

**$V_{RM} = 600\text{ V}$ ,  $I_{F(AV)} = 1.0\text{ A}$**   
**General-purpose Rectifier Diode**  
**EM01A**

### Description

The EM01A is a 600 V, 1.0 A general-purpose rectifier diode with low loss characteristics. This rectifier diode is for a commercial power supply.

### Features

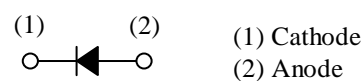
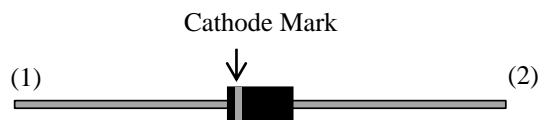
- $V_{RM}$  ----- 600 V
- $I_{F(AV)}$  ----- 1.0 A
- $V_F$  ( $I_F = 1.0\text{ A}$ ) ----- 0.90 V typ.
- Bare Leads: Pb-free (RoHS Compliant)
- Flammability: Equivalent to UL94V-0

### Applications

- Rectification Circuit
- Reverse Protection Circuit

### Package

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



Not to scale

## EM01A

### Absolute Maximum Ratings

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

Parameter	Symbol	Conditions	Rating	Unit
Nonrepetitive Peak Reverse Voltage	$V_{RSM}$		650	V
Repetitive Peak Reverse Voltage	$V_{RM}$		600	V
Average Forward Current	$I_{F(AV)}$	See Figure 2 and Figure 3.	1.0	A
Surge Forward Current	$I_{FSM}$	Half cycle sine wave, positive side, 10 ms, 1 shot	45	A
$I^2t$ Limiting Value	$I^2t$	$1\text{ ms} \leq t \leq 10\text{ ms}$	10	$\text{A}^2\text{s}$
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	$V_F$	$I_F = 1.0\text{ A}$	—	0.90	0.97	V
Reverse Leakage Current	$I_R$	$V_R = V_{RM}$	—	—	10	$\mu\text{A}$
Reverse Leakage Current under High Temperature	$H \cdot I_R$	$V_R = V_{RM}, T_J = 100\text{ }^\circ\text{C}$	—	—	50	$\mu\text{A}$
Thermal Resistance <sup>(1)</sup>	$R_{th(J-L)}$	See Figure 1.	—	—	20	$^\circ\text{C/W}$

### Mechanical Characteristics

Parameter	Conditions	Min.	Typ.	Max.	Unit
Package Weight		—	0.2	—	g

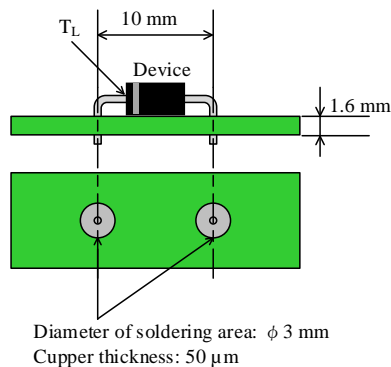


Figure 1. Lead Temperature Measurement Conditions

<sup>(1)</sup>  $R_{th(J-L)}$  is thermal resistance between junction and lead. Lead temperature ( $T_L$ ) is measured near the root of pin (see Figure 1).

Derating Curves

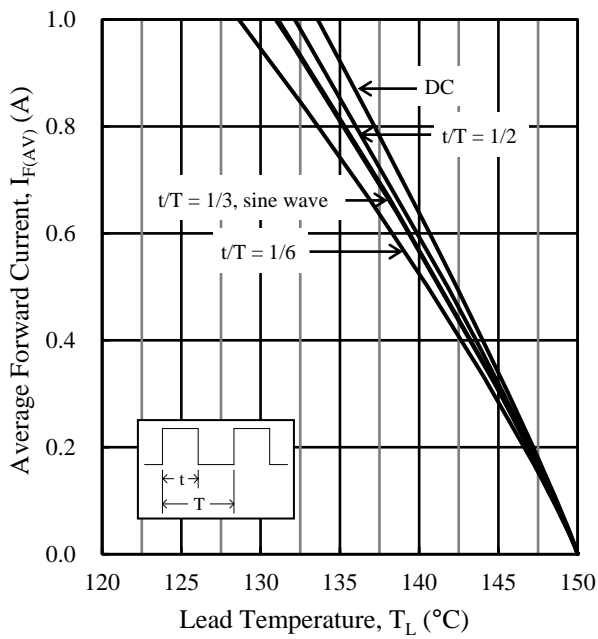


Figure 2.  $I_{F(AV)}$  vs.  $T_L^{(2)}$  ( $T_J = 150\text{ }^\circ\text{C}$ ,  $V_R = 0\text{ V}$ )

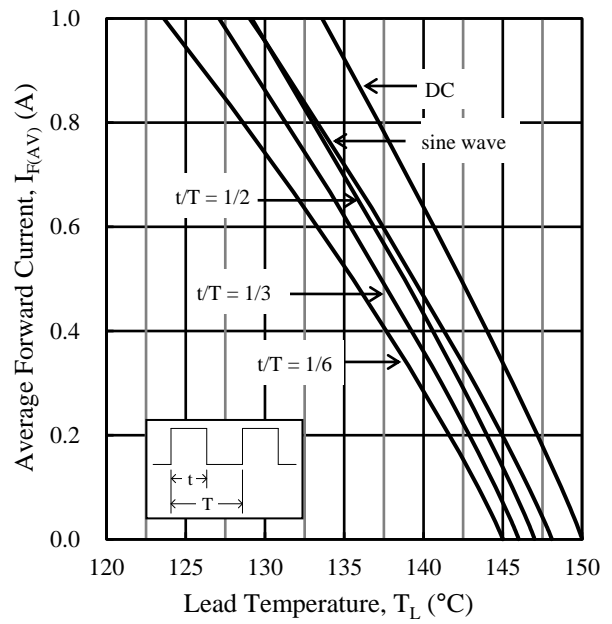


Figure 3.  $I_{F(AV)}$  vs.  $T_L^{(2)}$  ( $T_J = 150\text{ }^\circ\text{C}$ ,  $V_R = 600\text{ V}$ )

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

Characteristic Curves

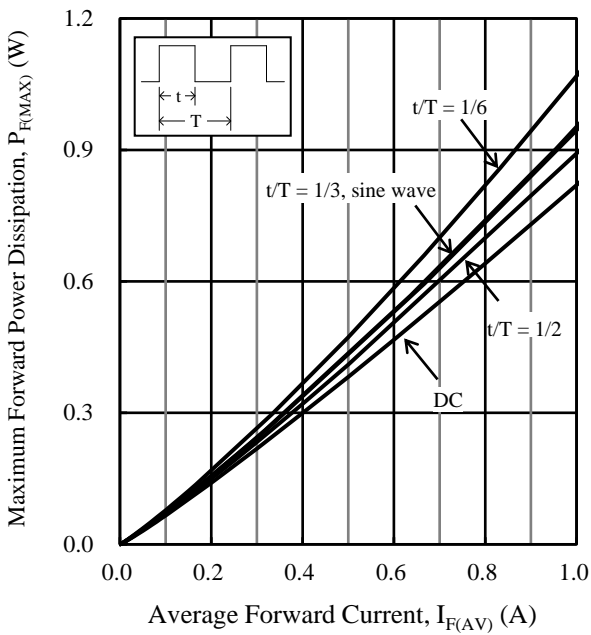


Figure 4.  $P_{F(MAX)}$  vs.  $I_{F(AV)}$  ( $T_J = 150\text{ }^\circ\text{C}$ )

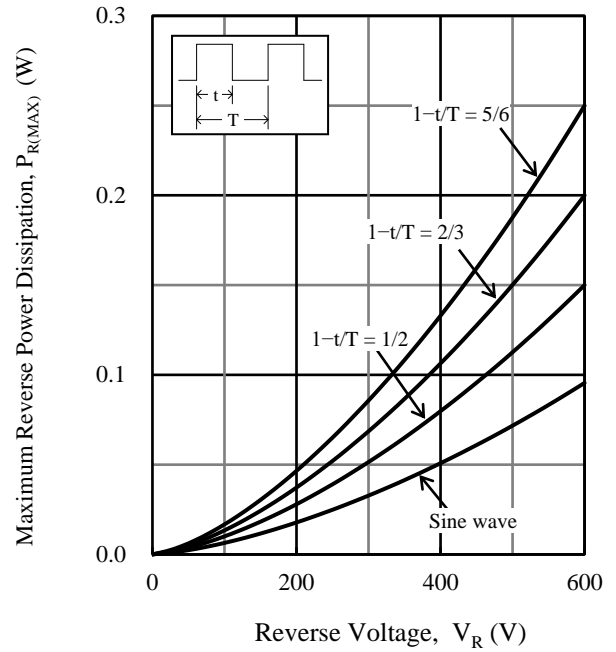


Figure 5.  $P_{R(MAX)}$  vs.  $V_R$  ( $T_J = 150\text{ }^\circ\text{C}$ )

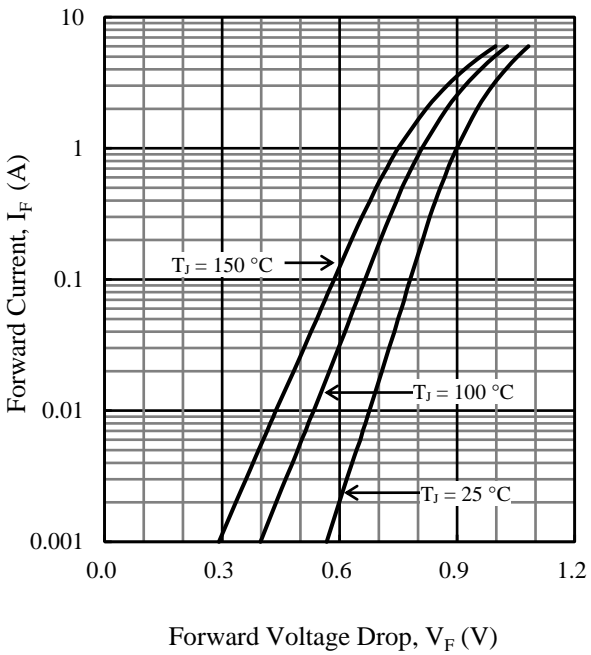


Figure 6. Typical Characteristics:  $I_F$  vs.  $V_F$

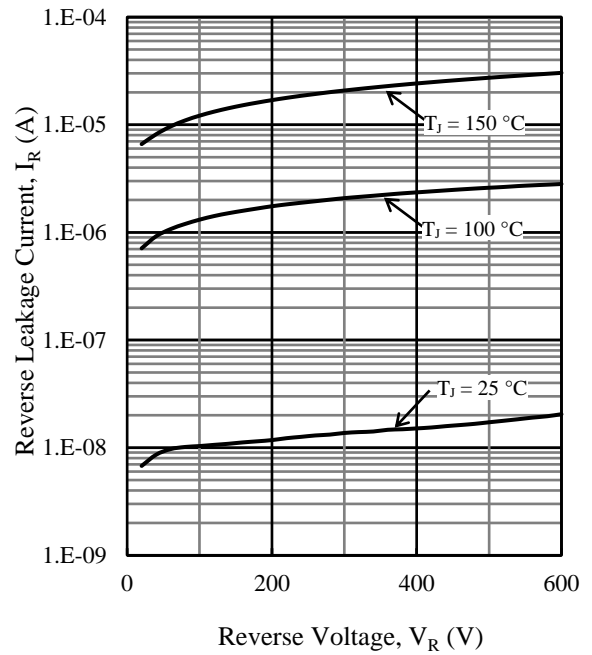


Figure 7. Typical Characteristics:  $I_R$  vs.  $V_R$

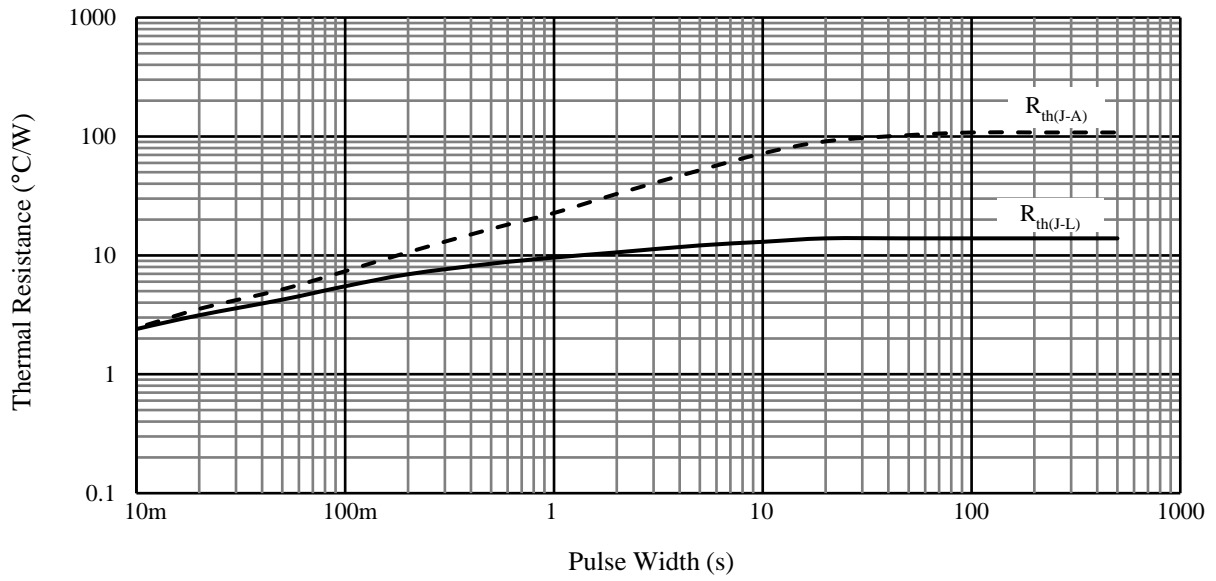
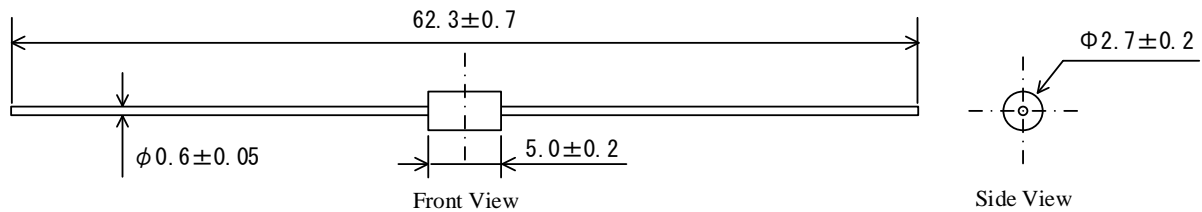


Figure 8. Typical Transient Thermal Resistance Characteristics

# EM01A

## Physical Dimensions

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



## NOTES:

- Dimensions in millimeters
- Bare leads: Pb-free (RoHS compliant)
- The total length of the product is the dimension when delivered separately and depends on the taping and lead forming specifications.
- The allowance position of body against the center of the total length of the product is 0.5 mm (max.); see Front View.
- The allowance position of lead against the center of body is 0.2 mm (max.); see Side View.
- The burr may exist up to 2 mm from the body of lead root.
- When soldering the products, it is required to minimize the working time within the following limits:
  - Flow:  $260\text{ }^{\circ}\text{C} / 10\text{ s}$ , 1 time
  - Soldering Iron:  $350\text{ }^{\circ}\text{C} / 3.5\text{ s}$ , 1 time (Soldering should be at a distance of at least 1.5 mm from the body of the product.)

## Marking Diagram

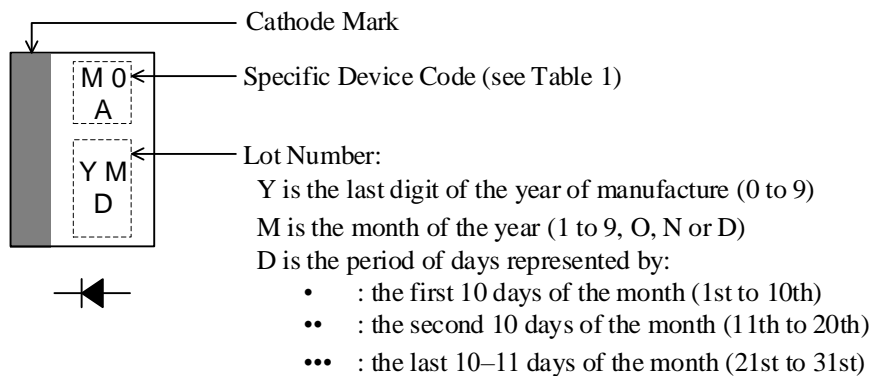


Table 1. Specific Device Code

Specific Device Code	Part Number
M0A	EM01A

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