

$V_{RM} = 400\text{ V}$ ,  $I_{F(AV)} = 0.5\text{ A}$ ,  $t_{rr} = 400\text{ ns}$

Fast Recovery Diode

AU01

**Sanken**

Data Sheet

## Description

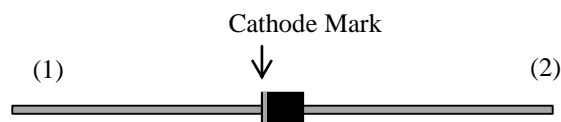
The AU01 is a fast recovery diode of 400 V / 0.5 A. The maximum  $t_{rr}$  of 400 ns is realized by optimizing a life-time control.

## Features

- $V_{RM}$ ----- 400 V
- $I_{F(AV)}$ ----- 0.5 A
- $V_F$ ----- 1.7 V
- $t_{rr1}$ ----- 400 ns
- Bare Leads: Pb-free (RoHS Compliant)

## Package

Axial ( $\phi 2.4 \times 2.9L / \phi 0.57$ )



## Applications

- Secondary Side Rectifier Diode  
(Flyback Converter, LLC Converter, etc.)
- Freewheel Diode  
(Offline Buck and Buck-boost Converter)



(1) Cathode  
(2) Anode

Not to scale

## Absolute Maximum Ratings

Unless otherwise specified,  $T_A = 25\text{ }^{\circ}\text{C}$

Parameter	Symbol	Conditions	Rating	Unit
Peak Repetitive Reverse Voltage	$V_{\text{RSM}}$		450	V
Repetitive Reverse Voltage	$V_{\text{RM}}$		400	V
Average Forward Current	$I_{\text{F(AV)}}$	See Figure 2 and Figure 3	0.5	A
Surge Forward Current	$I_{\text{FSM}}$	Half cycle sine wave, positive side, 10 ms, 1 shot	15	A
$I^2t$ Limiting Value	$I^2t$	$1\text{ ms} \leq t \leq 10\text{ ms}$	1	$\text{A}^2\text{s}$
Junction Temperature	$T_J$		-40 to 150	$^{\circ}\text{C}$
Storage Temperature	$T_{\text{STG}}$		-40 to 150	$^{\circ}\text{C}$

## Electrical Characteristics

Unless otherwise specified,  $T_A = 25\text{ }^{\circ}\text{C}$

Parameter	Symbol	Conditions	Min.	Typ.	Max.	Unit
Forward Voltage Drop	$V_F$	$T_J = 25\text{ }^{\circ}\text{C}$ , $I_F = 0.5\text{ A}$	—	—	1.7	V
		$T_J = 100\text{ }^{\circ}\text{C}$ , $I_F = 0.5\text{ A}$	—	1.05	—	V
Reverse Leakage Current	$I_R$	$V_R = V_{\text{RM}}$	—	—	10	$\mu\text{A}$
Reverse Leakage Current Under High Temperature	$H \cdot I_R$	$V_R = V_{\text{RM}}$ , $T_J = 100\text{ }^{\circ}\text{C}$	—	—	150	$\mu\text{A}$
Reverse Recovery Time	$t_{\text{rr1}}$	$I_F = I_{\text{RP}} = 10\text{ mA}$ , 90% recovery point, $T_J = 25\text{ }^{\circ}\text{C}$	—	—	400	ns
	$t_{\text{rr2}}$	$I_F = 10\text{ mA}$ , $I_{\text{RP}} = 20\text{ mA}$ , 75% recovery point, $T_J = 25\text{ }^{\circ}\text{C}$	—	—	180	ns
Thermal Resistance <sup>(1)</sup>	$R_{\text{th(J-L)}}$	See Figure 1	—	—	22	$^{\circ}\text{C/W}$

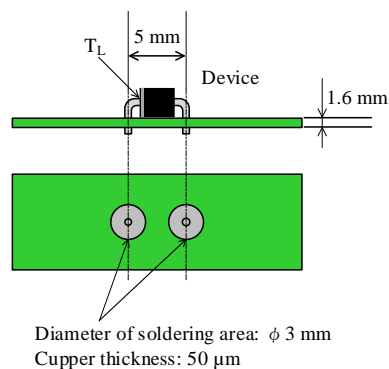


Figure 1 Lead Temperature Measurement Conditions

<sup>(1)</sup>  $R_{\text{th(J-L)}}$  is thermal resistance between junction and lead.

## Rating and Characteristic Curves

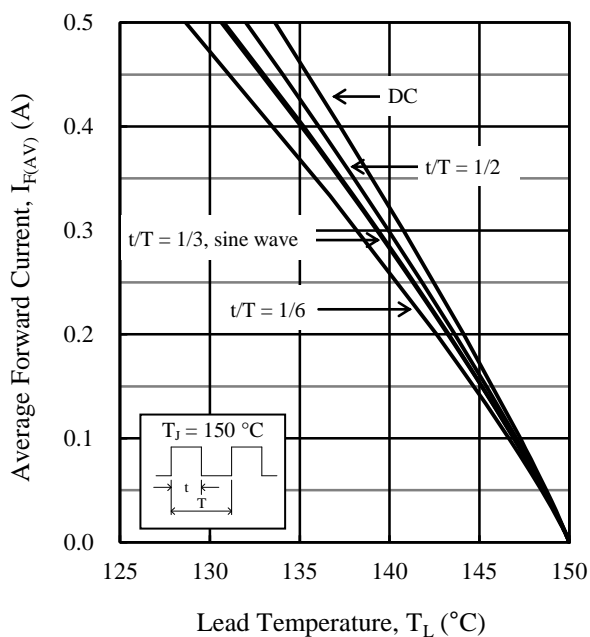


Figure 2.  $I_{F(AV)}$  vs.  $T_L$  Typical Characteristics<sup>(2)</sup>  
( $V_R = 0$  V)

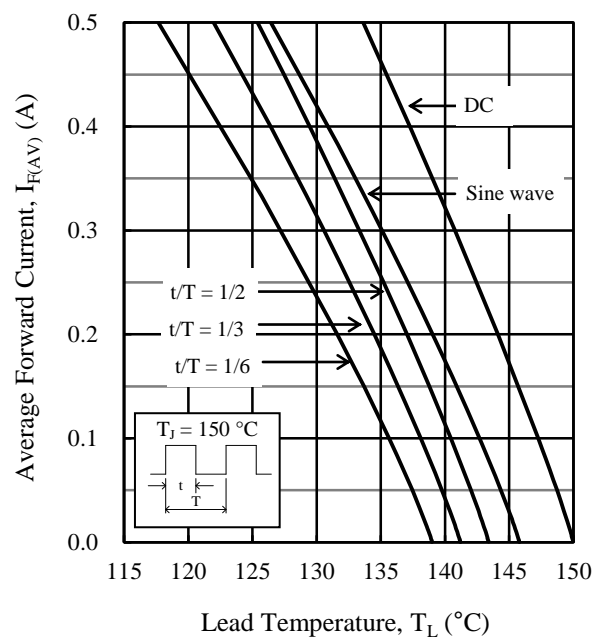


Figure 3.  $I_{F(AV)}$  vs.  $T_L$  Typical Characteristics<sup>(2)</sup>  
( $V_R = 400$  V)

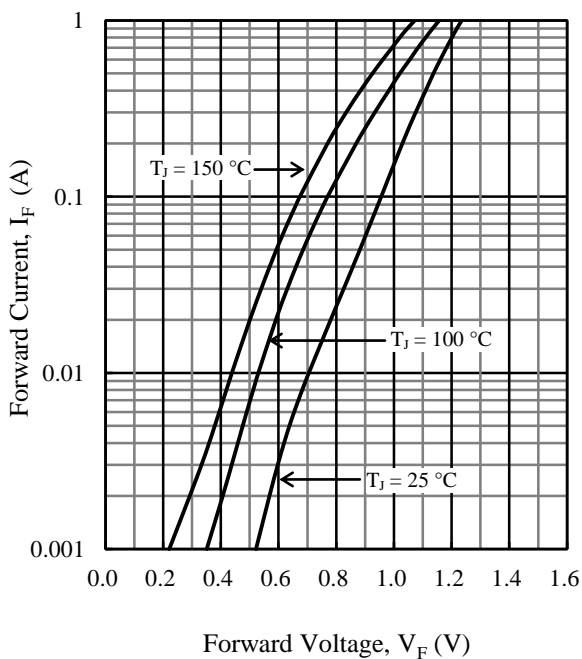


Figure 4.  $V_F$  vs.  $I_F$  Typical Characteristics

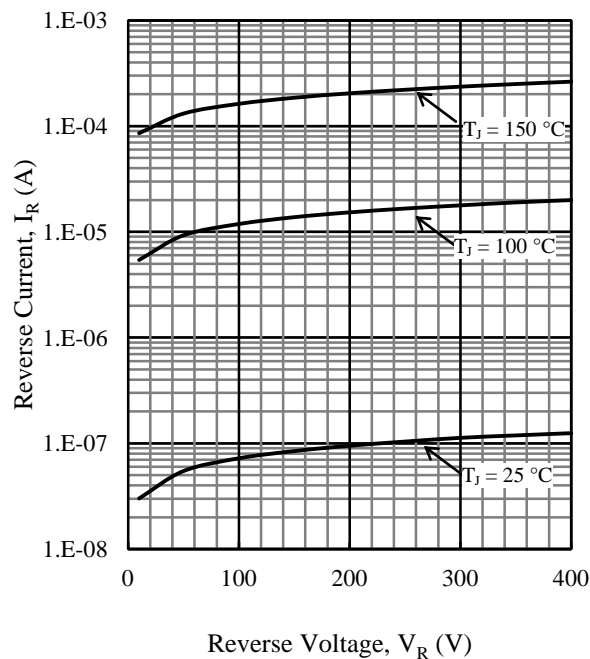
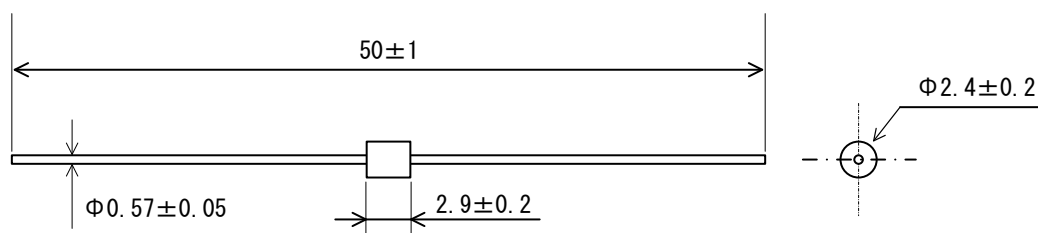


Figure 5.  $V_R$  vs.  $I_R$  Typical Characteristics

<sup>(2)</sup> See Figure 1 for the lead temperature measurement conditions.

## Physical Dimensions

### • Axial ( $\phi 2.4 \times 2.9L / \phi 0.57$ )



### 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:  $260 \pm 5$  °C /  $10 \pm 1$  s, 2 times  
 Soldering Iron:  $380 \pm 10$  °C /  $3.5 \pm 0.5$  s, 1 time (Soldering should be at a distance of at least 1.5 mm from the body of the product.)

## Marking Diagram

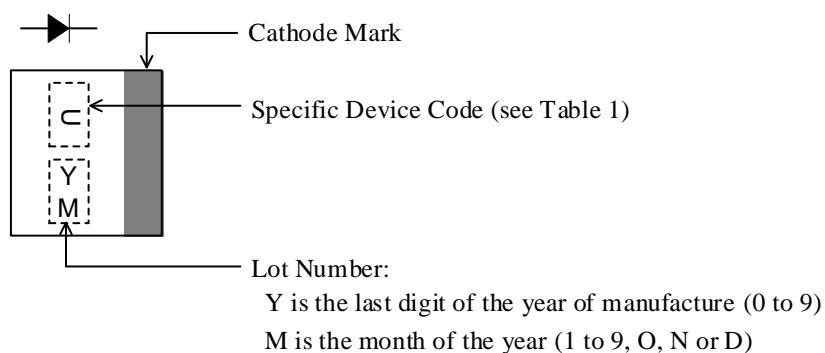


Table 1. Specific Device Code

Specific Device Code	Part Number
U	AU01

### NOTE:

- Marked in silver-based color

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