

A4G40D1200NT2

1200V Silicon Carbide Schottky Diode



Features

- New Thin Wafer Technology
- Low Forward Voltage Drop (VF)
- Zero Reverse Recovery Current
- Zero Forward Recovery Voltage
- Positive Temperature Coefficient on VF
- Temperature-independent Switching

Benefits

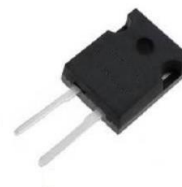
- Replace Bipolar with Unipolar Device
- Reduction of Heat Sink Size
- Parallel Devices Without Thermal Runaway
- Essentially No Switching Losses

Applications

- Switch Mode Power Supplies
- Uninterruptible Power Supplies
- Server/Telecom Power Supplies
- Industrial Power Supplies

Product Summary

V_{DS}	1200V
$I_D (T_C \leq 143^\circ\text{C})$	40A



Ordering Information

Part Number	Marking	Package	Packaging
A4G40D1200NT2	A4G40D1200NT2	TO-247-2	Tube

Absolute Maximum Ratings

Symbol	Parameter	Value	Unit
V_{RRM}	Repetitive Peak Reverse Voltage	1200	V
V_{RSM}	Surge Peak Reverse Voltage	1200	
V_R	DC Blocking Voltage	1200	
I_F	Forward Current	40 ($T_C \leq 143^\circ\text{C}$)	A
I_{FSM}	Non-Repetitive Forward Surge Current	320	A
P_{tot}	Power Dissipation	394 ($T_C = 25^\circ\text{C}$)	W
T_J, T_{stg}	Operating Junction and Storage Temperature	-55 to +175	$^\circ\text{C}$

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

Typical Performance-Static

Symbol	Parameter	Test Conditions	Min.	Typ.	Max.	Unit
V_F	Forward Voltage	$I_F = 40\text{A}, T_J = 25^\circ\text{C}$		1.45	1.8	V
		$I_F = 40\text{A}, T_J = 175^\circ\text{C}$		2.1	2.5	V
I_R	Reverse Current	$V_R = 1200\text{V}, T_J = 25^\circ\text{C}$		20	100	μA
		$V_R = 1200\text{V}, T_J = 175^\circ\text{C}$		100	500	μA

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C	Total Capacitance	$V_R = 0.1V, T_J = 25^{\circ}C, f = 1MHz$		2320		pF
		$V_R = 400V, T_J = 25^{\circ}C, f = 1MHz$		165		pF
		$V_R = 800V, T_J = 25^{\circ}C, f = 1MHz$		120		pF
Qc	Total Capacitive Charge	$V_R = 800V, I_F = 40A, T_J = 25^{\circ}C$		92		nC

Thermal Characteristics

Symbol	Parameter	Value	Unit
$R_{\theta JC}$	Thermal Resistance, Junction-to-Case	0.38	$^{\circ}C/W$
$R_{\theta JA}$	Thermal Resistance, Junction-to-Ambient	80	$^{\circ}C/W$
T_{solder}	Soldering Temperature	260	$^{\circ}C$

Typical Performance

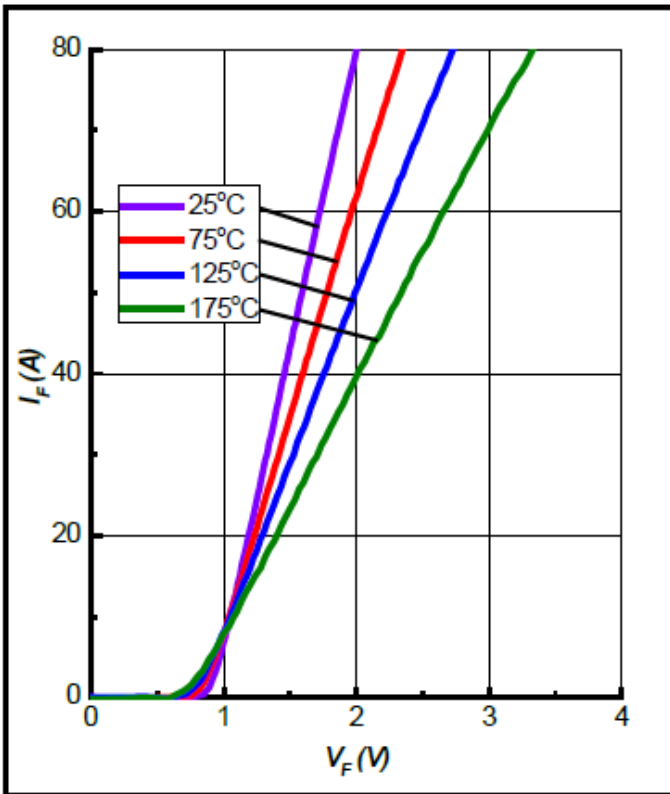


Figure 1. Forward Characteristics

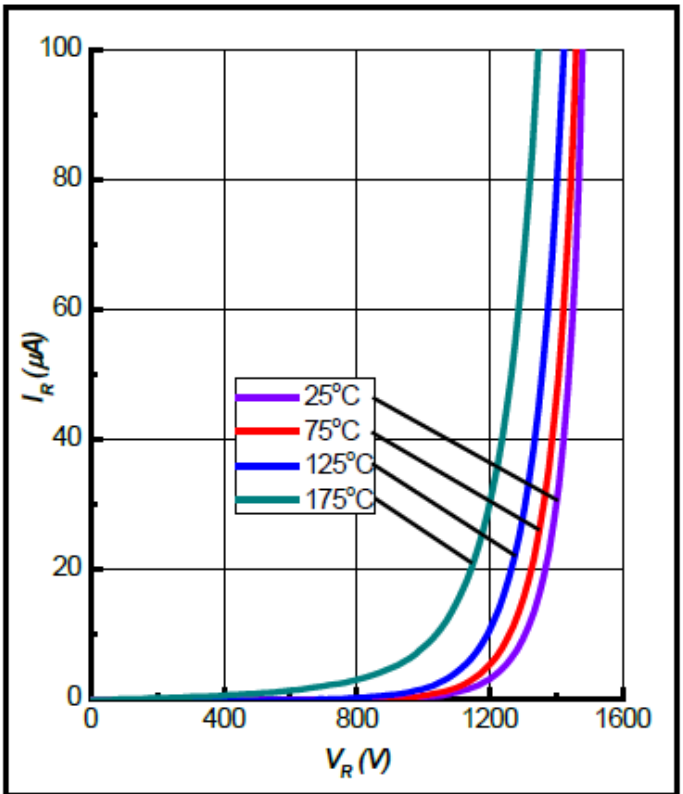


Figure 2. Reverse Characteristics

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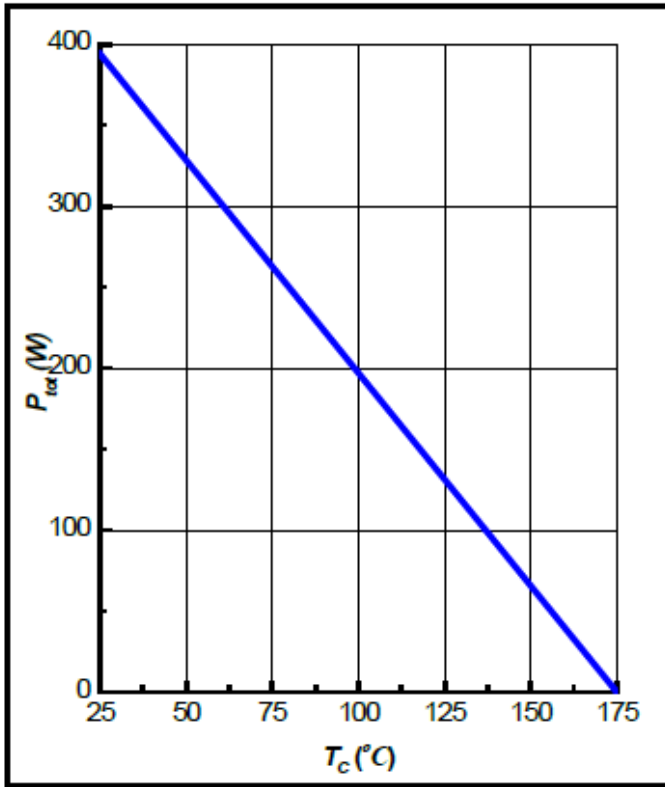


Figure 3. Power Derating

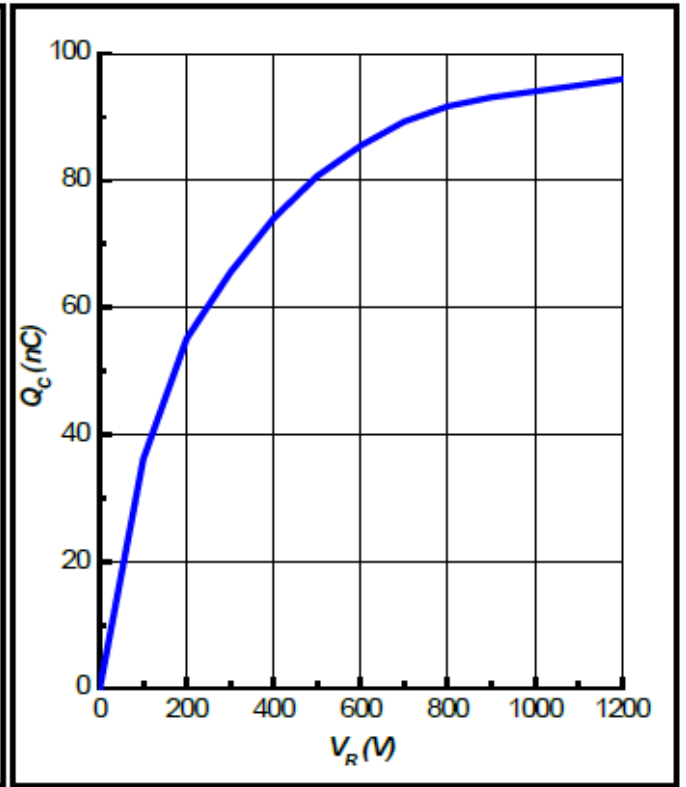


Figure 4. Total Capacitive Charge vs. Reverse Voltage

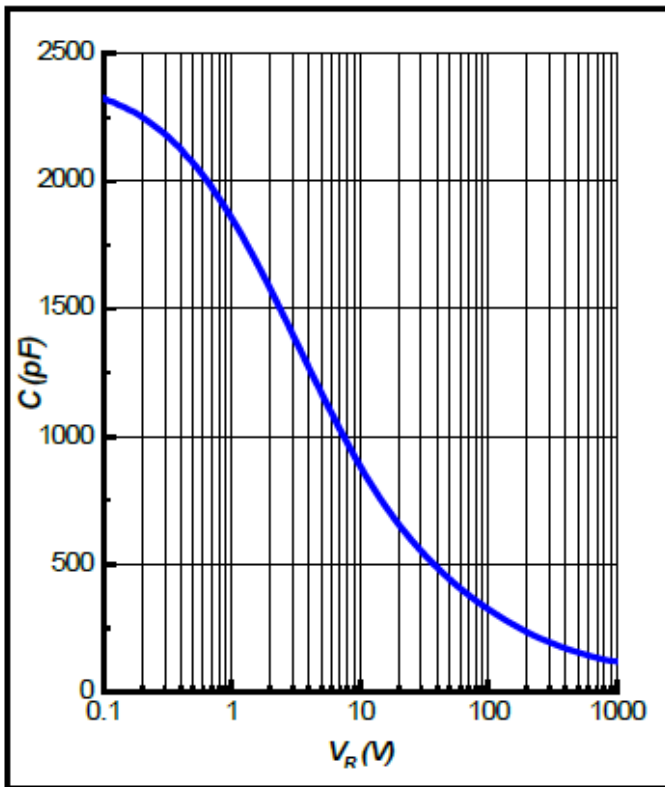


Figure 5. Total Capacitance vs. Reverse Voltage

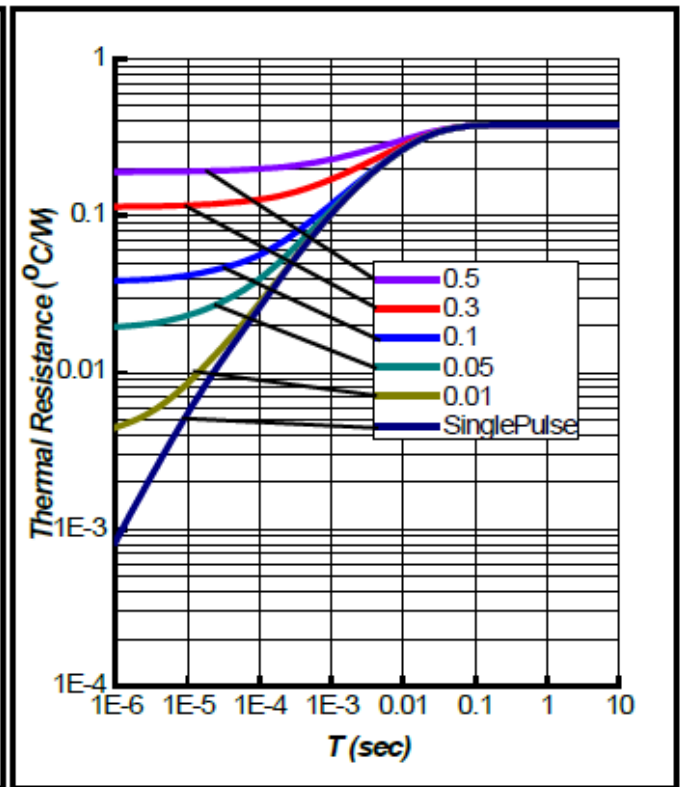
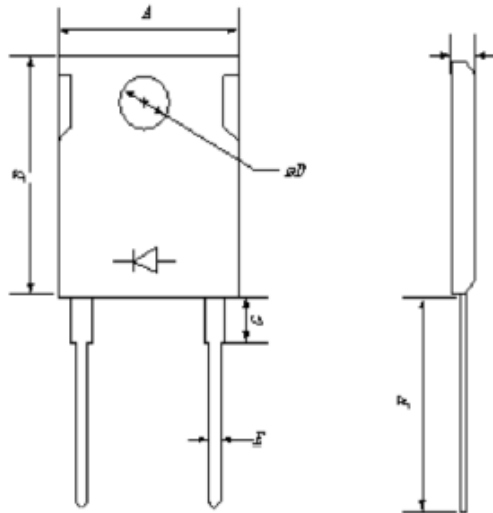


Figure 6. Transient Thermal Impedance

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Package Drawing



Symbol	Min. (mm)	Typ. (mm)	Max. (mm)
A	14.18	15.75	17.33
B	18.45	20.5	22.55
C	4.50	5.00	5.50
D	3.15	3.50	3.85
E	1.08	1.20	1.32
F	18.27	20.32	22.33

Revision version	Description	Date
1	Initial	08.2025