

## 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**

- Bare Leads: Pb-free (RoHS Compliant)

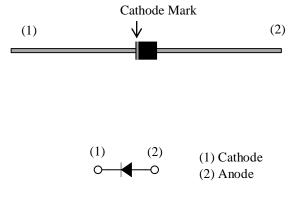
## Applications

The high speed switching applications as follows:

- DC-DC Converter
- Adapter

## Package

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



# **Absolute Maximum Ratings**

Unless otherwise specified,  $T_A = 25$  °C.

Parameter	Symbol	Rating	Unit	Conditions
Peak Repetitive Reverse Voltage	V <sub>RSM</sub>	40	V	
Repetitive Reverse Voltage	V <sub>RM</sub>	40	V	
Average Forward Current	I <sub>F(AV)</sub>	1.0	А	See Figure 2 and Figure 3
Surge Forward Current	I <sub>FSM</sub>	25	А	Half cycle sine wave, positive side, 10 ms, 1 shot
I <sup>2</sup> t Limiting Value	I <sup>2</sup> t	3.125	A <sup>2</sup> s	$1 \text{ ms} \le t \le 10 \text{ms}$
Junction Temperature	T <sub>J</sub>	-40 to 150	°C	
Storage Temperature	T <sub>STG</sub>	-40 to 150	°C	

## **Electrical Characteristics**

Unless otherwise specified,  $T_A = 25$  °C.

Parameter	Symbol	Conditions	Min.	Тур.	Max.	Unit
Forward Voltage Drop	$V_{\rm F}$	$I_{\rm F} = 1.0 \ {\rm A}$		0.49	0.55	V
Reverse Leakage Current	I <sub>R</sub>	$V_R = V_{RM}$		_	5	mA
Reverse Leakage Current Under High Temperature	$H{\cdot}I_{R}$	$V_{R} = V_{RM}, T_{J} = 150 \ ^{\circ}C$	_		35	mA
Thermal Resistance <sup>(1)</sup>	R <sub>th(J-L)</sub>	See Figure 1			22	°C/W

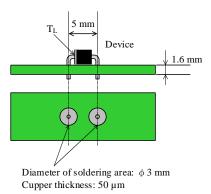


Figure 1 Lead Temperature Measurement Conditions

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

#### **Rating and Characteristic Curves**

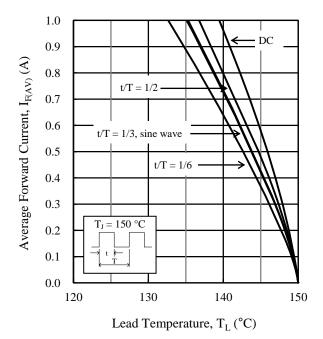


Figure 2.  $I_{F(AV)}$  vs.  $T_L$  Typical Characteristics<sup>(2)</sup> ( $V_R = 0$  V)

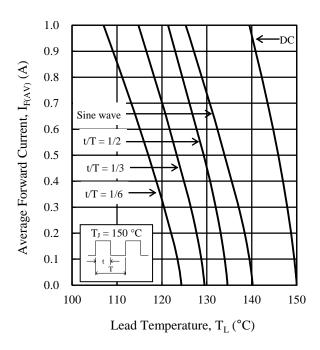
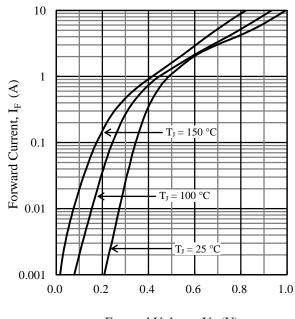
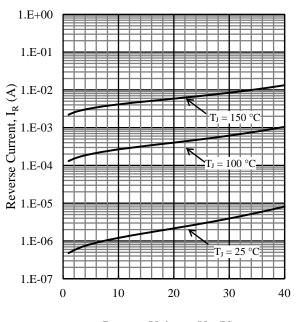


Figure 3.  $I_{F(AV)}$  vs.  $T_L$  Typical Characteristics<sup>(2)</sup> ( $V_R = 40$  V)



Forward Voltage, V<sub>F</sub>(V)

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



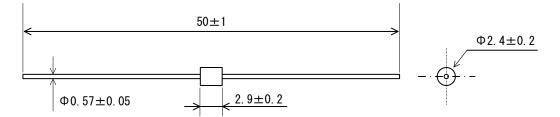
Reverse Voltage,  $V_R(V)$ 

Figure 5. V<sub>R</sub> vs. I<sub>R</sub> 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:  $260 \pm 5 \text{ °C} / 10 \pm 1 \text{ s}, 2 \text{ times}$
- 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**

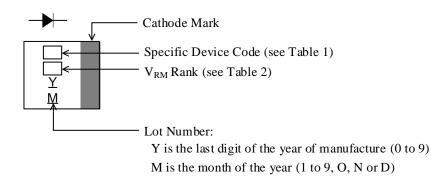


Table 1.	Specific Device Code
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Specific Device Code	Part Number
К	AK04

Table 2. V<sub>RM</sub> Rank

Rank	V <sub>RM</sub>
4	40 V

#### **Important Notes**

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