

**$V_{RM} = 400\text{ V}$ ,  $I_{F(AV)} = 0.5\text{ A}$ ,  $t_{rr} = 400\text{ ns}$**   
**Fast Recovery Diode**  
**AU01**

**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**

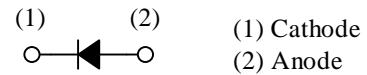
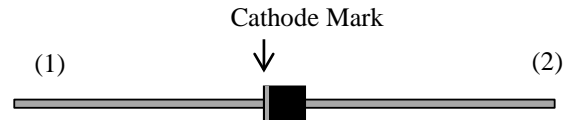
- $V_{RM}$ ----- 400 V
- $I_{F(AV)}$ ----- 0.5 A
- $V_F$ ----- 1.7 V
- $t_{rr1}$ ----- 400 ns
- Bare Leads: Pb-free (RoHS Compliant)
- Flammability: Equivalent to UL94V-0

**Applications**

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

**Package**

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



Not to scale

## Absolute Maximum Ratings

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

Parameter	Symbol	Conditions	Rating	Unit
Nonrepetitive Peak Reverse Voltage	$V_{RSM}$		450	V
Repetitive Peak Reverse Voltage	$V_{RM}$		400	V
Average Forward Current	$I_{F(AV)}$	See Figure 2 and Figure 3	0.5	A
Surge Forward Current	$I_{FSM}$	Half cycle sine wave, positive side, 10 ms, 1 shot	15	A
$I^2t$ Limiting Value	$I^2t$	$1\text{ ms} \leq t \leq 10\text{ ms}$	1	$\text{A}^2\text{s}$
Junction Temperature	$T_J$		-40 to 150	$^{\circ}\text{C}$
Storage Temperature	$T_{STG}$		-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	$I_R$	$V_R = V_{RM}$	—	—	10	$\mu\text{A}$
Reverse Leakage Current under High Temperature	$H \cdot I_R$	$V_R = V_{RM}$ , $T_J = 100\text{ }^{\circ}\text{C}$	—	—	150	$\mu\text{A}$
Reverse Recovery Time	$t_{rr1}$	$I_F = I_{RP} = 10\text{ mA}$ , 90% recovery point, $T_J = 25\text{ }^{\circ}\text{C}$	—	—	400	ns
	$t_{rr2}$	$I_F = 10\text{ mA}$ , $I_{RP} = 20\text{ mA}$ , 75% recovery point, $T_J = 25\text{ }^{\circ}\text{C}$	—	—	180	ns
Thermal Resistance <sup>(1)</sup>	$R_{th(J-L)}$	See Figure 1	—	—	22	$^{\circ}\text{C/W}$

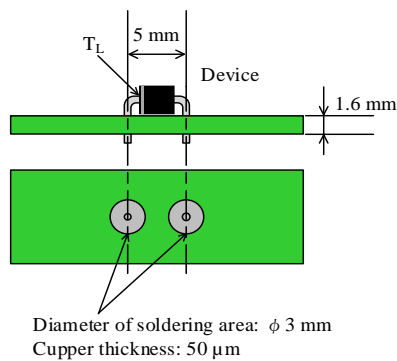


Figure 1. Lead Temperature Measurement Conditions

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

## Rating and Characteristic Curves

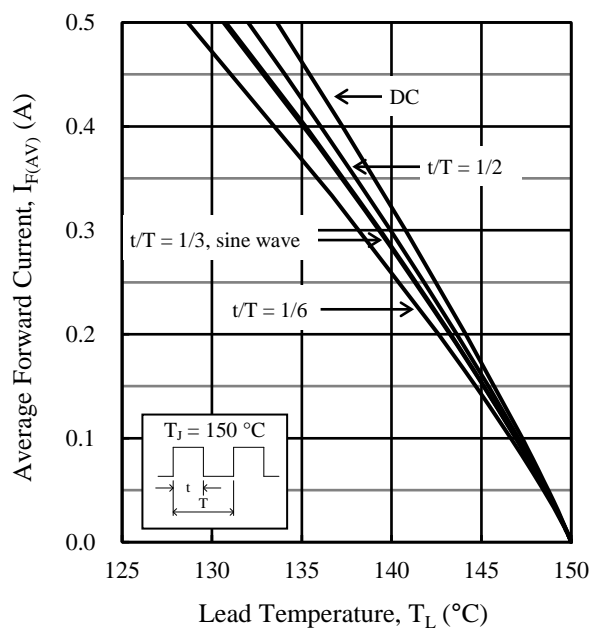


Figure 2. Typical Characteristics:  $I_{F(AV)}$  vs.  $T_L$ <sup>(2)</sup>  
( $V_R = 0$  V)

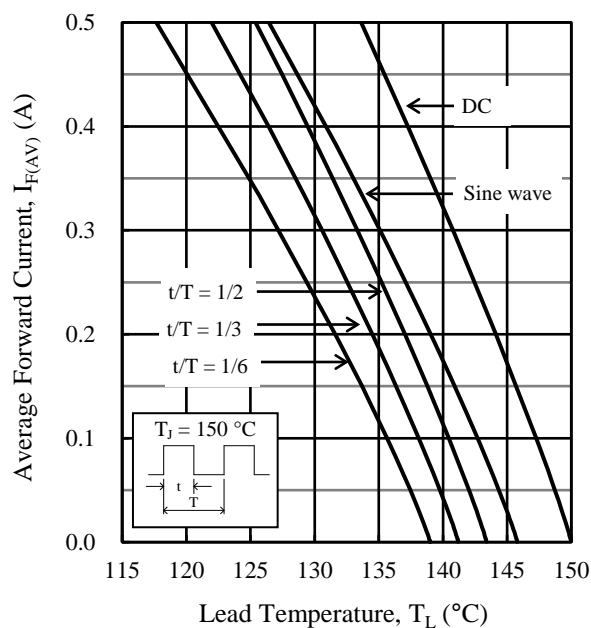


Figure 3. Typical Characteristics:  $I_{F(AV)}$  vs.  $T_L$ <sup>(2)</sup>  
( $V_R = 400$  V)

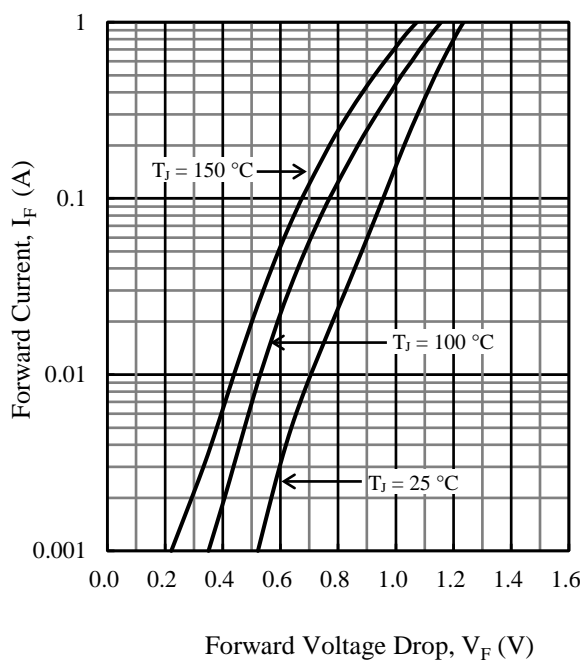


Figure 4. Typical Characteristics:  $I_F$  vs.  $V_F$

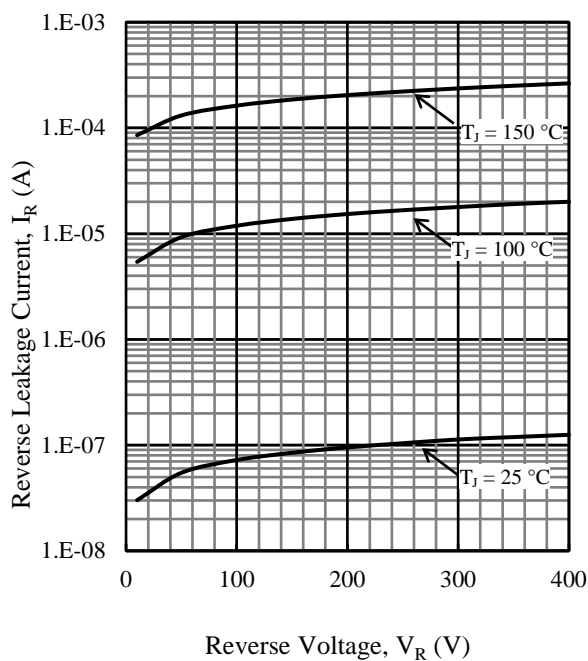
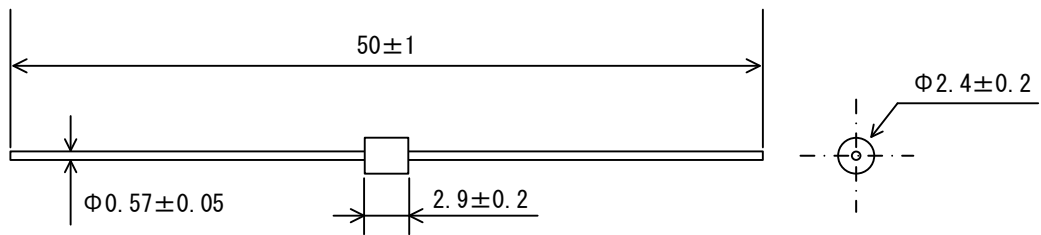


Figure 5. Typical Characteristics:  $I_R$  vs.  $V_R$

<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

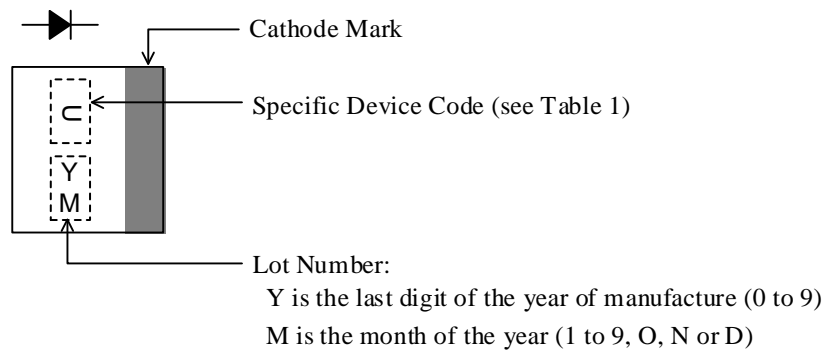


Table 1. Specific Device Code

Specific Device Code	Part Number
U	AU01

NOTE:

- Marked in silver-based color

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DSGN-CEZ-16003