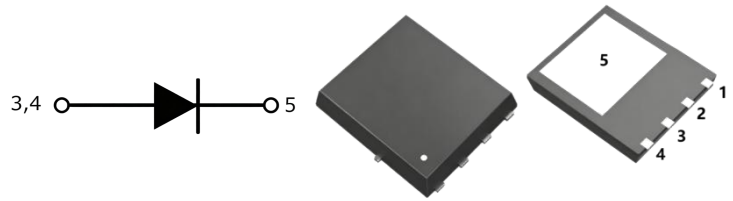


**Silicon Carbide Schottky Diode**

Parameter	Value	Unit
$V_{RRM}$	650	V
$I_F$	10	A
$Q_C$	28	nC



PDFN8x8

**Features**

- Zero reverse recovery current
- Zero forward recovery voltage
- Temperature independent switching behavior
- High temperature operation
- High frequency operation

**Applications**

- Boost Converter
- Power Factor Correction
- Switched-Mode Power Supply
- Uninterruptible Power Supply

**Maximum Ratings** (at  $T_J=25^\circ\text{C}$  unless otherwise specified)

Parameter	Symbol	Value	Unit
Repetitive Peak Reverse Voltage	$V_{RRM}$	650	V
Surge Peak Reverse Voltage	$V_{RSM}$	650	V
Continuous Forward Current $T_C = 25^\circ\text{C}$ $T_C = 135^\circ\text{C}$ $T_C = 151^\circ\text{C}$	$I_F$	29.8 13.8 10	A
Repetitive Peak Forward Surge Current $T_C = 25^\circ\text{C}$ , $t_p = 10\text{ms}$ , Half Sine Pulse, $D=0.1, 1000\text{Cycle}$	$I_{FRM}$	40	A
Non-Repetitive Forward Surge Current $T_C = 25^\circ\text{C}$ , $t_p = 10\text{ms}$ , Half Sine Pulse	$I_{FSM}$	80	A
$i^2t$ Value $T_C = 25^\circ\text{C}$ , $t_p = 10\text{ms}$ , Half Sine Pulse	$\int i^2 dt$	32	$\text{A}^2\text{s}$
Power dissipation $T_C = 25^\circ\text{C}$ $T_C = 110^\circ\text{C}$	$P_{tot}$	106 4	W
Operating junction Range	$T_J$	-55 to +175	$^\circ\text{C}$
Storage temperature Range	$T_{stg}$	-55 to +175	$^\circ\text{C}$

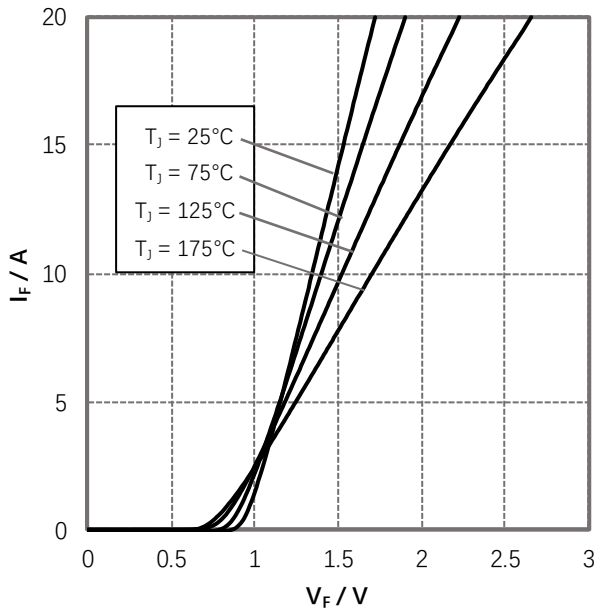
**Thermal Characteristics**

Parameter	Symbol	Typ.	Unit
Thermal resistance, junction – case.	$R_{thJC}$	1.41	°C/W

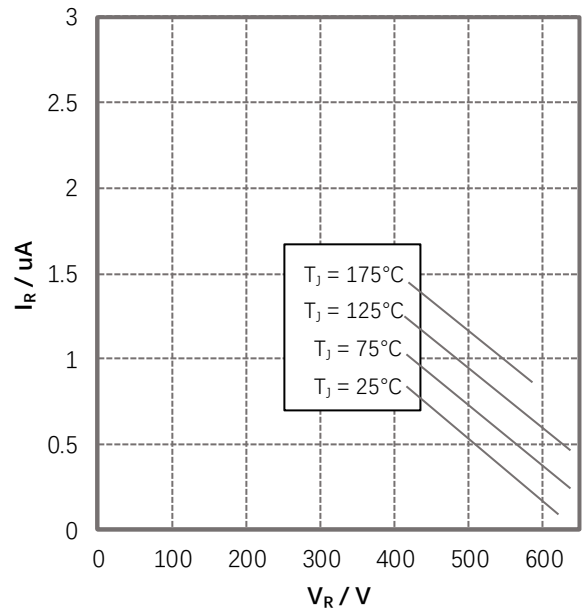
**Electrical Characteristics**(at  $T_J=25^{\circ}\text{C}$  unless otherwise specified)

Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
DC Blocking Voltage	$V_{DC}$		650			V
Instantaneous forward voltage per leg	$V_F$	$I_F=10\text{A}$ $T_J=25^{\circ}\text{C}$ $T_J=175^{\circ}\text{C}$		1.37 1.74	1.7 2.5	V
Reverse current per leg	$I_R$	$V_R=650\text{V}$ $T_J=25^{\circ}\text{C}$ $T_J=175^{\circ}\text{C}$		0.2 2.0	50 100	uA
Total Capacitance	C	f = 1MHZ $V_R=0\text{V}$ $V_R=200\text{V}$ $V_R=400\text{V}$		536 55 53		pF
Total Capacitive Charge	$Q_C$	$V_R=400\text{V}$ $T_J=25^{\circ}\text{C}$		28		nC
Capacitance Stored Energy	$E_C$	$V_R=400\text{V}$		6.8		uJ

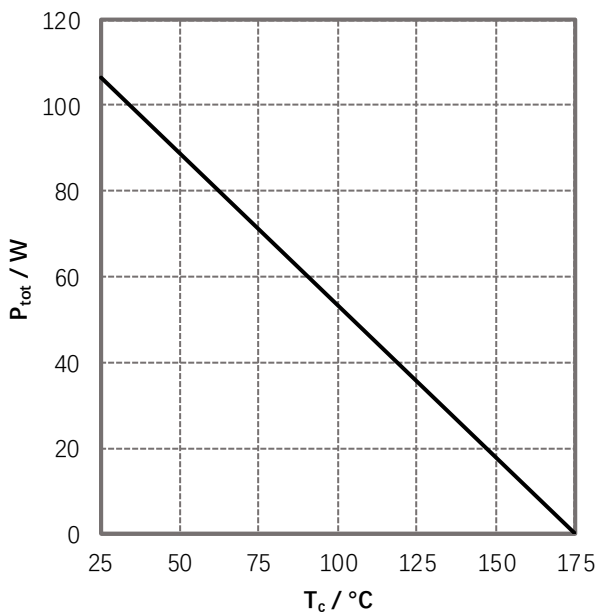
**Typical Characteristics**



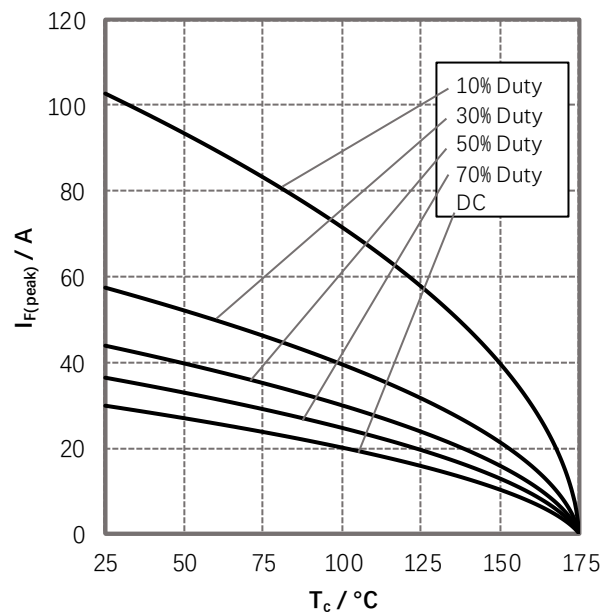
**Figure 1. Forward Characteristics**



**Figure 2. Reverse Characteristics**



**Figure 3. Power Derating**



**Figure 4. Current Derating**

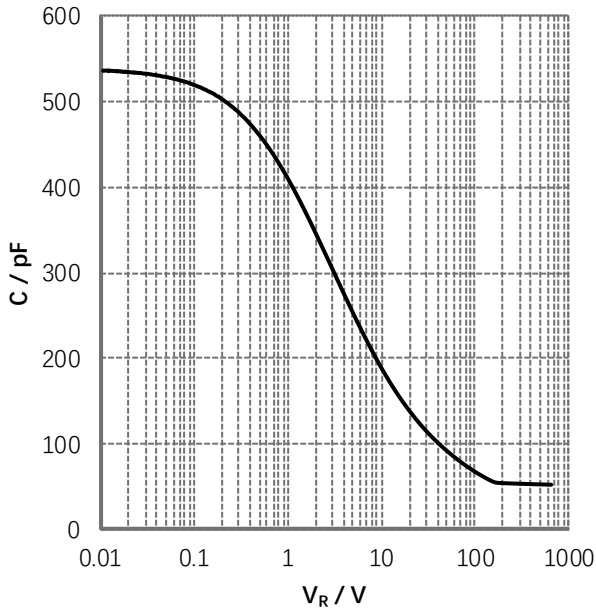


Figure 5. Capacitance vs. Reverse Voltage

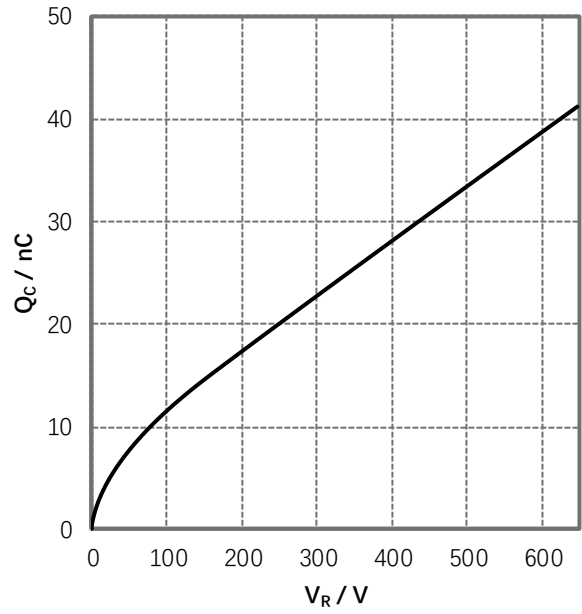


Figure 6. Reverse Charge vs. Reverse Voltage

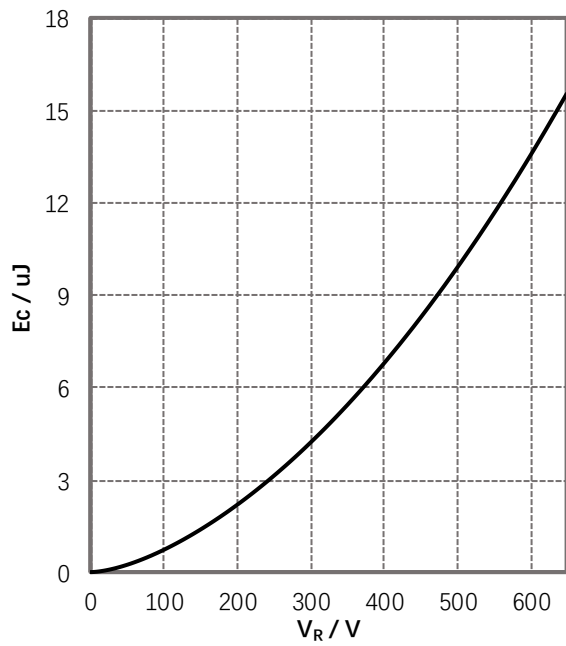


Figure 7. Capacitance Stored Energy

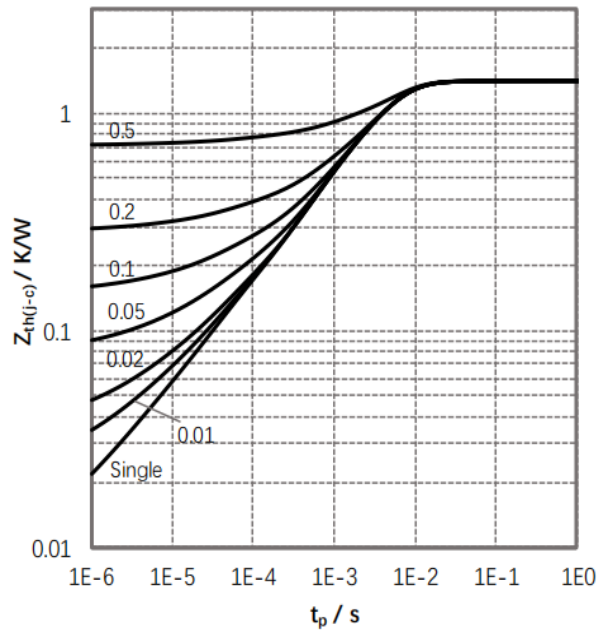
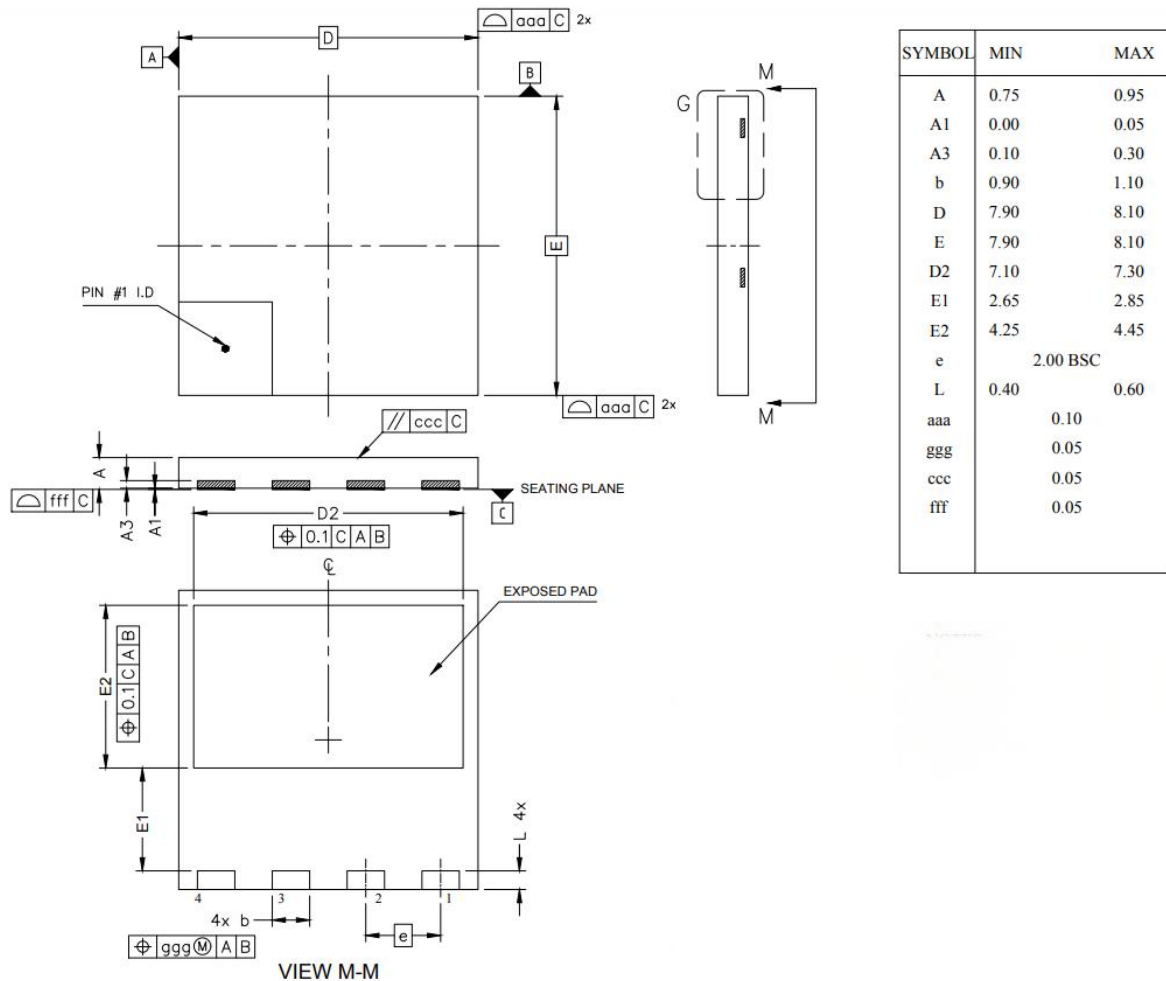


Figure 8. Transient Thermal Impedance

## Package Outlines(Unit:mm)

### PDFN8x8



### \*Important Usage Information and Disclaimer

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