

**$V_{RM} = 40\text{ V}$ ,  $I_{F(AV)} = 1.0\text{ A}$**   
**Schottky Diode**  
**EK04**

## Description

The EK04 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

- $V_{RM}$ -----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)

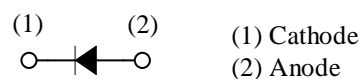
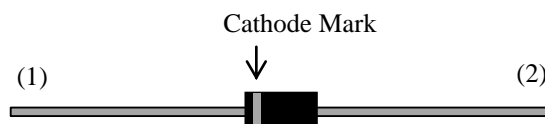
## Applications

The high speed switching applications as follows:

- DC-DC Converter
- Adapter

## Package

Axial ( $\phi 2.7 \times 5.0L / \phi 0.6$ )



Not to scale

## Absolute Maximum Ratings

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

Parameter	Symbol	Rating	Unit	Conditions
Peak Repetitive Reverse Voltage	$V_{\text{RSM}}$	45	V	
Repetitive Reverse Voltage	$V_{\text{RM}}$	40	V	
Average Forward Current	$I_{\text{F(AV)}}$	1.0	A	See Figure 2 and Figure 3
Surge Forward Current	$I_{\text{FSM}}$	40	A	Half cycle sine wave, positive side, 10 ms, 1 shot
$I^2t$ Limiting Value	$I^2t$	8.0	$\text{A}^2\text{s}$	$1\text{ ms} \leq t \leq 10\text{ms}$
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	$V_F$	$I_F = 1.0\text{ A}$	—	0.49	0.55	V
Reverse Leakage Current	$I_R$	$V_R = V_{\text{RM}}$	—	—	5.0	mA
Reverse Leakage Current Under High Temperature	$H \cdot I_R$	$V_R = V_{\text{RM}}, T_J = 150\text{ }^{\circ}\text{C}$	—	—	35	mA
Thermal Resistance <sup>(1)</sup>	$R_{\text{th(J-L)}}$	See Figure 1	—	—	20	$^{\circ}\text{C/W}$

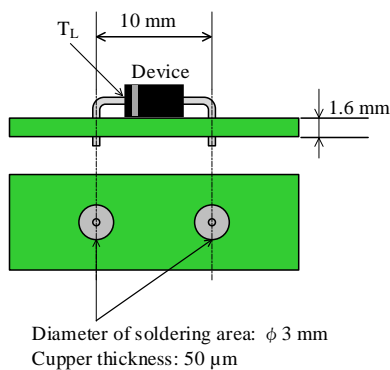


Figure 1 Lead Temperature Measurement Point

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

# Rating and Characteristic Curves

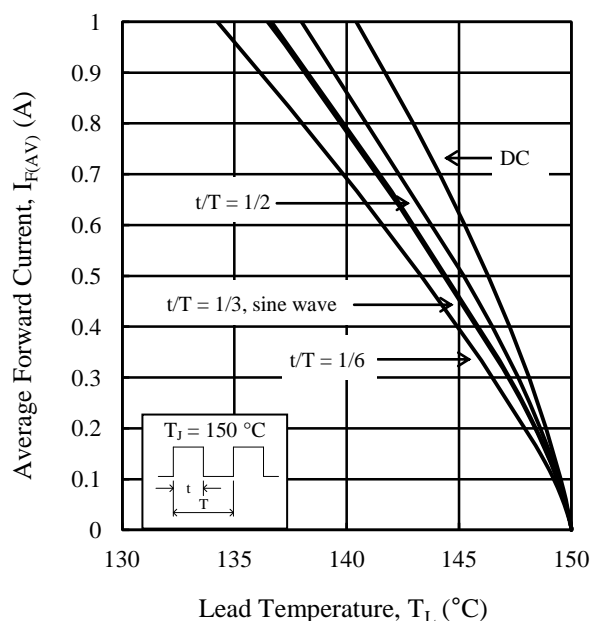


Figure 2.  $I_{F(AV)}$  vs.  $T_L$  Typical Characteristics<sup>(2)</sup>  
( $V_R = 0$  V)

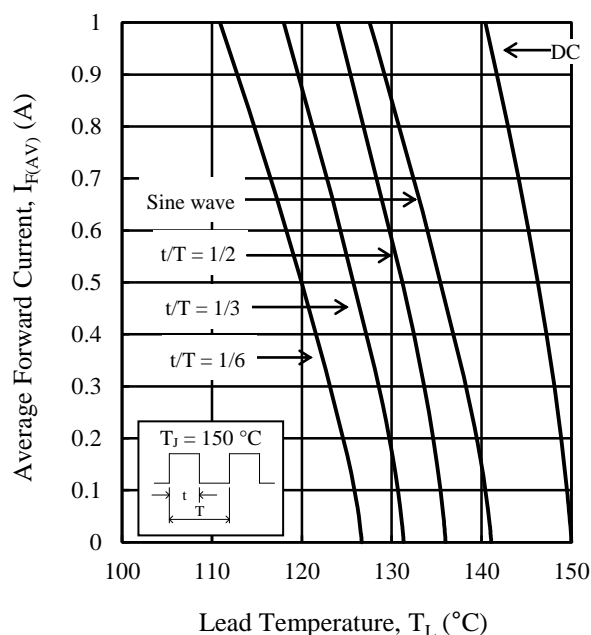


Figure 3.  $I_{F(AV)}$  vs.  $T_L$  Typical Characteristics<sup>(2)</sup>  
( $V_R = 40$  V)

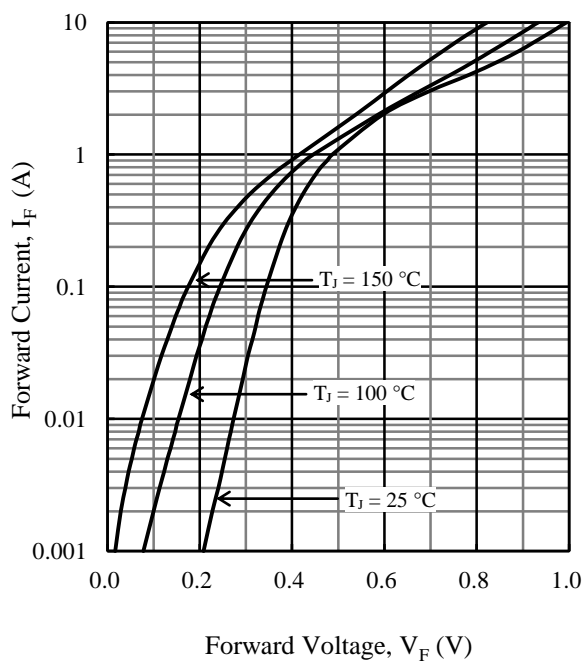


Figure 4.  $V_F$  vs.  $I_F$  Typical Characteristics

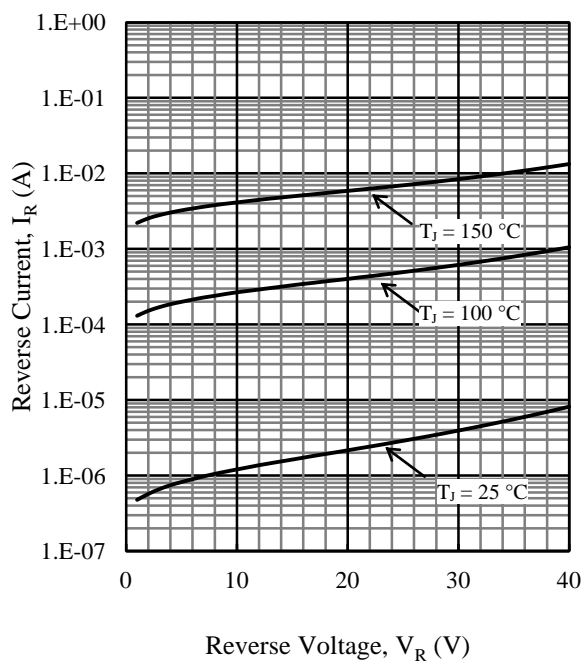
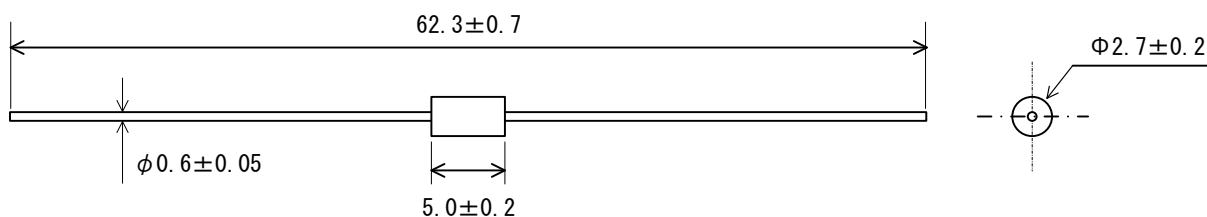


Figure 5.  $V_R$  vs.  $I_R$  Typical Characteristics

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

## Physical Dimensions

### • Axial ( $\phi 2.7 \times 5.0L / \phi 0.6$ )



### 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

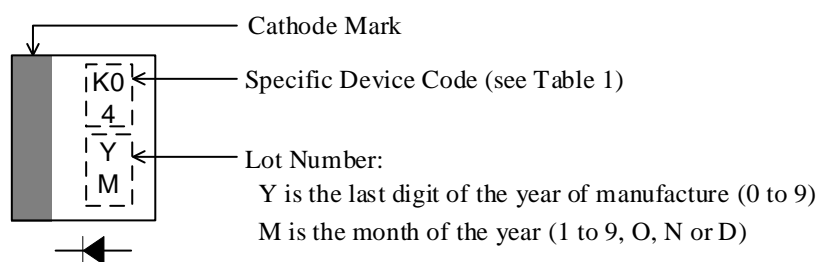


Table 1. Specific Device Code

Specific Device Code	Part Number
K04	EK04

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DSGN-CEZ-16003