

## 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

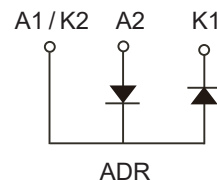
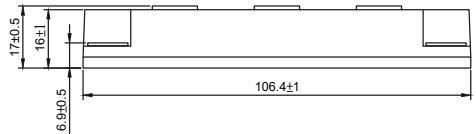
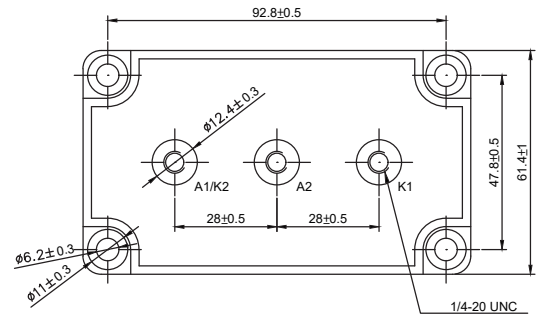
- Unipolar rectifier
- Zero switching loss
- Higher efficiency
- Smaller heat sink
- Parallel devices without thermal runaway

### 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	$M_d$	To heatsink	3-5	Nm
		To terminal	3-5	
Weight	$W_t$		324	g

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

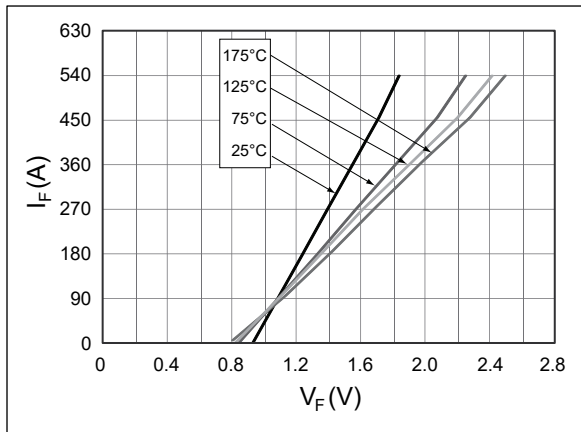
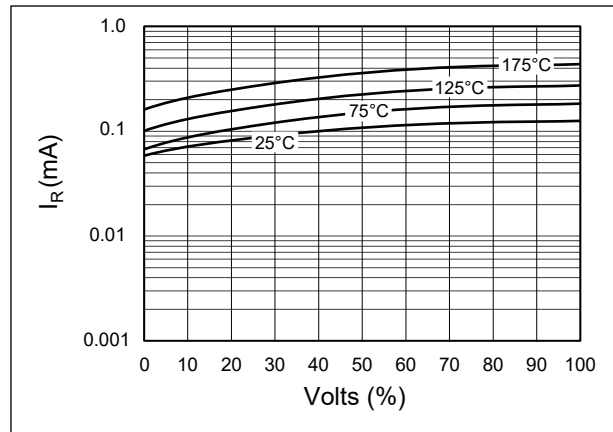
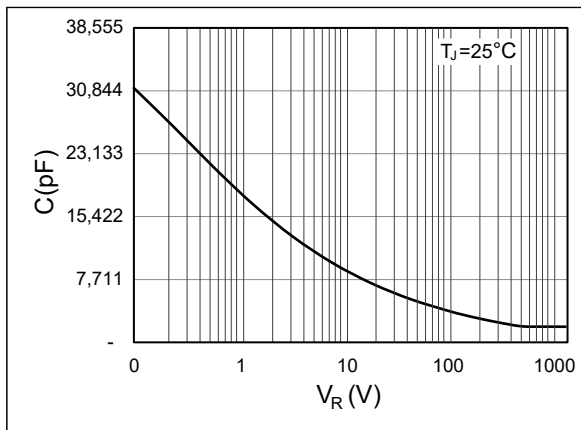
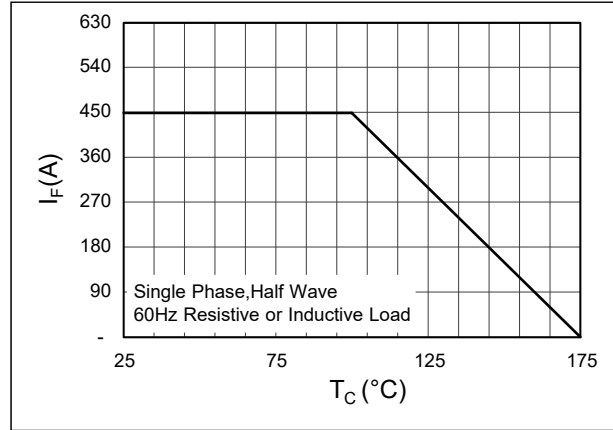
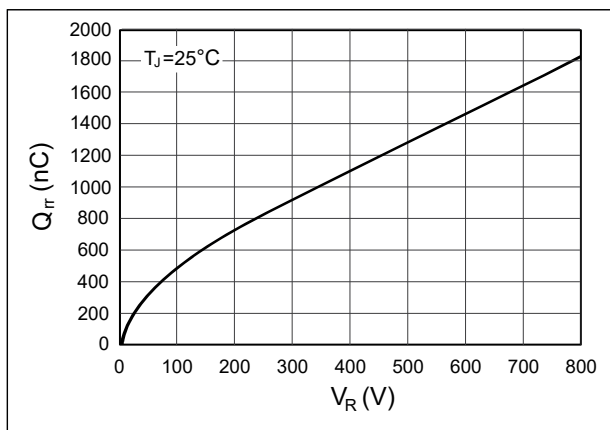
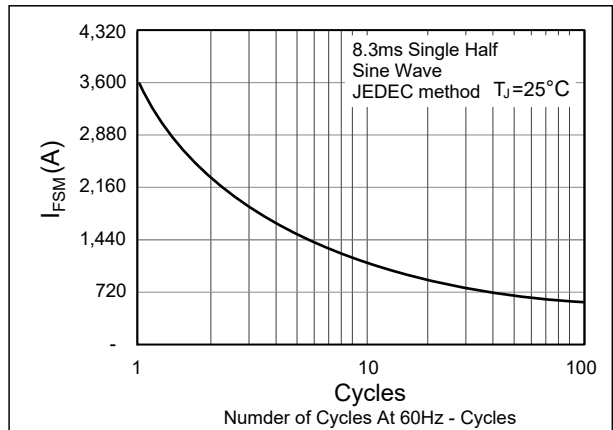
Static Characteristics	Symbol	Conditions	Values			Unit
			min.	typ.	max.	
DC blocking voltage	$V_{DC}$		1,200	-	-	V
Diode forward voltage	$V_F$	$I_F = 450\text{A}$ , $T_J = 25\text{ °C}$	-	1.6	1.8	
		$I_F = 450\text{A}$ , $T_J = 175\text{ °C}$	-	2.1	2.4	
Reverse current	$I_R$	$V_R = 1,200\text{V}$ ,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

**AC Characteristics** (per diode)

Static 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)

Static 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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