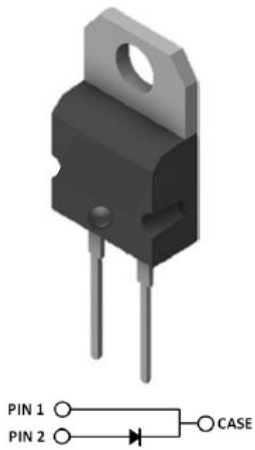


<b>Silicon Carbide Schottky Diode</b>	<b>REVERSE VOLTAGE 650 Volts FORWARD CURRENT 10 Amperes</b>
<p><b>FEATURES</b></p> <ul style="list-style-type: none"> <li>• No reverse recovery/No forward recovery</li> <li>• 650-volts Schottky Rectifier</li> <li>• High Frequency Operation</li> <li>• Temperature independent switching behavior</li> <li>• Extremely Fast Switching</li> <li>• Positive Temperature Coefficient on VF</li> </ul> <p><b>MECHANICAL DATA</b></p> <ul style="list-style-type: none"> <li>• Case: TO-220AC</li> <li>• Polarity: Cathode Band</li> </ul>	<p><b>TO-220AC</b></p>  <p>The image shows a 3D perspective view of a TO-220AC package with a metal tab and two leads. Below it is a schematic diagram of the diode symbol with labels for PIN 1, PIN 2, and CASE.</p>

### MAXIMUM RATINGS AND ELECTRICAL CHARACTERISTICS

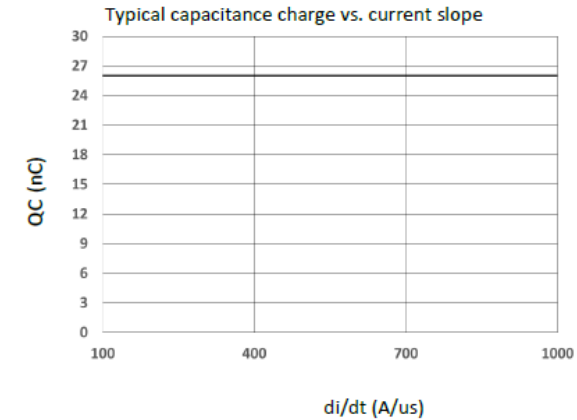
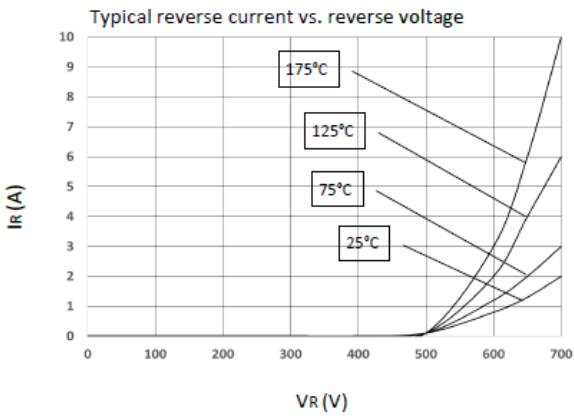
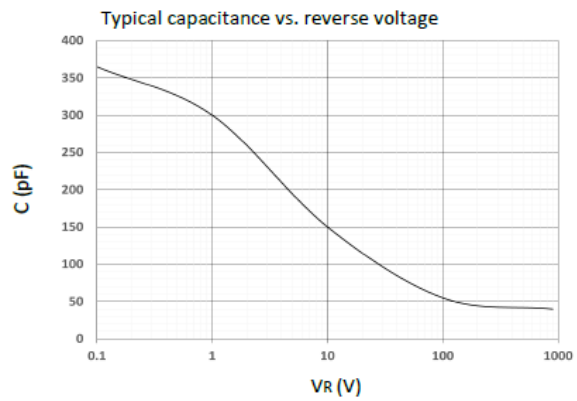
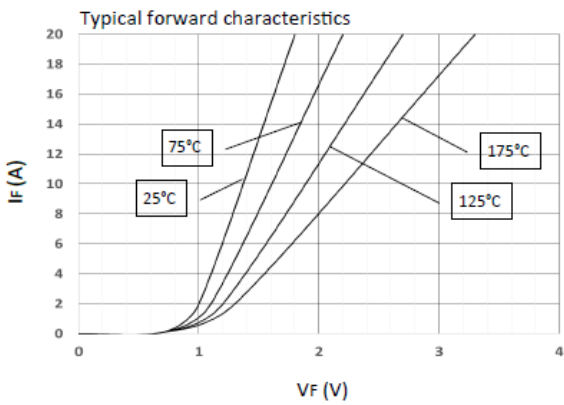
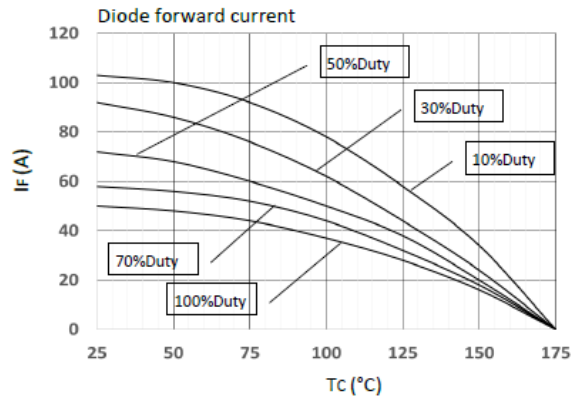
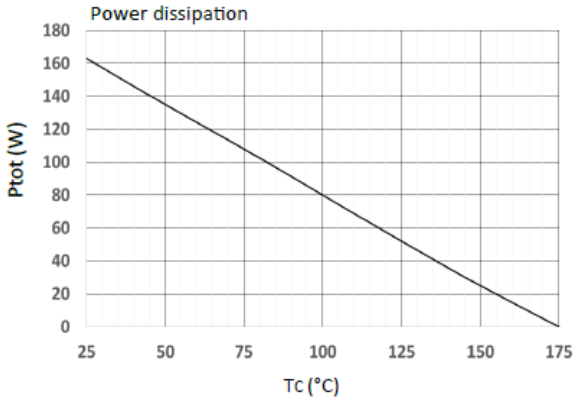
Ratings at 25 °C ambient temperature unless otherwise specified.  
Single phase, half wave, 60Hz, resistive or inductive load.  
For capacitive load, derate current by 20%

Characteristics	Symbol	SiC1065ST		Unit
Maximum Repetitive Peak Reverse Voltage	$V_{RRM}$	650		V
RMS Reverse Voltage	$V_{RMS}$	650		V
Maximum DC blocking voltage	$V_{DC}$	650		V
Diode Forward Voltage $I_F=10A$ $T_J=25^{\circ}C$ $T_J=175^{\circ}C$	$V_F$	Typ.	Max.	V
		1.42	1.7	
Reverse Current $V_R=650V$ $T_J=25^{\circ}C$ $T_J=175^{\circ}C$	$I_R$	23	100	$\mu A$
		50	200	
Continuous forward current $TC<140^{\circ}C$ $TC<150^{\circ}C$	$I_F$		14	A
			12	
Surge non-repetitive forward current Half Sine-wave $TC=25^{\circ}C, tp=10ms, D=0.3$ $TC=110^{\circ}C, tp=10ms, D=0.3$	$I_{FSM}$		95	A
			75	
Diode dv/dt ruggedness $V_R=0 \dots 480V$	dv/dt		100	V/ns
Total capacitive charge $V_R=650V$ , $di/dt=500A/\mu s, I_F \leq I_{FMAX}, T_J=25^{\circ}C$	$Q_C$	26		nC
Total Capacitance $T_J=25^{\circ}C, f=1MHz$	$C$	$V_R=0V$	726	pF
		$V_R=200V$	72	
		$V_R=400V$	68	
Power dissipation $T_C=25^{\circ}C$ $T_C=110^{\circ}C$	$P_{tot}$	163		W
		71		
Thermal Resistance, Junction Case	$R_{thJC}$	0.92		$^{\circ}C/W$
Junction and Storage Temperature Range	$T_J, T_{STG}$	-55 to +175		$^{\circ}C$

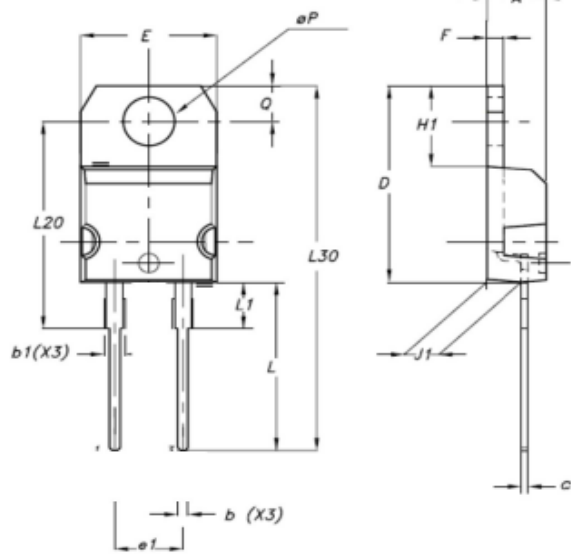
### Application

- Switch mode power supply
- Power factor correction
- Solar inverter
- Uninterruptible power supply
- High Efficiency DC/DC Converters
- Motor Drivers

**Rating and Characteristic Curves**



## Package outline



DIM.	mm			inch		
	MIN.	TYP.	MAX.	MIN.	TYP.	MAX.
A	4.40		4.60	0.173		0.181
b	0.61		0.88	0.024		0.034
b1	1.15		1.70	0.045		0.066
c	0.49		0.70	0.019		0.027
D	15.25		15.75	0.60		0.620
E	10		10.40	0.393		0.409
e1	4.95		5.15	0.194		0.202
F	1.23		1.32	0.048		0.052
H1	6.20		6.60	0.244		0.256
J1	2.40		2.72	0.094		0.107
L	13		14	0.511		0.551
L1	3.50		3.93	0.137		0.154
L20		16.40			0.645	
L30		28.90			1.137	
eP	3.75		3.85	0.147		0.151
Q	2.65		2.95	0.104		0.116

## TO-220 Tube outline

