

A4G10D1700NT2

1700V 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

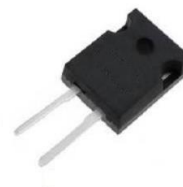
- Replace Bipolar with Unipolar Device
- Reduction of Heat Sink Size
- Parallel Devices Without Thermal Runaway
- Essentially No Switching Losses

Applications

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

Product Summary

V_{DS}	1700V
$I_D (T_C \leq 150^\circ C)$	10A



Ordering Information

Part Number	Marking	Package	Packaging
A4G10D1700NT2	A4G10D1700NT2	TO-247-2	Tube

Absolute Maximum Ratings

Symbol	Parameter	Value	Unit
V_{RRM}	Repetitive Peak Reverse Voltage	1700	V
V_{RSM}	Surge Peak Reverse Voltage	1700	
V_R	DC Blocking Voltage	1700	
I_F	Forward Current	10 ($T_C \leq 150^\circ C$)	A
I_{FSM}	Non-Repetitive Forward Surge Current	130	A
P_{tot}	Power Dissipation	202 ($T_C = 25^\circ C$)	W
T_J, T_{stg}	Operating Junction and Storage Temperature	-55 to +175	$^\circ C$

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

Typical Performance-Static

Symbol	Parameter	Test Conditions	Min.	Typ.	Max.	Unit
V_F	Forward Voltage	$I_F = 10A, T_J = 25^\circ C$		1.45	1.7	V
		$I_F = 10A, T_J = 175^\circ C$		2.10		V
I_R	Reverse Current	$V_R = 1700V, T_J = 25^\circ C$		5	100	μA
		$V_R = 1700V, T_J = 175^\circ C$		30		μA

A4G10D1700NT2

C	Total Capacitance	$V_R = 0.1V, T_J = 25^{\circ}C, f = 1MHz$	1857	pF
		$V_R = 1000V, T_J = 25^{\circ}C, f = 1MHz$	41	pF
		$V_R = 1700V, T_J = 25^{\circ}C, f = 1MHz$	36	pF
Qc	Total Capacitive Charge	$V_R = 800V, I_F = 10A$ $di/dt = 200A/\mu s, T_J = 25^{\circ}C$	84	nC

Thermal Characteristics

Symbol	Parameter	Value	Unit
$R_{\theta JC}$	Thermal Resistance, Junction-to-Case	0.74	$^{\circ}C/W$
$R_{\theta JA}$	Thermal Resistance, Junction-to-Ambient	80	$^{\circ}C/W$
T_{solder}	Soldering Temperature	260	$^{\circ}C$

Typical Performance

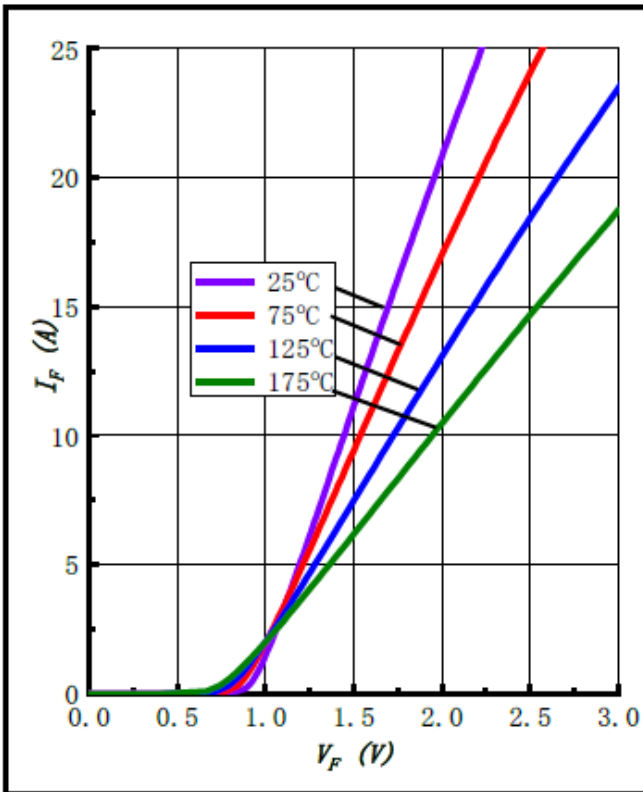


Figure 1. Forward Characteristics

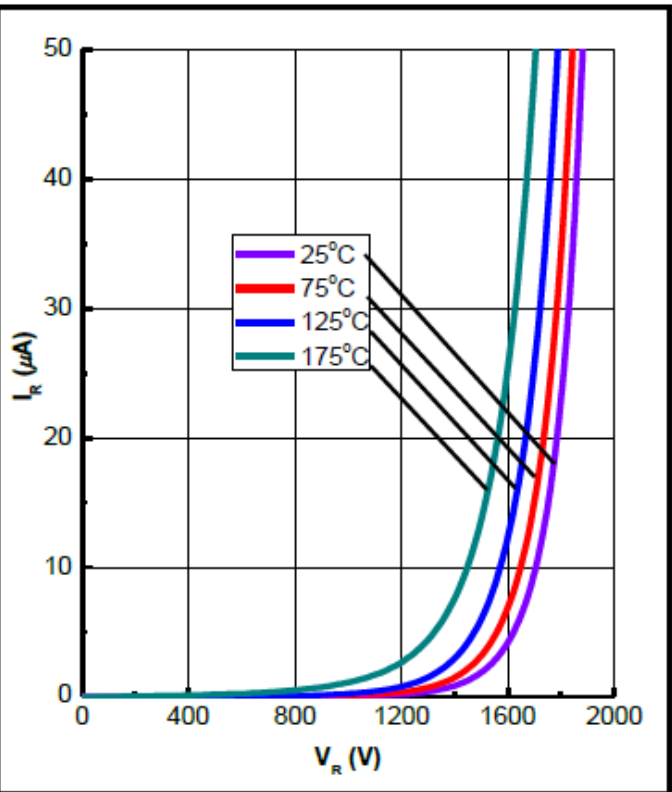


Figure 2. Reverse Characteristics

A4G10D1700NT2

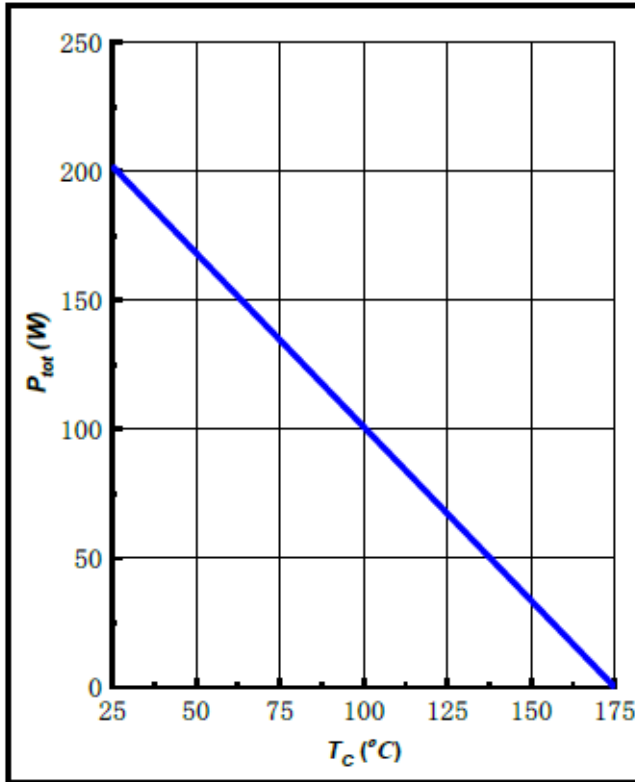


Figure 3. Power Derating

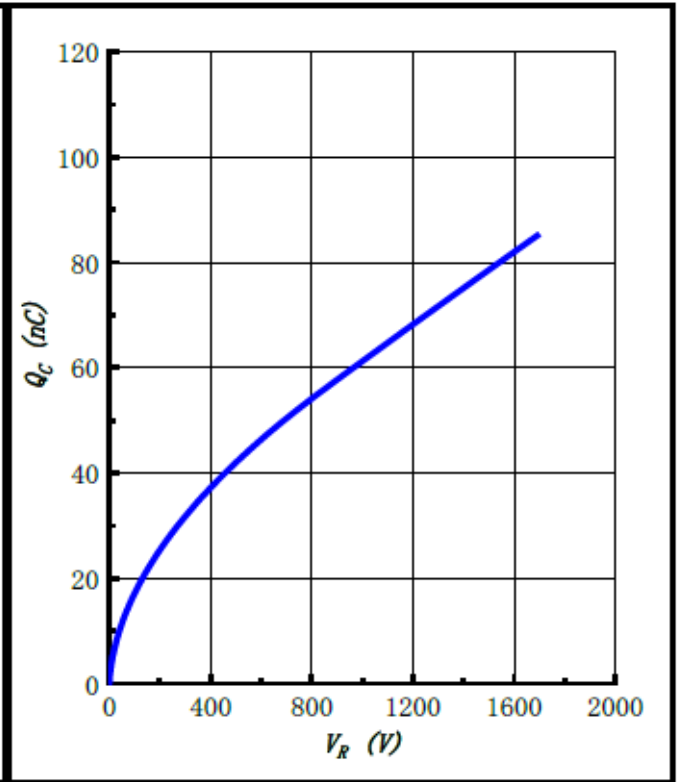


Figure 4. Total Capacitive Charge vs. Reverse Voltage

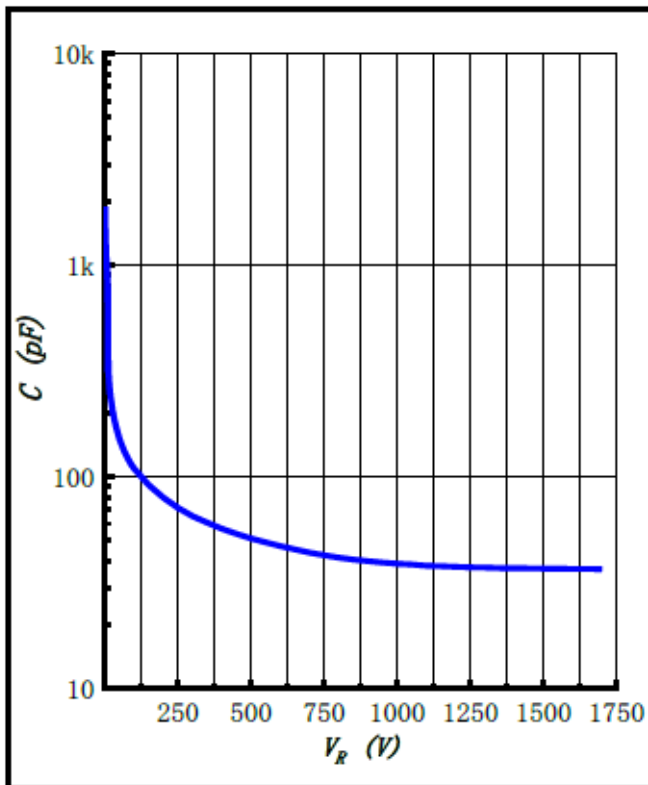


Figure 5. Total Capacitance vs. Reverse Voltage

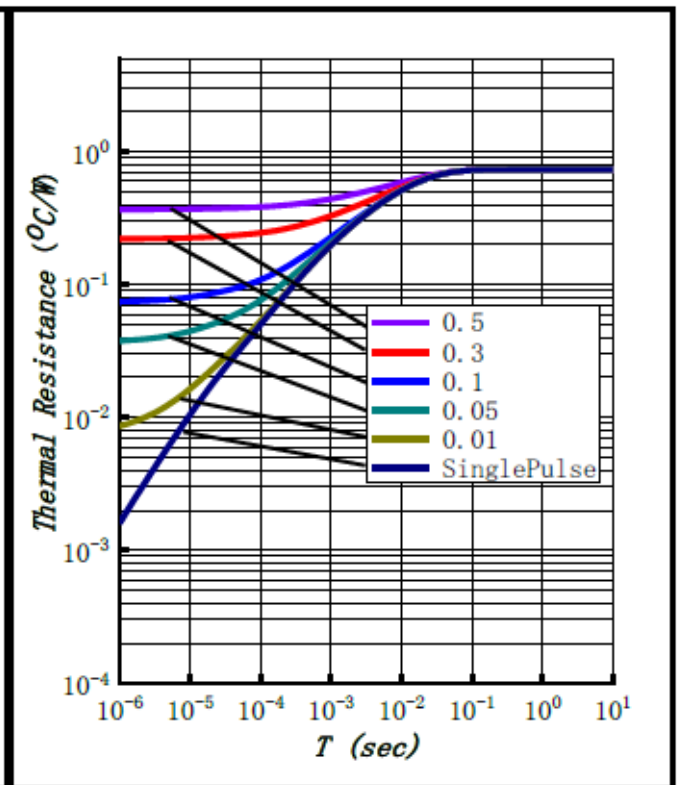
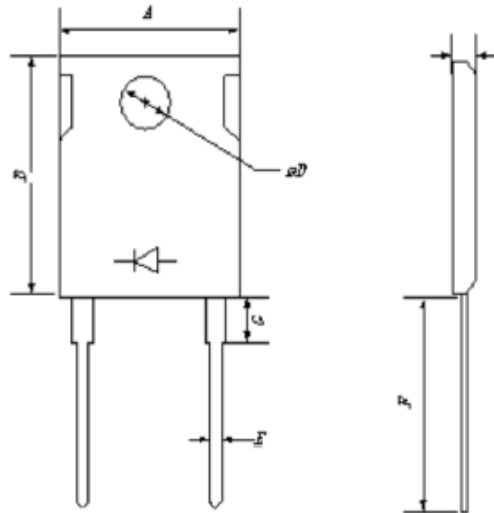


Figure 6. Transient Thermal Impedance

A4G10D1700NT2

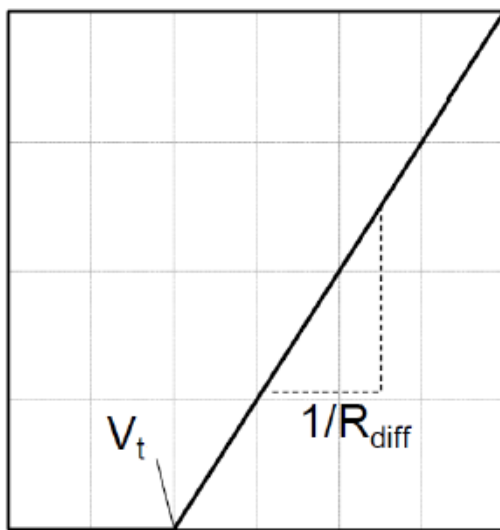
Package Drawing



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

Simplified Diode Model

Equivalent IV Curve for Model



Mathematical Equation

$$V_F = V_t + I_F \times R_{diff}$$

$$V_t = -0.0015 \times T_j + 0.9709 \text{ [V]}$$

$$R_{diff} = 1 \times 10^{-6} \times T_j^2 + 2 \times 10^{-4} \times T_j + 0.0443 \text{ [\Omega]}$$

Note:

T_j = Diode Junction Temperature In Degrees Celsius,
valid from 25°C to 175°C

I_F = Forward Current

Less than 100A

Revision version	Description	Date
1	Initial	08.2025