

$V_{RM} = 4 \text{ kV}$, $I_{F(AV)} = 350 \text{ mA}$
High-Frequency and High-Voltage Rectifier Diode
UX-A5B

Description

The UX-A5B is a low-loss and high-voltage rectifier diode.

The product achieves a typical forward voltage drop, V_F , of 6.0 V and a typical reverse recovery, t_{rr} , of 0.06 μs by optimizing trade-offs between V_F and t_{rr} .

Features

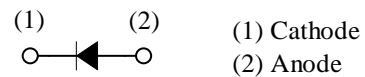
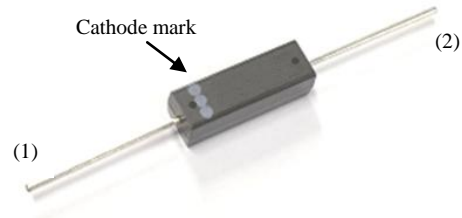
- Bare Leads: Pb-free (RoHS Compliant)
- V_{RM} ----- 4 kV
- I_{RSM} ----- 150 mA
- $I_{F(AV)}$ ----- 350 mA
- V_F ----- 8.0 V max.
- t_{rr} ----- 0.15 μs max.
($I_F = I_{RP} = 100 \text{ mA}$, 90% Recovery Point)

Applications

- High Voltage Control Circuits
- Inverter for Microwave Oven

Package

Axial ($\square 7/\phi 1.2$)



Not to scale

UX-A5B

Absolute Maximum Ratings

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

Parameter	Symbol	Conditions	Rating	Unit	Remarks
Peak Repetitive Reverse Voltage	V_{RM}		4	kV	
Average Forward Current	$I_{F(AV)}$	$T_L \leq 110\text{ }^\circ\text{C}^{(1)}$	350	mA	
Surge Forward Current	I_{FSM}	Half cycle sine wave, positive side, 10 ms, 1 shot	15	A	
Surge Reverse Current	I_{RSM}	Single pulse, pulse width 50 μs	150	mA	
Junction Temperature	T_J		120	$^\circ\text{C}$	
Storage Temperature	T_{STG}		-40 to 130	$^\circ\text{C}$	

Electrical Characteristics

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

Parameter	Symbol	Conditions	Min.	Typ.	Max.	Unit
Forward Voltage Drop	V_F	$I_F = 350\text{ mA}$	—	6.0	8.0	V
Reverse Leakage Current	I_R	$V_R = V_{RM}$	—	—	10	μA
Reverse Breakdown Voltage	V_Z	$I_R = 100\text{ }\mu\text{A}$	4.3	5.4	—	kV
Reverse Recovery Time	t_{rr}	$I_F = I_{RP} = 100\text{ mA}$, $T_J = 25\text{ }^\circ\text{C}$, 90% recovery point	—	0.06	0.15	μs

⁽¹⁾ T_L is the temperature of a lead measured at a distance of up to 2 mm from the body of the product.

Rating and Characteristic Curves

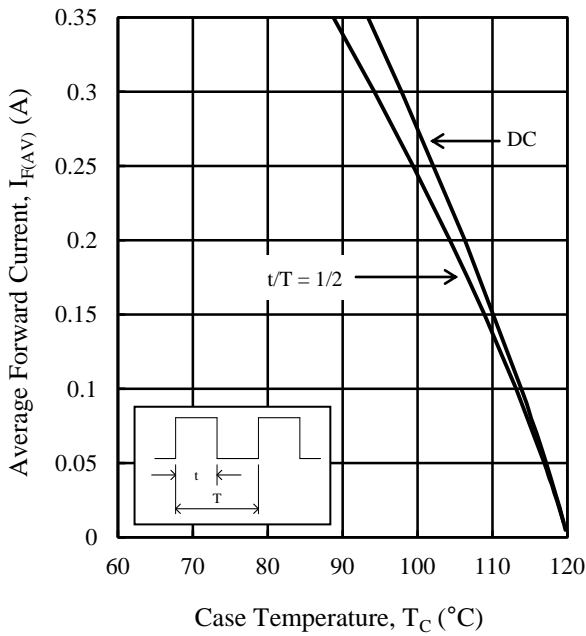


Figure 1. T_C vs. $I_{F(AV)}$ Typical Characteristics⁽²⁾
 ($T_J = 120\text{ °C}$, $V_R = 0\text{ V}$, $R_{th(J-C)} = 13.0\text{ °C/W}$)

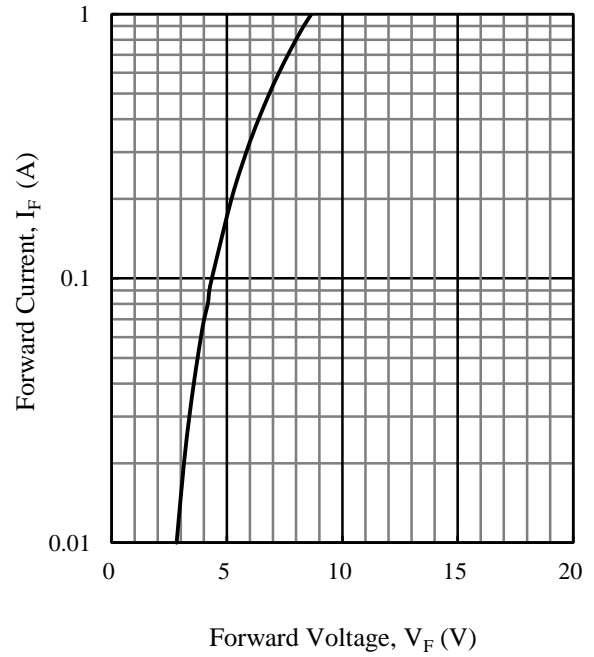


Figure 2. V_F vs. I_F Typical Characteristics ($T_J = 25\text{ °C}$)

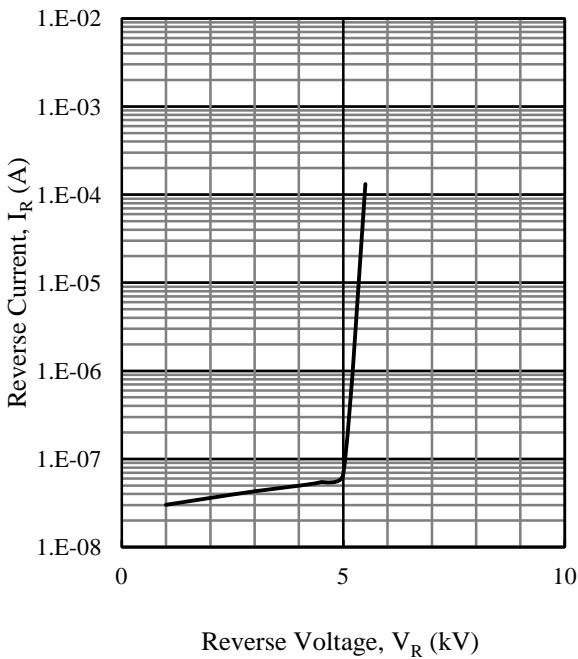


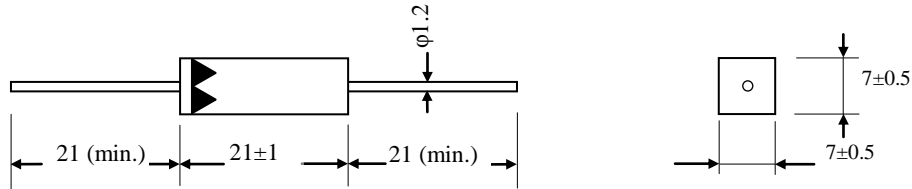
Figure 3. V_R vs. I_R Typical Characteristics ($T_J = 25\text{ °C}$)

⁽²⁾ Case temperature measured surface temperature of the seal center.

UX-A5B

Physical Dimensions

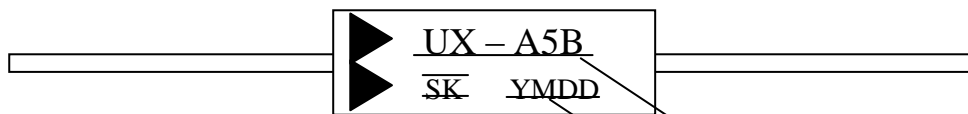
- Axial (□7/φ1.2)



NOTES:

- Dimensions in millimeters
- Bare leads: Pb-free (RoHS compliant)
- When soldering the products, be sure to minimize the working time, within the following limits:
 - Flow: 260 ± 5 °C / 10 ± 1 s, 2 times
 - Soldering iron: 380 ± 10 °C / 3.5 ± 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



Part Number

Lot Number:

Y is the last digit of the year of manufacture (0 to 9)
M is the month of the year (1 to 9, O, N, or D)
DD is the day of the month (01 to 31)

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