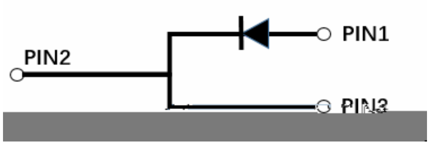
Silicon Carbide Schottky Diode

V_{RRM}	650V
$I_{F\ 135°C}$	14A
Q_C	30nC



Features

- Positive temperature coefficient
- Temperature-independent switching
- Maximum working temperature at 175 °C
- Unipolar devices and zero reverse recovery current
- Zero forward recovery current
- Essentially no switching losses
- Reduction of heat sink requirements
- High-frequency operation
- Reduction of EMI

Typical Applications

Tpical applications are in power factor correction(PFC), solar inverter, uninterruptible power supply, motor drives, photovoltaic inverter, electric car and charger.

Mechanical Data

- **Package**: TO-263
  Molding compound meets UL 94 V-0 flammability rating, RoHS-compliant, halogen-free
- **Terminals**: Tin plated leads
- **Polarity**: As marked

■Maximum Ratings (T_C=25 Unless otherwise specified)

PARAMTETER	SYMBOL		
	RSM	V	650
Reverse voltage (DC) @ T_j=25ÁC	V_{DC}	V	650
Continuous forward current@T_c=25ÁC	I_F	A	30
Continuous forward current@T_c=135ÁC			14
Continuous forward current@T_c=154 ÁC			10
Non - repetitive peak forward surge current @ T_c=25ÁC , tp=10ms , Half Sine Wave	I_{FSM}	A	80
Power Dissipation@T_c=25ÁC	P_{TOT}	W	136
Power Dissipation@T_c=110ÁC			59
i^2t Value@ Tc=25ÁC , tp=10ms	^{2}dt Úi	A	

■Electrical Characteristics

PARAMTETER	SYMBOL	UNIT	TEST CONDITIONS	Typ.	Max.
Forward voltage drop	V_F	V	I_F=10A, T_j=25°C	1.35	1.55
			I_F=10A, T_j=175°C	1.8	-
Reverse leakage current	I_R	μA	V_R=650V, T_j=25°C	0.5	25
			V_R=650V, T_j=175°C	2	-
Total capacitive charge	Q_C	nC	V_R=400V, T_j=25°C , $QC=\int_0^{VR} C(V)dV$	30	-
Total capacitance	C	pF	V_R=0V, f=1MHZ	543	-
			V_R=200V, f=1MHZ	55	-
			V_R=400V, f=1MHZ	52	-
Capacitance Stored Energy	E_C	μJ	V_R=400V	3.7	-

■Thermal Characteristics (T_a=25 Unless otherwise specified)

PARAMETER	SYMBOL	UNIT	Value
Thermal resistance	$R_{\theta J\text{-}C}$	°C /W	1.1

■Typical Characteristics

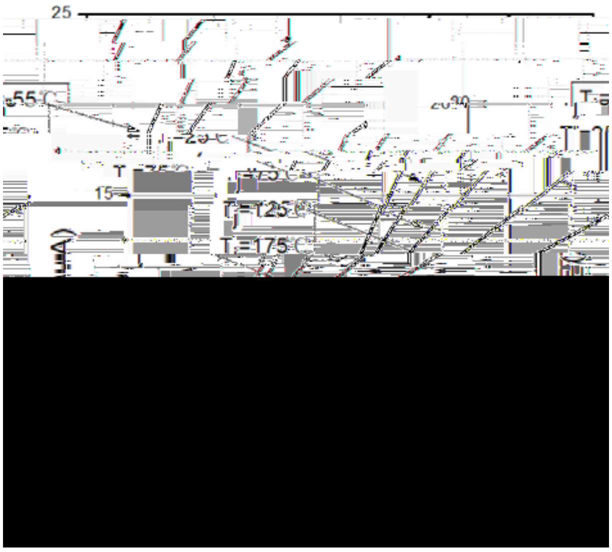


Figure 1. Forward Characteristics

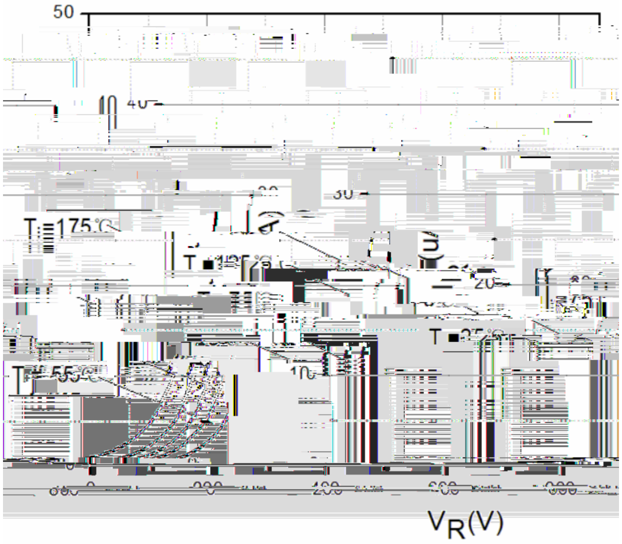
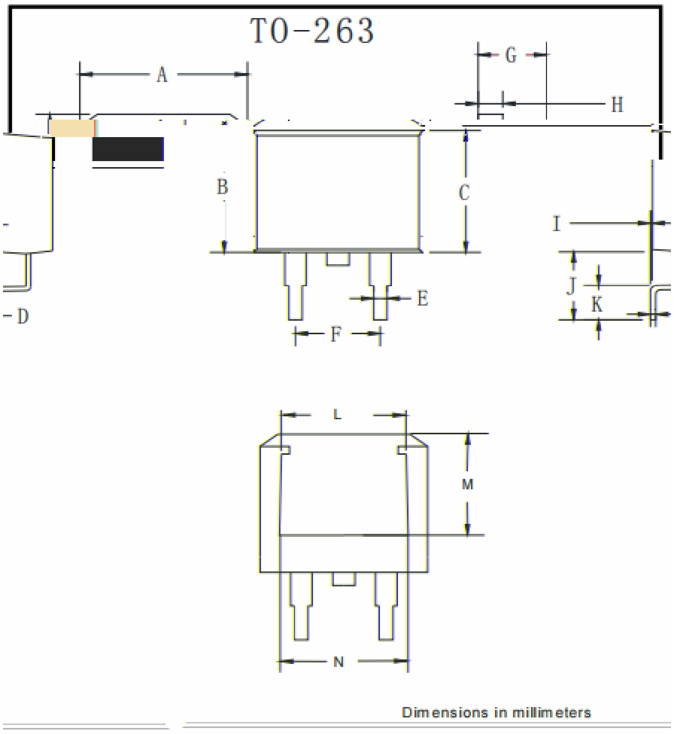


Figure2. Reverse Characteristic

Figure 3. Capacitance vs. Reverse Voltage

Fig ˎ ⅜MM ˎ ⅜MM ˎ ⅜M Î ⅜MM ˒ ˤ ˤ ˤ ˤ ˤ ˤ ˤ ˤ

■Outline Dimensions



TO-263		
Dim	Min	Max
[illegible]	[illegible]	A
9.7	10.5	B
8.4	9.0	C
0.28	0.64	D
0.68	0.94	E
4.55	5.6	F
4.04	5.10	G
1.14	1.4	H
0	0.2	I
4.9	6.05	J
1.79	2.79	K
7.3	7.9	L
6.2	6.8	M
7.6	8.2	N

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