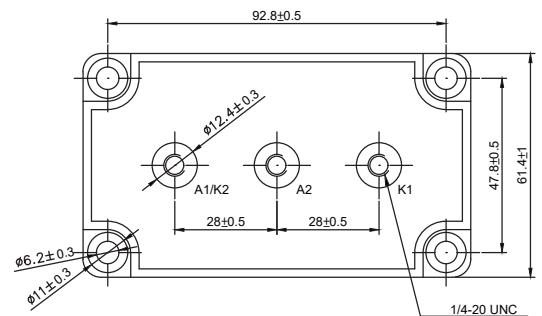
- Unipolar rectifier
- Zero switching loss
- Higher efficiency
- Smaller heat sink
- Parallel devices without thermal runaway

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
CSRP2×450-120F1B	1200V	1200V

Maximum Rating	Symbol	Conditions	Value	Unit	
Continuous forward current (per diode)	I_F	$T_C=100\text{ }^\circ\text{C}$	450	A	
Surge non-repetitive forward current sine halfwave (per diode)	I_{FSM}	$T_C=25\text{ }^\circ\text{C}$, $t_p=8.3\text{ ms}$	3600		
		$T_C=150\text{ }^\circ\text{C}$, $t_p=8.3\text{ ms}$	2625		
Non-repetitive peak forward current (per diode)	$I_{F,max}$	$T_C=25\text{ }^\circ\text{C}$, $t_p=10\text{ }\mu\text{s}$	16800		
		$T_C=150\text{ }^\circ\text{C}$, $t_p=10\text{ }\mu\text{s}$	10500		
Repetitive peak reverse voltage	V_{RRM}	$T_J=25\text{ }^\circ\text{C}$	1200	V	
Isolation voltage	V_{iso}	50/60 Hz, $t=1\text{ min}$ $I_{ISOL} \leq 1\text{ mA}$	3000	V	
Mounting torque	To heatsink To terminal	M_d	M6 1/4-20 unc	3-5 3-5	Nm
Weight	W_t		324	g	

Electrical Characteristics, at $T_J = 25\text{ °C}$, unless otherwise specified. (per diode)

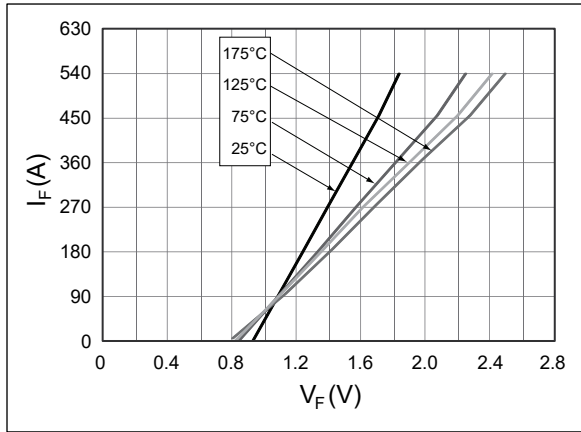
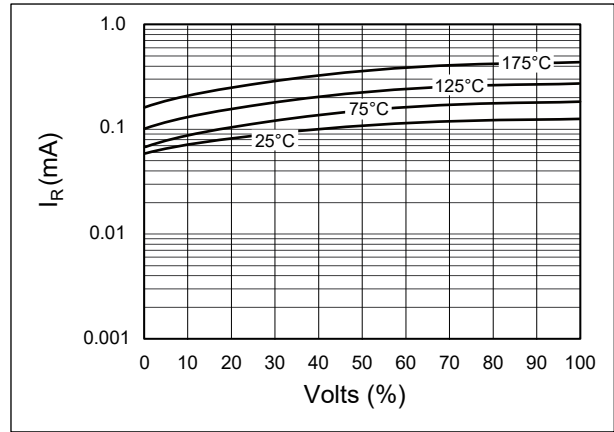
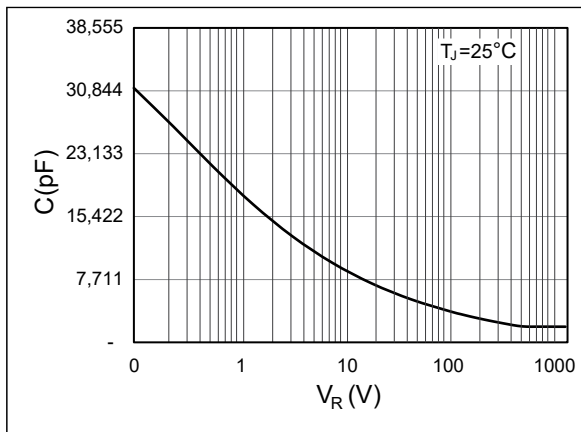
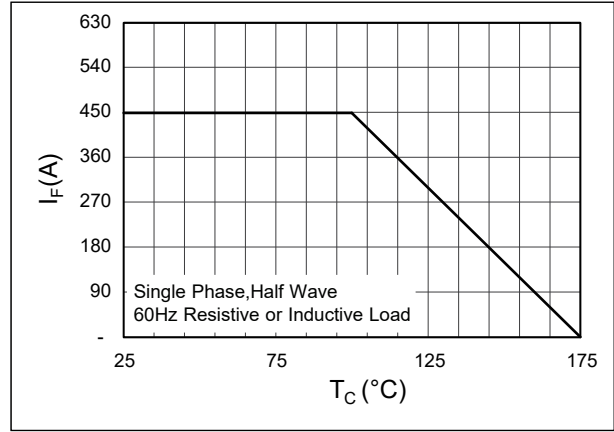
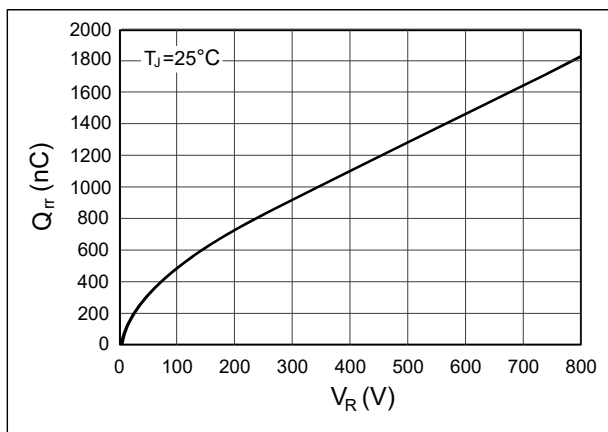
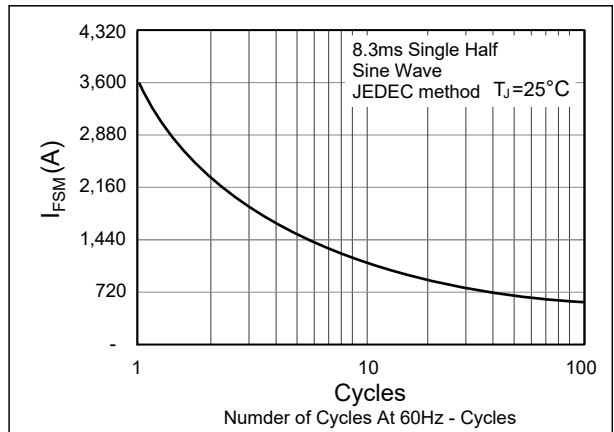
Static Characteristics	Symbol	Conditions	Values			Unit
			min.	typ.	max.	
DC blocking voltage	V_{DC}		1,200	-	-	V
Diode forward voltage	V_F	$I_F = 450\text{A}$, $T_J = 25\text{ °C}$	-	1.6	1.8	
		$I_F = 450\text{A}$, $T_J = 175\text{ °C}$	-	2.1	2.4	
Reverse current	I_R	$V_R = 1,200\text{V}$, $T_J = 25\text{ °C}$	-	100	200	μA
		$V_R = 1,200\text{V}$, $T_J = 175\text{ °C}$	-	150	500	

AC Characteristics (per diode)

Characteristics	Symbol	Conditions	Values			Unit
			min.	typ.	max.	
Total capacitive charge	Q_{rr}	$V_R = 800\text{V}$, $T_J = 25\text{ °C}$	-	1,824	-	nC
Total capacitance	C	$V_R = 0\text{V}$, $f = 1\text{ MHz}$ $T_J = 25\text{ °C}$	-	30,845	-	pF
		$V_R = 400\text{V}$, $f = 1\text{ MHz}$ $T_J = 25\text{ °C}$	-	2,311	-	
		$V_R = 800\text{V}$, $f = 1\text{ MHz}$ $T_J = 25\text{ °C}$	-	1,736	-	

Thermal Characteristics (per diode)

Characteristics	Symbol	Values	Unit
		typ.	
Thermal resistance from junction to case	$R_{\theta JC}$	0.073	$^{\circ}\text{C/W}$

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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