

## SiC SCHOTTKY DIODE TYPE MODULE 450A

### Features

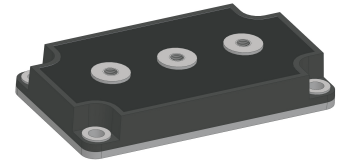
- High surge current capable
- Zero reverse recovery current
- High bandwidth
- Temperature independent switching behavior
- Aluminum nitride (AlN) substrate for improved thermal performance
- $V_{DC}$  1200 V

### Benefits

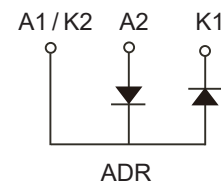
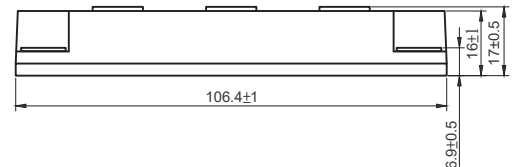
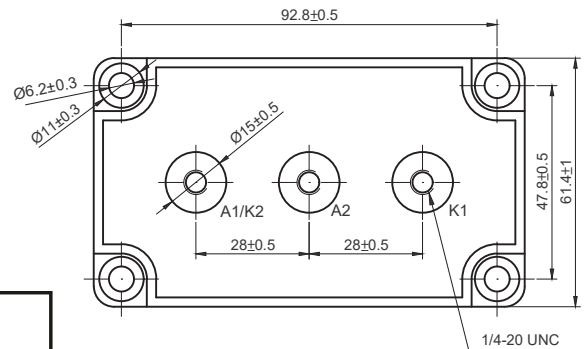
- Unipolar rectifier
- Zero switching loss
- Higher efficiency
- Smaller heat sink
- Parallel devices without thermal runaway

### Applications

- Motor drives
- Switch mode power supplies
- Ev chargers
- Solar inverters
- Welding equipment
- Power factor correction
- Diode snubber
- Automotive
- Induction heating

**10662 L**


Dimensions in mm (1 mm = 0.0394")



### Maximum Ratings

 Operating Junction Temperature :  $-40^{\circ}\text{C}$  to  $+175^{\circ}\text{C}$ 

 Storage Temperature :  $-40^{\circ}\text{C}$  to  $+125^{\circ}\text{C}$ 

Part Number	Maximum Recurrent Peak Reverse Voltage	Maximum DC Blocking Voltage
CSRP2×450-120F2B	1200V	1200V

Maximum Rating	Symbol	Conditions	Value	Unit	
Continuous forward current (per diode)	$I_F$	$T_C=80^{\circ}\text{C}$	450	A	
Surge non-repetitive forward current sine halfwave (per diode)	$I_{FSM}$	$T_C=25^{\circ}\text{C}$ , $t_p=8.3\text{ ms}$	3000		
		$T_C=150^{\circ}\text{C}$ , $t_p=8.3\text{ ms}$	2200		
Repetitive peak reverse voltage	$V_{RRM}$	$T_J=25^{\circ}\text{C}$	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	$W_t$		348	g	

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

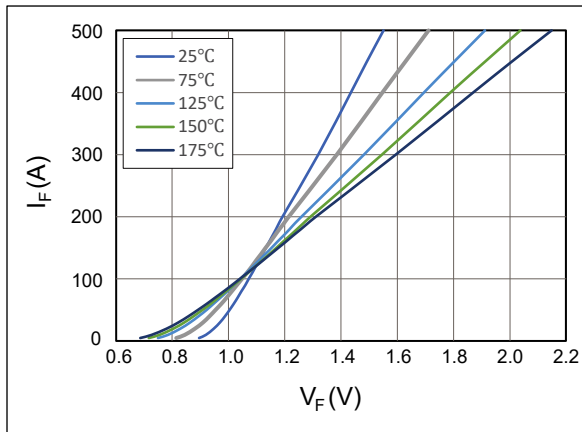
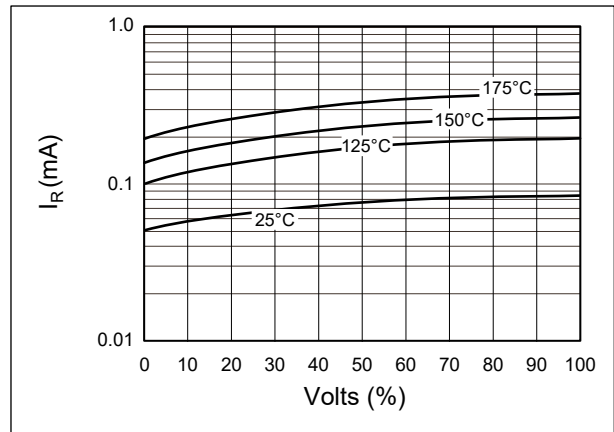
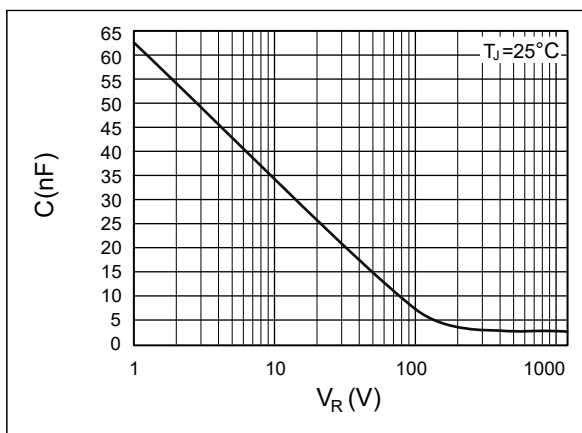
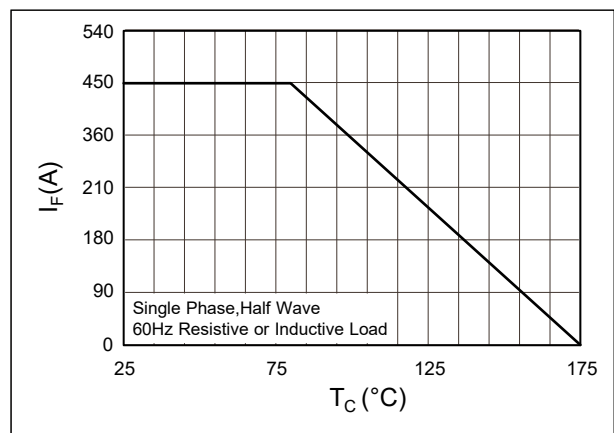
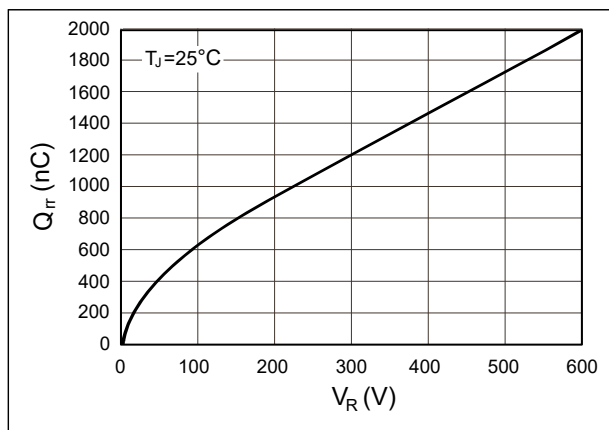
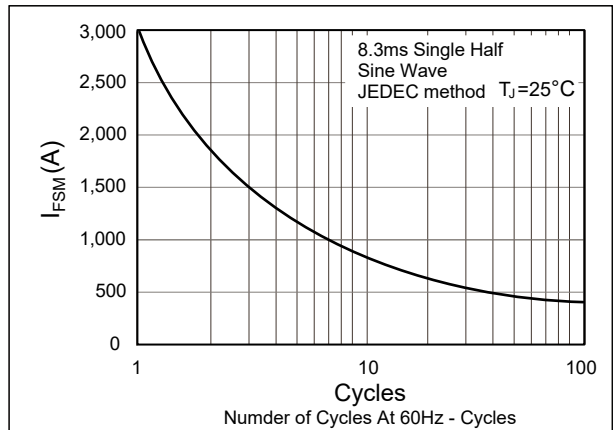
Static Characteristics	Symbol	Conditions	Values			Unit
			min.	typ.	max.	
DC blocking voltage	$V_{DC}$		1,200	-	-	V
Diode forward voltage	$V_F$	$I_F = 450\text{A}, T_J = 25^\circ\text{C}$	-	1.5	1.8	
		$I_F = 450\text{A}, T_J = 175^\circ\text{C}$	-	2.0	2.3	
Reverse current	$I_R$	$V_R = 1,200\text{V}, T_J = 25^\circ\text{C}$	-	0.09	0.20	mA
		$V_R = 1,200\text{V}, T_J = 175^\circ\text{C}$	-	0.20	0.50	

**AC Characteristics** (per diode)

Characteristics	Symbol	Conditions	Values			Unit
			min.	typ.	max.	
Total capacitive charge	$Q_{rr}$	$V_R = 600\text{V}, T_J = 25^\circ\text{C}$	-	2,000	-	nC
Total capacitance	C	$V_R = 400\text{V}, f = 1\text{ MHz}$ $T_J = 25^\circ\text{C}$	-	2,800	-	pF
		$V_R = 800\text{V}, f = 1\text{ MHz}$ $T_J = 25^\circ\text{C}$	-	2,750	-	

**Thermal Characteristics** (per diode)

Characteristics	Symbol	Values	Unit
		typ.	
Thermal resistance from junction to case	$R_{\theta JC}$	0.067	$^\circ\text{C/W}$

**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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