

$V_{RSM} = 40\text{ V}$, $I_{F(AV)} = 1.0\text{ A}$

Schottky Diode

AK04

Description

The AK04 is a 40 V, 1.0 A Schottky diode with allowing improvements in V_F and I_R characteristics.

These characteristic features contribute to improving power supply efficiency and to enabling high-frequency systems.

Features

- V_{RSM} ----- 40 V
- $I_{F(AV)}$ ----- 1.0 A
- V_F ($I_F = 1.0\text{ A}$) ----- 0.49 V typ.
- Bare Leads: Pb-free (RoHS Compliant)

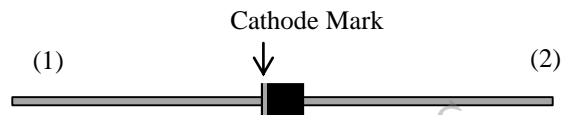
Applications

The high speed switching applications as follows:

- DC-DC Converter
- Adapter

Package

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



Not to scale

Not Recommended for New Designs

Absolute Maximum Ratings

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

Parameter	Symbol	Rating	Unit	Conditions
Peak Repetitive Reverse Voltage	V_{RSM}	40	V	
Repetitive Reverse Voltage	V_{RM}	40	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	3.125	A^2s	$1\text{ ms} \leq t \leq 10\text{ms}$
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	$I_F = 1.0\text{ A}$	—	0.49	0.55	V
Reverse Leakage Current	I_R	$V_R = V_{RM}$	—	—	5	mA
Reverse Leakage Current Under High Temperature	$H \cdot I_R$	$V_R = V_{RM}, T_J = 150\text{ }^\circ\text{C}$	—	—	35	mA
Thermal Resistance ⁽¹⁾	$R_{th(J-L)}$	See Figure 1	—	—	22	$^\circ\text{C/W}$

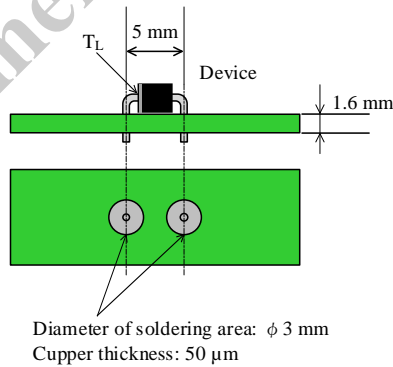


Figure 1 Lead Temperature Measurement Conditions

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

Rating and Characteristic Curves

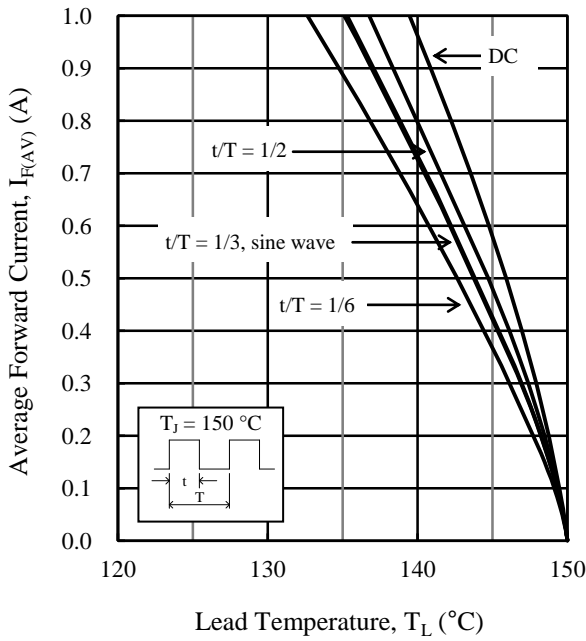


Figure 2. $I_{F(AV)}$ vs. T_L Typical Characteristics⁽²⁾
($V_R = 0$ V)

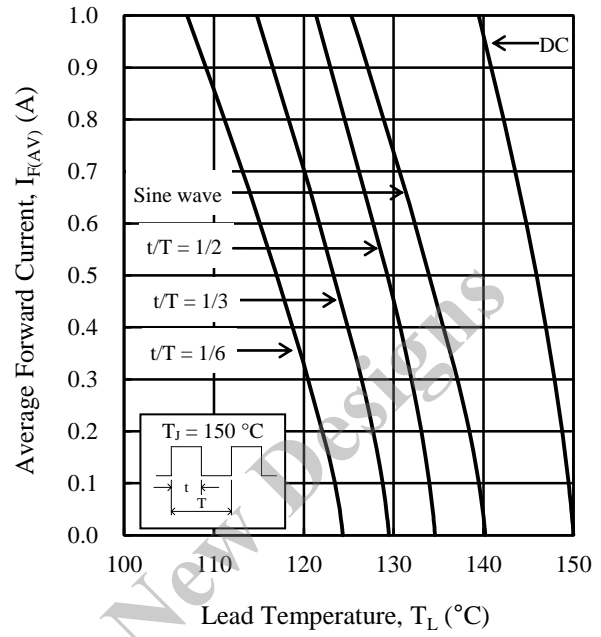


Figure 3. $I_{F(AV)}$ vs. T_L Typical Characteristics⁽²⁾
($V_R = 40$ V)

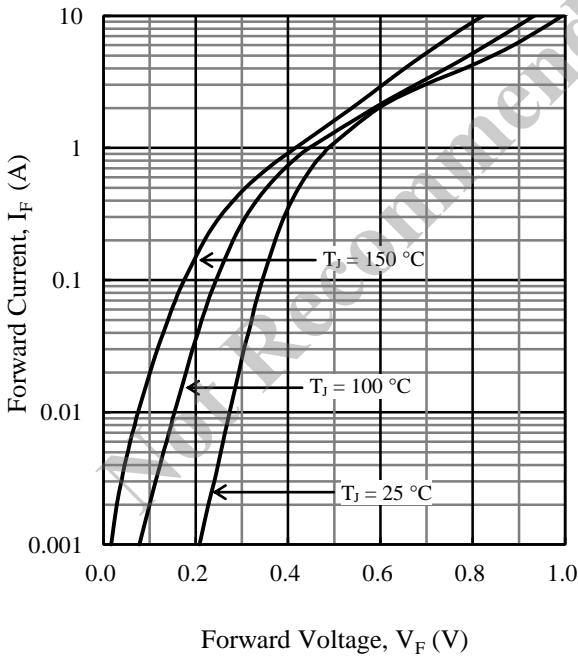


Figure 4. V_F vs. I_F Typical Characteristics

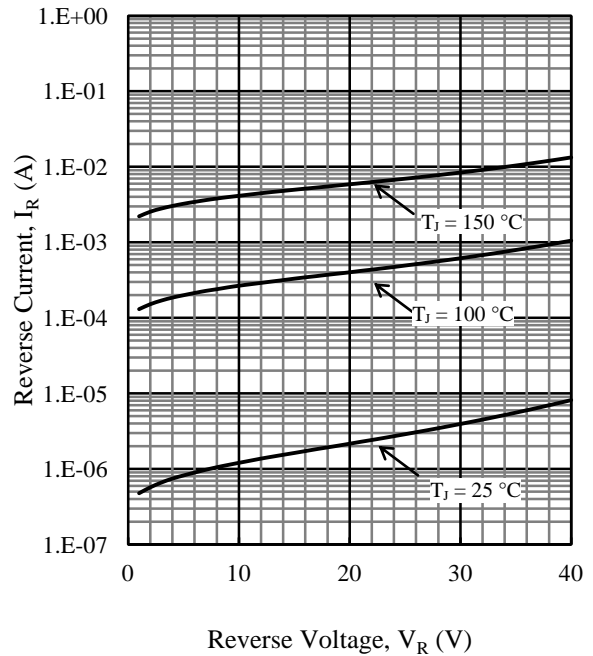
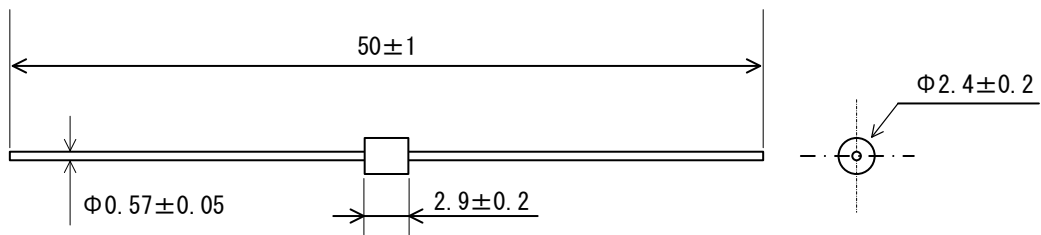


Figure 5. V_R vs. I_R Typical Characteristics

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

Marking Diagram

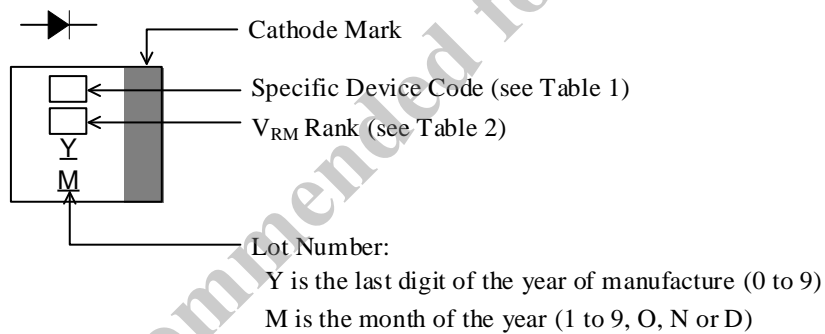


Table 1. Specific Device Code

Specific Device Code	Part Number
K	AK04

Table 2. V_{RM} Rank

Rank	V_{RM}
4	40 V

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