V_{RM} = 200 V, $I_{F(AV)}$ = 1.0 A, t_{rr} = 50 ns
Fast Recovery Diode

AL01Z

Data Sheet

Description

The AL01Z is a fast recovery diode of 200 V / 1.0 A. The maximum t_{rr} of 50 ns is realized by optimizing a life-time control.

Features

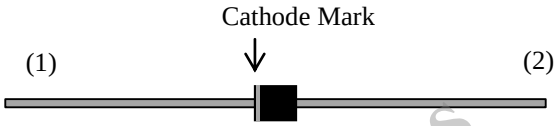
- V_{RM} ---------- 200 V
- $I_{F(AV)}$ ---------- 1.0 A
- V_F ----------0.98 V
- t_{rr1} ---------- 50 ns
- Bare Leads: Pb-free (RoHS Compliant)

Applications

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

Package

Axial (φ2.4 × 2.9L / φ0.57)



(1) Cathode
(2) Anode

Not to scale

Not Recommended for New Designs

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Absolute Maximum Ratings

Unless otherwise specified, T_A = 25 °C

Parameter	Symbol	Rating	Unit	Conditions
Peak Repetitive Reverse Voltage	V_{RSM}	200	V	
Repetitive Reverse Voltage	V_{RM}	200	V	
Average Forward Current	$I_{F(AV)}$	1.0	A	See Figure 2 and Figure 3
Surge Forward Current	I_{FSM}	25	A	Half cycle sine wave, positive side, 10 ms, 1 shot
I^2t Limiting Value	I^2t	3.1	A^2s	1 ms ≤ t ≤ 10 ms
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 = 1.0 A	—	—	0.98	V
		T_J = 100 °C, I_F = 1.0 A	—	0.75	—	V
Reverse Leakage Current	I_R	$V_R = V_{RM}$	—	—	50	μA
Reverse Leakage Current Under High Temperature	$H \cdot I_R$	$V_R = V_{RM}$, T_J = 100 °C	—	—	100	μA
Reverse Recovery Time	t_{rr1}	$I_F = I_{RP}$ = 100 mA, 90% recovery point, T_J = 25 °C	—	—	50	ns
	t_{rr2}	I_F = 100 mA, I_{RP} = 200 mA, 75% recovery point, T_J = 25 °C	—	—	35	ns
Thermal Resistance [1]	$R_{th(J-L)}$	See Figure 1	—	—	22	°C/W

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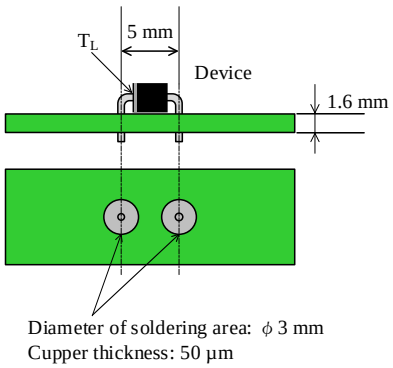

Figure 1 Lead Temperature Measurement Conditions

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

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Rating and Characteristic Curves

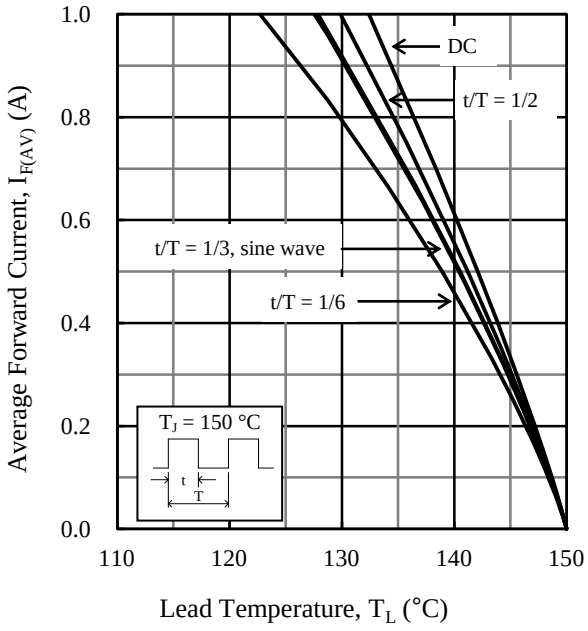

Figure 2. $I_{F(AV)}$ vs. T_L Typical Characteristics[(2)] (V_R = 0 V)

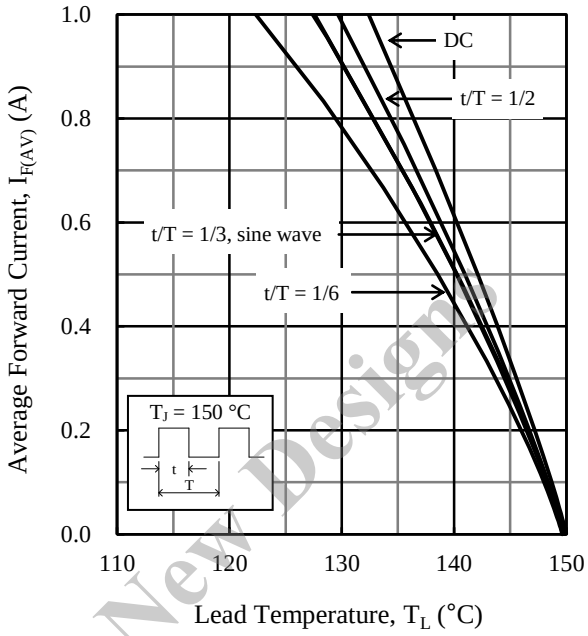

Figure 3. $I_{F(AV)}$ vs. T_L Typical Characteristics[(2)] (V_R = 200 V)

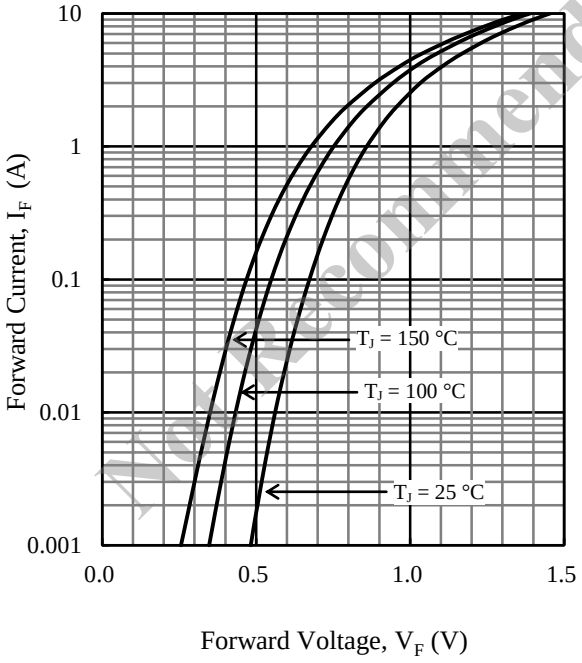

Figure 4. V_F vs. I_F Typical Characteristics

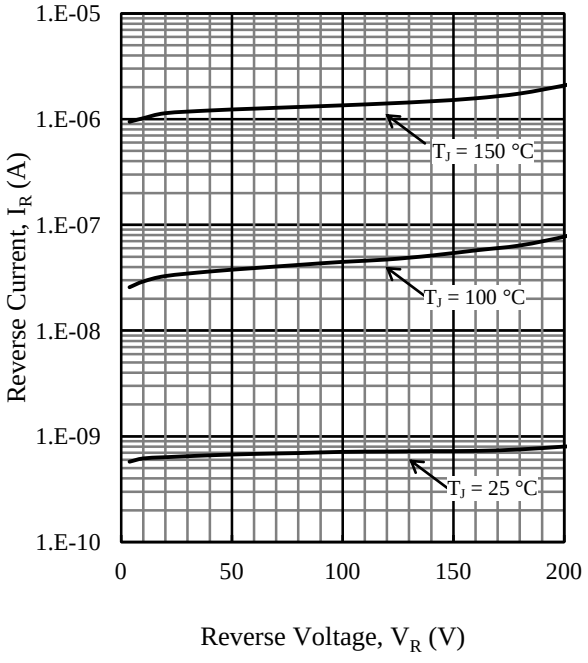

Figure 5. V_R vs. I_R Typical Characteristics

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

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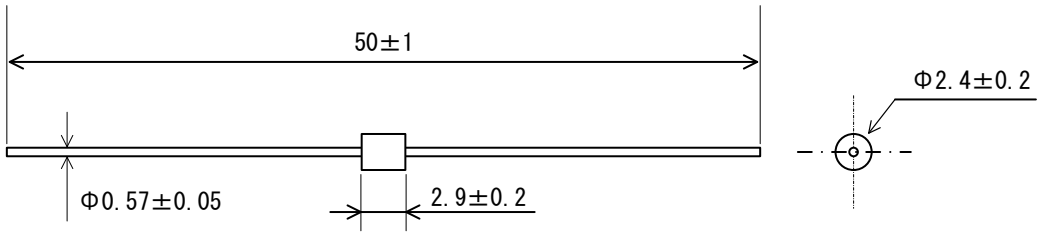
Physical Dimensions

● **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.)

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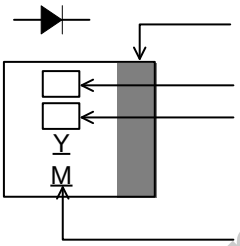
Marking Diagram



Cathode Mark

Specific Device Code (see Table 1)

V_{RM} Rank (see Table 2)

Lot Number:
Y is the last digit of the year of manufacture (0 to 9)
M is the month of the year (1 to 9, O, N or D)

Table 1. Specific Device Code

Specific Device Code	Part Number
L	AL01Z

Table 2. V_{RM} Rank

Rank	V_{RM}
Z	200 V

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