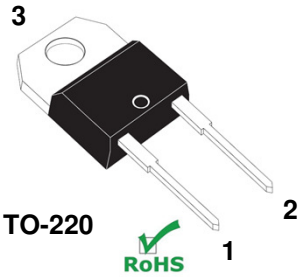
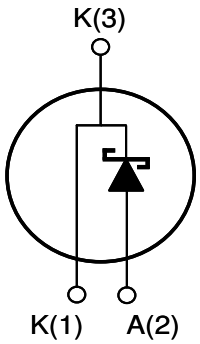
Silicon Carbide Power Schottky Diode

Product Summary		
V_{DC}	1200	V
I_F	10	A
Q_c	40	nC

Features:

- Positive Temperature Coefficient for Ease of Paralleling
- Temperature Independent Switching Behavior
- 175 ℃ Maximum Operating Temperature
- Zero Reverse Recovery Current
- Zero Forward Recovery Voltage





Internal Schematic

Applications:

- Solar Inverter
- SMPS
- Power Factor Correction
- Induction Heating
- UPS
- Motor Drive

MAXIMUM RATINGS

Parameter	Symbol	Conditions	Value	Unit
Repetitive Peak Reverse Voltage	V_{RRM}	T_j = 25 ℃	1200	V
DC Blocking Voltage	V_{DC}		1200	
Continuous Forward Current	I_F	T_C < 145 ℃	10	A
		T_C < 100 ℃	17	
Peak Repetitive Forward Current	I_{FRM}	T_C = 125 ℃, D = 0.1	50	
Non-Repetitive Forward Surge Current	I_{FSM}	T_C = 25 ℃, t_P = 10 ms	45	
		T_C = 25 ℃, t_P = 10 us	250	
Power Dissipation	P_{TOT}	T_C = 25 ℃	136	W
Operating and Storage Temperature	T_j, T_{stg}		-55 to +175	℃

THERMAL CHARACTERISTICS

Parameter	Symbol	Conditions	Value			Unit
			Min	Typ	Max	
Thermal Resistance, junction-case	$R_{th\ JC}$		-	1.1	-	℃ / W
Thermal Resistance, junction-ambient	$R_{th\ JA}$		-	62	-	

ELECTRICAL CHARACTERISTICS, at T_j = 25 C unless otherwise stated

Parameter	Symbol	Conditions	Value			Unit
			Min	Typ	Max	
Forward Voltage	V_F	I_F = 10 A, T_j = 25 ℃	-	1.6	1.8	V
		I_F = 10 A, T_j = 175 ℃	-	2.4	2.9	
Reverse Current	I_R	V_R = 1200 V, T_j = 25 ℃	-	10	100	uA
		V_R = 1200 V, T_j = 175 ℃	-	200	-	
Total Capacitive Charge	Q_C	V_R = 400 V, I_F = 10 A, di/dt = 500A/us	-	40	-	nC
Total Capacitance	C	V_R = 1 V, f = 100kHz	-	1153	-	pF
		V_R = 300 V, f = 100kHz	-	48	-	
		V_R = 600 V, f = 100KHz	-	33	-	

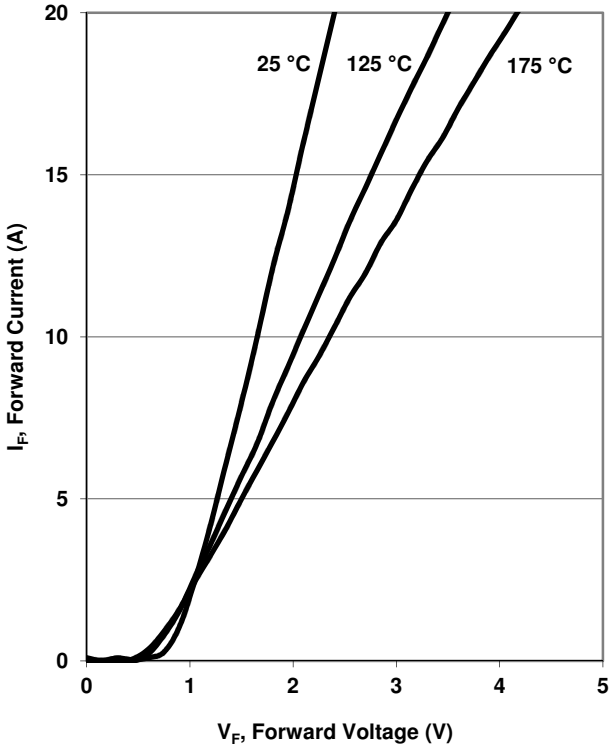


Figure 1. Typ. Forward Characteristics
$I_F = f(V_F)$; parameter: T_j

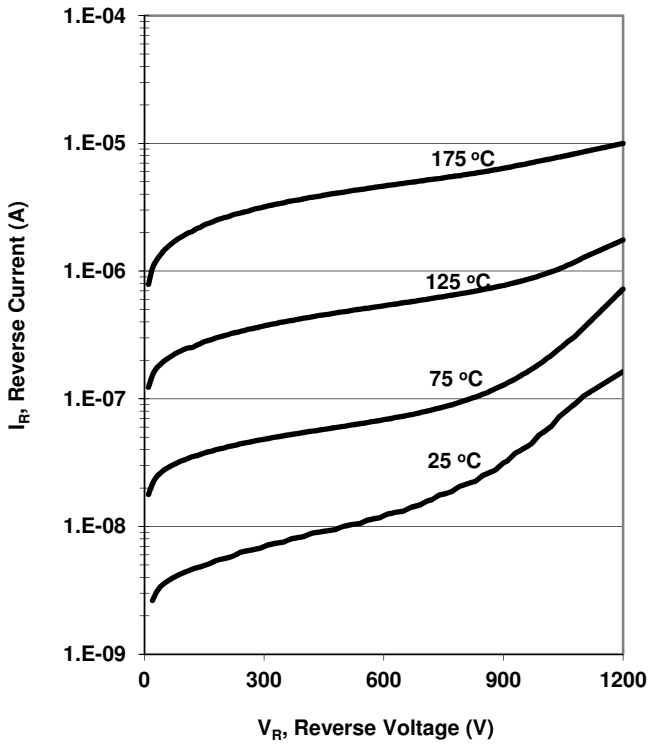


Figure 2. Typ. Reverse Characteristics
$I_R = f(V_R)$

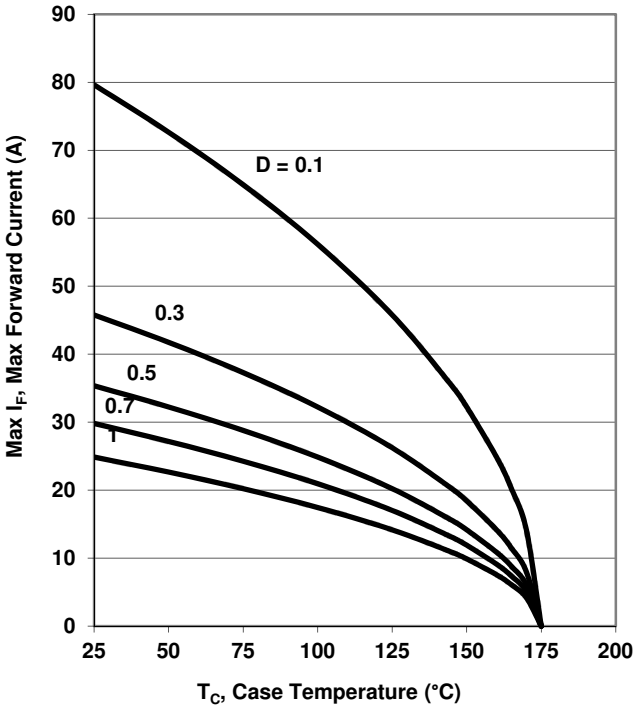


Figure 3. Max Forward Current
$I_F = f(T_C)$; T_j < 175 °C; $R_{th,JC(max)}$

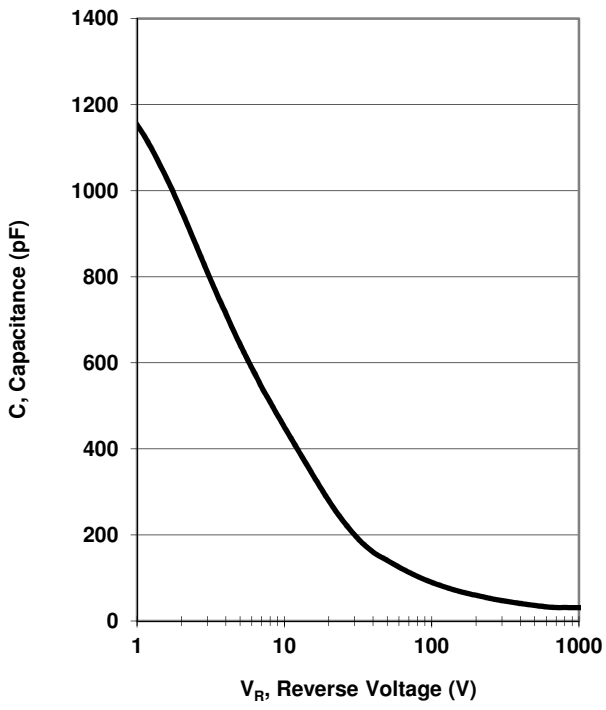


Figure 4. Typ. Capacitance vs. Reverse Voltage
$C = f(V_R)$; T_C = 25 °C; f = 1 MHz

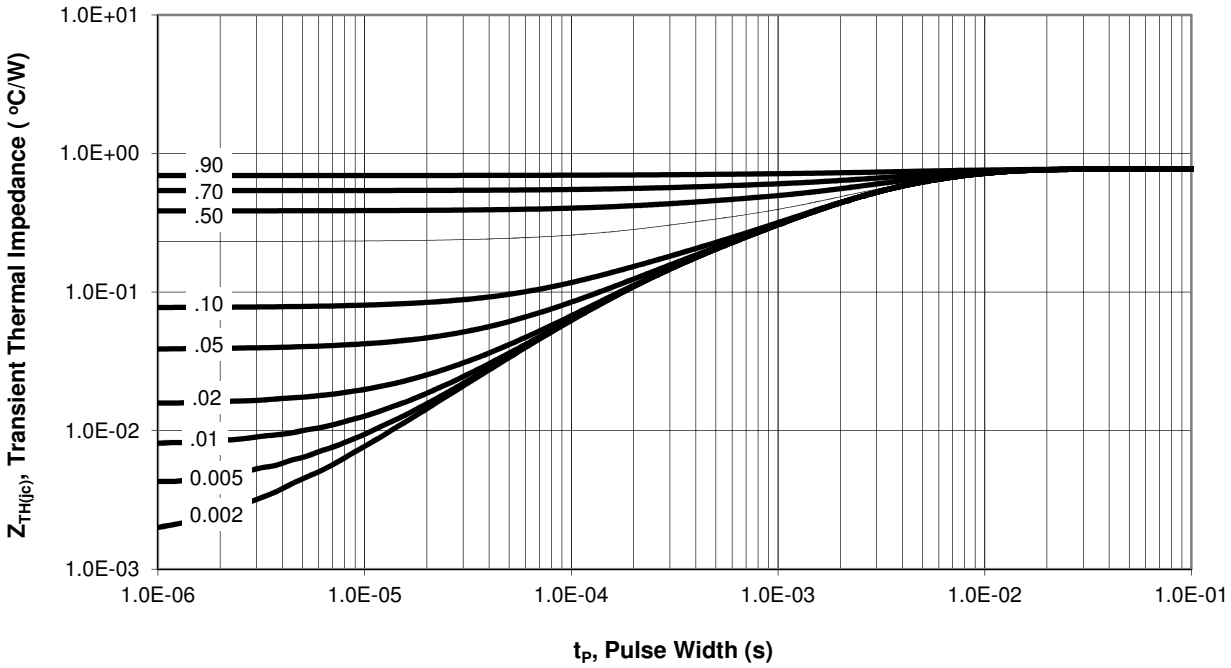
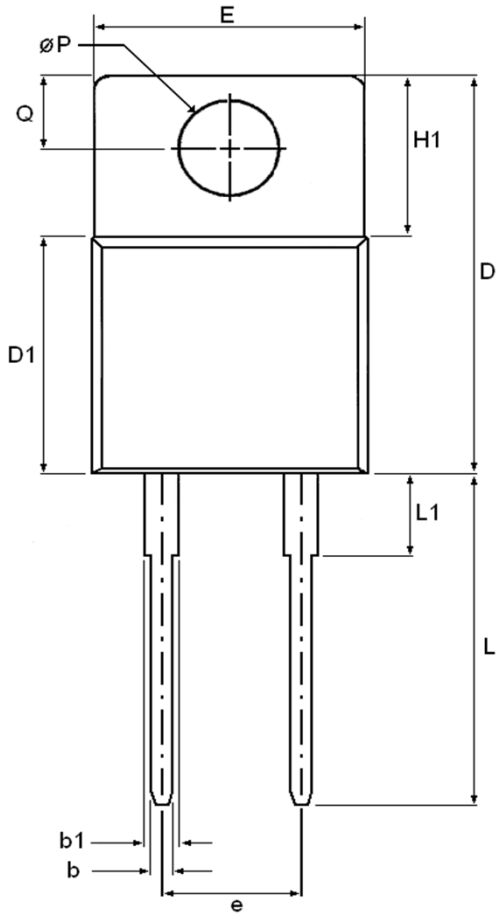
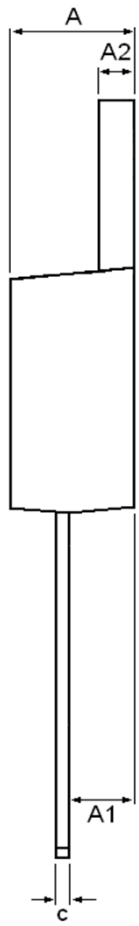
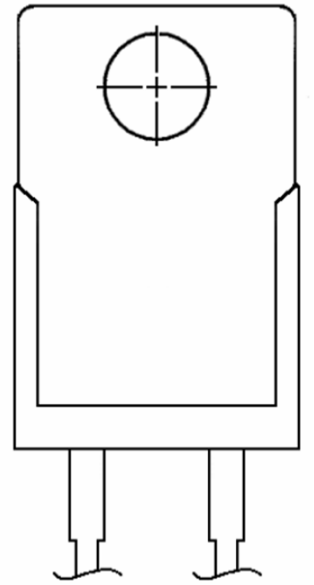


Figure 5. Transient Thermal Impedance
$Z_{th(jc)} = f(t_P)$; parameter: Duty Ratio

Package Dimensions: TO-220







DIM	MILLIMETERS		INCHES	
	MIN	MAX	MIN	MAX
A	4.191	4.699	0.165	0.185
A1	2.387	2.489	0.094	0.098
A2	1.219	1.321	0.048	0.052
b	0.635	0.889	0.025	0.035
b1	1.143	1.397	0.145	0.055
c	0.458	0.635	0.018	0.025
D	15.113	16.621	0.595	0.615
D1	9.017	9.271	0.355	0.365
e	5.080		0.200	
E	9.677	9.931	0.381	0.391
H1	6.096	6.350	0.240	0.250
L	12.700	12.954	0.500	0.510
L1	3.048	3.302	0.120	0.130
Q	2.540	3.048	0.100	0.120
ØP	3.632	3.734	0.143	0.147

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