V_{RM} = 600 V, $I_{F(AV)}$ = 0.5 A, t_{rr} = 100 ns
Fast Recovery Diode

AG01A

Data Sheet

Description

The AG01A is a fast recovery diode of 600 V / 0.5 A. The maximum t_{rr} of 100 ns is realized by optimizing a life-time control.

Features

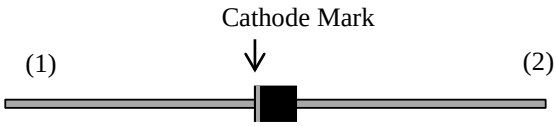
- V_{RM} ---------- 600 V
- $I_{F(AV)}$ ---------- 0.5 A
- V_F ---------- 1.8 V
- t_{rr1} ---------- 100 ns
- Bare Leads: Pb-free (RoHS Compliant)
- Flammability: Equivalent to UL94V-0

Applications

- White Goods
- Audiovisual Equipment
- Lighting Equipment
- Industrial Electronic Equipment
  (Communication Equipment and Factory Automation)
- Freewheel Diode
  (Offline Buck Converter, Offline Buck-boost Converter, etc.)

Package

Axial (φ2.4 × 2.9L / φ0.57)



(1) Cathode
(2) Anode

Not to scale

Absolute Maximum Ratings

Unless otherwise specified, T_A = 25 °C.

Parameter	Symbol	Conditions	Rating	Unit
Nonrepetitive Peak Reverse Voltage	V_{RSM}		600	V
Repetitive Peak Reverse Voltage	V_{RM}		600	V
Average Forward Current	$I_{F(AV)}$	See Figure 2 and Figure 3. T_L = 130 °C	0.5	A
Surge Forward Current	I_{FSM}	Half cycle sine wave, positive side, 10 ms, 1 shot	15	A
I^2t Limiting Value	I^2t	1 ms ≤ t ≤ 10 ms	1.13	A^2s
Junction Temperature	T_J		−40 to 150	°C
Storage Temperature	T_{STG}		−40 to 150	°C

Electrical Characteristics

Unless otherwise specified, T_A = 25 °C.

Parameter	Symbol	Conditions	Min.	Typ.	Max.	Unit
Forward Voltage Drop	V_F	T_J = 25 °C, I_F = 0.5 A	—	—	1.8	V
		T_J = 100 °C, I_F = 0.5 A	—	1.1	—	V
Reverse Leakage Current	I_R	$V_R = V_{RM}$	—	—	100	µA
Reverse Leakage Current under High Temperature	H·I_R	$V_R = V_{RM}$, T_J = 100 °C	—	—	500	µA
Reverse Recovery Time	t_{rr1}	$I_F = I_{RP}$ = 100 mA, 90% recovery point, T_J = 25 °C	—	—	100	ns
	t_{rr2}	I_F = 100 mA, I_{RP} = 200 mA, 75% recovery point, T_J = 25 °C	—	—	50	ns
Thermal Resistance [1]	$R_{th(J-L)}$	See Figure 1.	—	—	22	°C/W

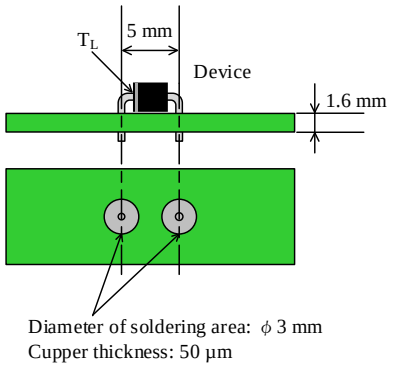


Figure 1. Lead Temperature Measurement Conditions

[1] $R_{th\,(J-L)}$ is thermal resistance between junction and lead.

Rating and Characteristic Curves

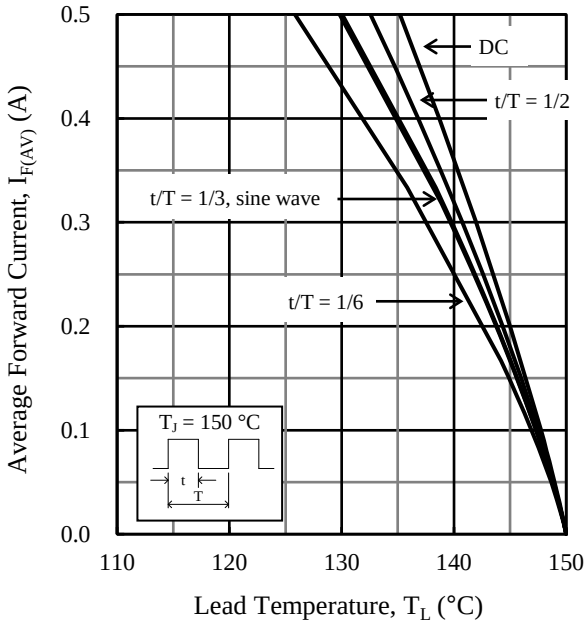


Figure 2. Typical Characteristics: $I_{F(AV)}$ vs. T_L [2] (V_R = 0 V)

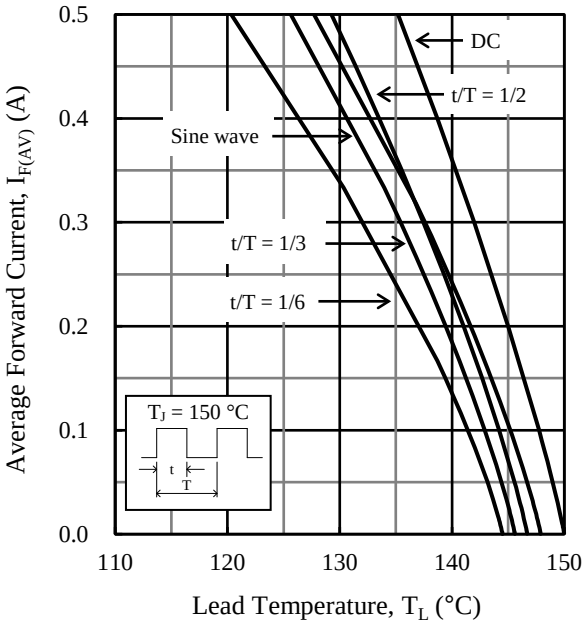


Figure 3. Typical Characteristics: $I_{F(AV)}$ vs. T_L [2] (V_R = 600 V)

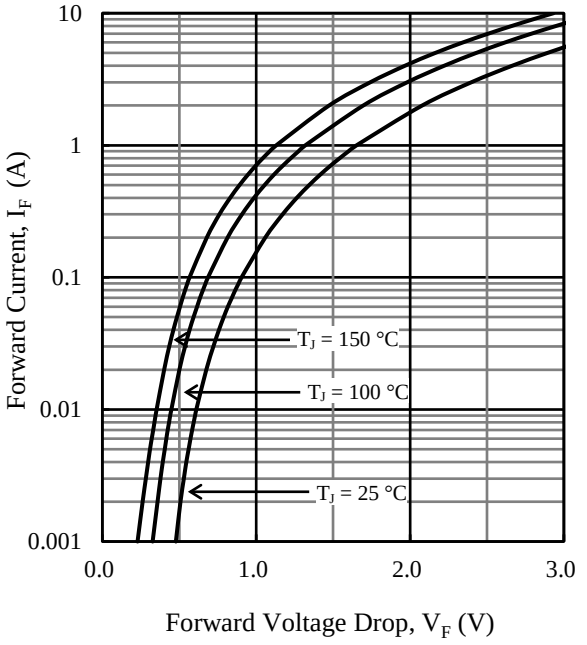


Figure 4. Typical Characteristics: I_F vs. V_F

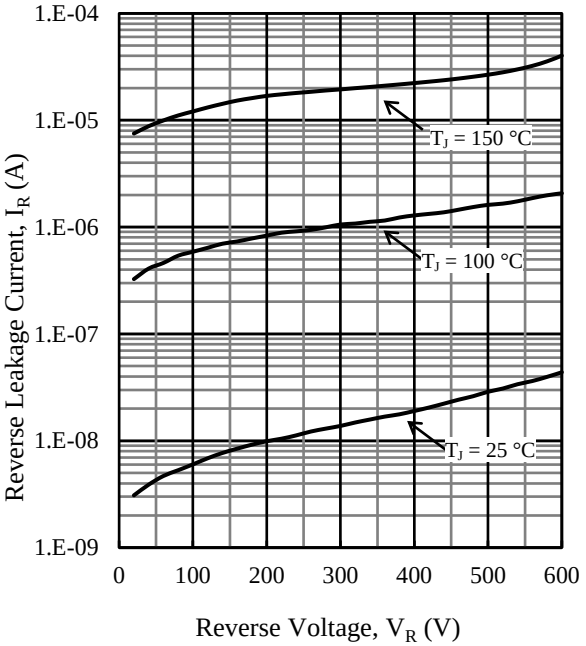
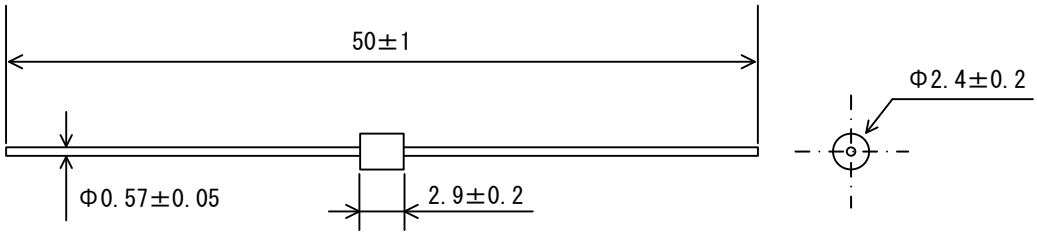


Figure 5. Typical Characteristics: I_R vs. V_R

[2] See Figure 1 for the lead temperature measurement conditions.

Physical Dimensions

● **Axial (φ2.4 × 2.9L / φ0.57)**



NOTES:

- Dimensions in millimeters
- Bare leads: Pb-free (RoHS compliant)
- When soldering the products, it is required to minimize the working time within the following limits:
  Flow: 260 ± 5 °C / 10 ± 1 s, 2 times
  Soldering Iron: 380 ± 10 °C / 3.5 ± 0.5 s, 1 time (Soldering should be at a distance of at least 1.5 mm from the body of the product.)

Marking Diagram

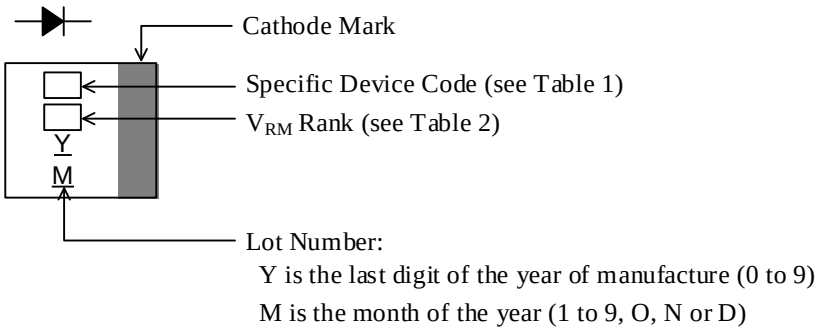


Table 1. Specific Device Code

Specific Device Code	Part Number
G	AG01A

Table 2. V_{RM} Rank

Rank	V_{RM}
A	600 V

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