WS4A008065E

V_{RRM} = 650 V

Silicon Carbide Schottky Diode



Electrical Characteristics

Symbol	Parameter	Typ.	Max.	Unit	Test Conditions	Note
V_F	Forward Voltage	1.27 1.38	1.5 1.6	V	I_F = 8A, T_J = 25 I_F = 8A, T_J = 175	Fig.1
I_R	Reverse Current	5 25	50 200	μA	V_R = 650V, T_J = 25 V_R = 650V, T_J = 175	Fig.2
C	Total Capacitance	530 54 39	/	pF	V_R = 0.1V, T_J = 25 , f = 1MHz V_R = 200V, T_J = 25 , f = 1MHz V_R = 400V, T_J = 25 , f = 1MHz	Fig.5
Q_C	Total Capacitive Charge	21	/	nC	V_R = 400V, I_F = 8A di/dt = 200A/μs, T_J = 25	Fig.4

Thermal Characteristics

Symbol	Parameter	Typ.	Unit	Note
$R_{\theta JC}$	Thermal Resistance from Junction to Case	1.4	/W	Fig.6
$R_{\theta JA}$	Thermal Resistance from Junction to Ambient	80	/W	
T_{sold}	Soldering Temperature	260		

Typical Performance

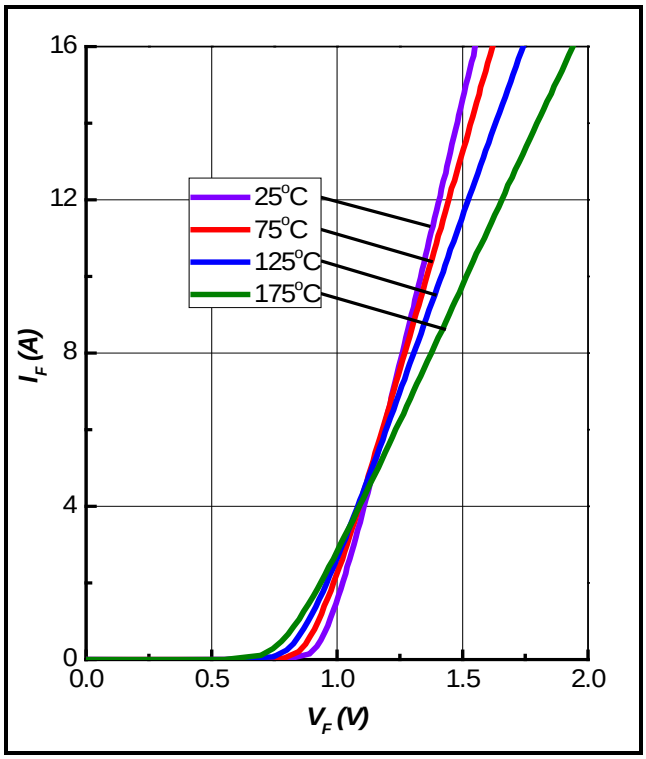


Figure 1. Forward Characteristics

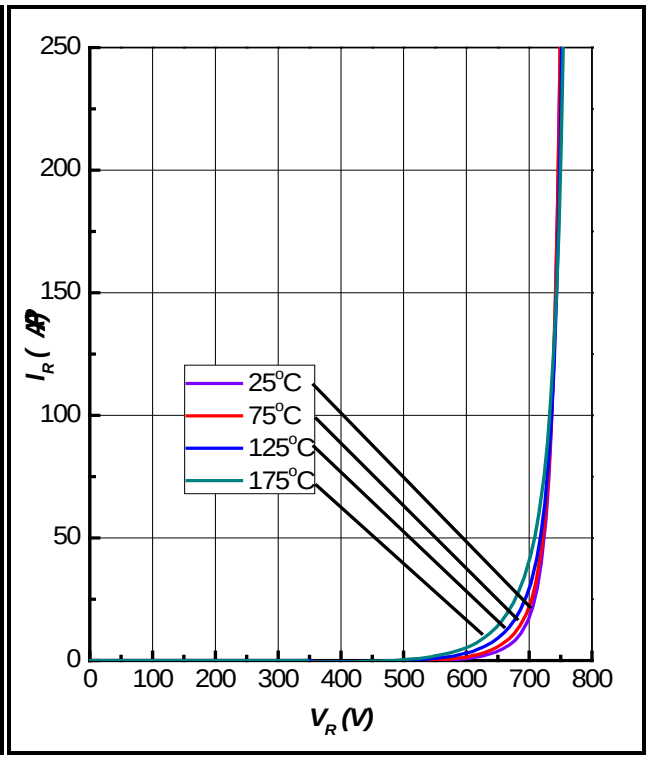


Figure 2. Reverse Characteristics

Typical Performance

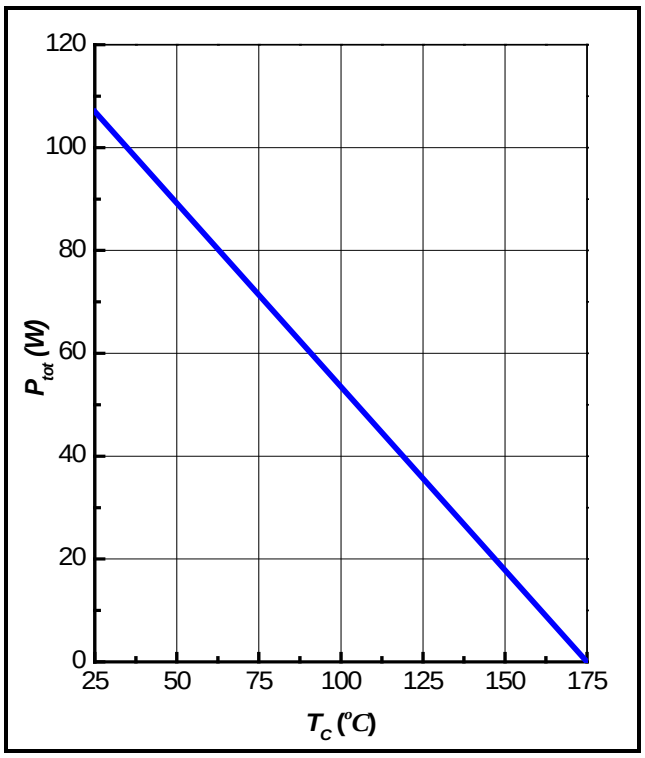


Figure 3. Power Derating

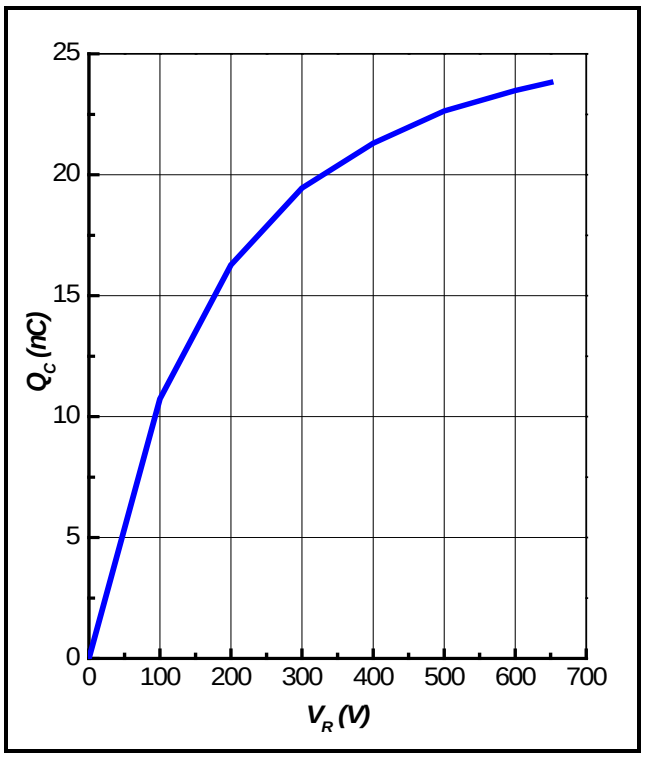
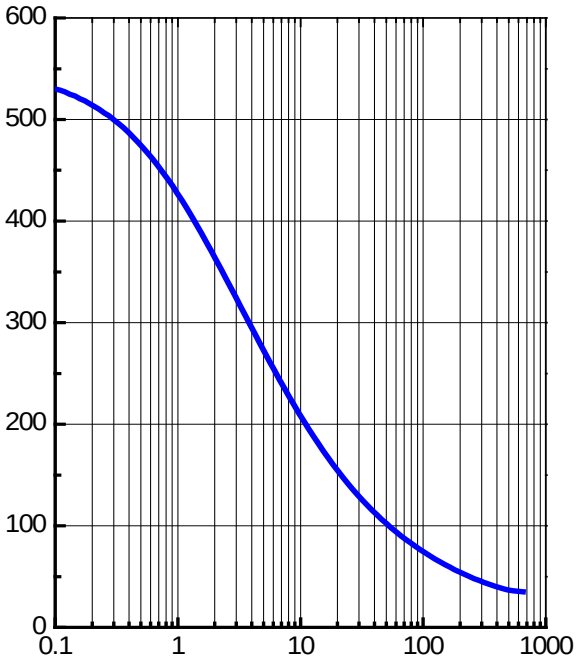
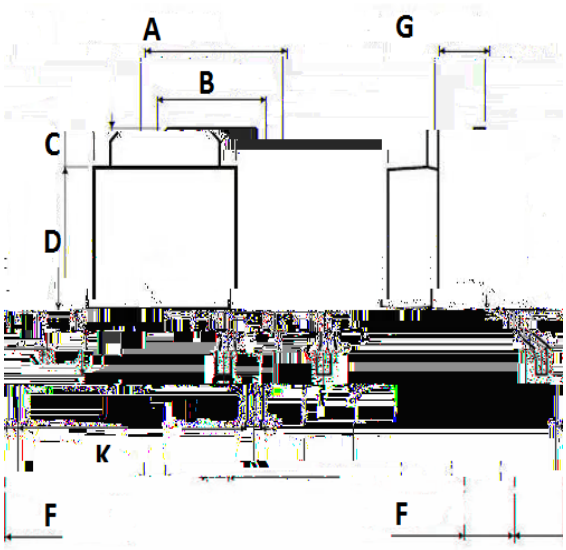


Figure 4. Total Capacitive Charge vs. Reverse Voltage



Package Dimensions

Package TO-252



Symbol	Min. (mm)	Typ. (mm)	Max. (mm)
A	6.30	6.50	6.70
B	5.20	5.30	5.40
C	1.15	1.25	1.35
D	5.70	5.90	6.10
E	0.65	0.7	0.75
F	2.10	2.30	2.50
G	2.20	2.30	2.40
H	1.45	1.50	1.55
I	2.90	3.00	3.10
J	0.45	0.5	0.55
K	0.90	1.00	1.10

Simplified Diode Model

Equivalent IV Curve for Model

Mathematical Equation

$$V_F = V_t + I_F \times R$$

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