

**DESCRIPTION**

The UM7000 and UM7100 series offer moderately high power handling in combination with reasonably low levels of both series resistance and capacitance. The UM7200 series offers the lowest series resistance, but the highest capacitance of the group. The differences in specified

performance, for each of the series, results from different I-region thickness. The three series have broad applicability in many RF and microwave switch and attenuator circuits. Additionally, the UM7100 in leaded versions is usually the most cost-effective diode choice in high volume usage.

**KEY FEATURES**

- Voltage ratings to 1000V (UM7000)
- Average power dissipation to 10 W
- Series resistance as low as 0.25  $\Omega$
- Carrier lifetime greater than 2.5  $\mu$ s
- Non cavity design
- Thermally matched configuration
- Low capacitance at 0 V bias
- Low conductance at 0 V bias
- Compatible with automatic insertion equipment

**IMPORTANT:** For the most current data, consult MICROSEMI's website: <http://www.microsemi.com>

**ABSOLUTE MAXIMUM RATINGS AT 25° C  
(UNLESS OTHERWISE SPECIFIED)**

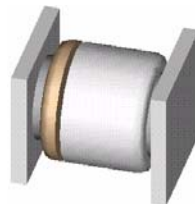
Package	Condition	PD	$\theta$
<b>A</b>	25 °C Pin Temperature	10 W	15 °C/W
<b>B &amp; E</b>	1/2 in. total length to 25 °C Contact Free Air	5.5 W 1.5 W	27.5 °C/W
<b>C</b>	25 °C Stud Temperature	10 W	15 °C/W
<b>D</b>	25 °C Stud Temperature	7.5 W	20 °C/W
<b>SM</b>	25 °C End Cap Temperature	8 W	17 °C/W
<b>All</b>	1 $\mu$ s pulse (Single)	UM7000 UM7100 UM7200	60 kW 35 kW 20 kW

**APPLICATIONS/BENEFITS**

- Isolated stud package available
- Surface mount package available

**VOLTAGE RATINGS**

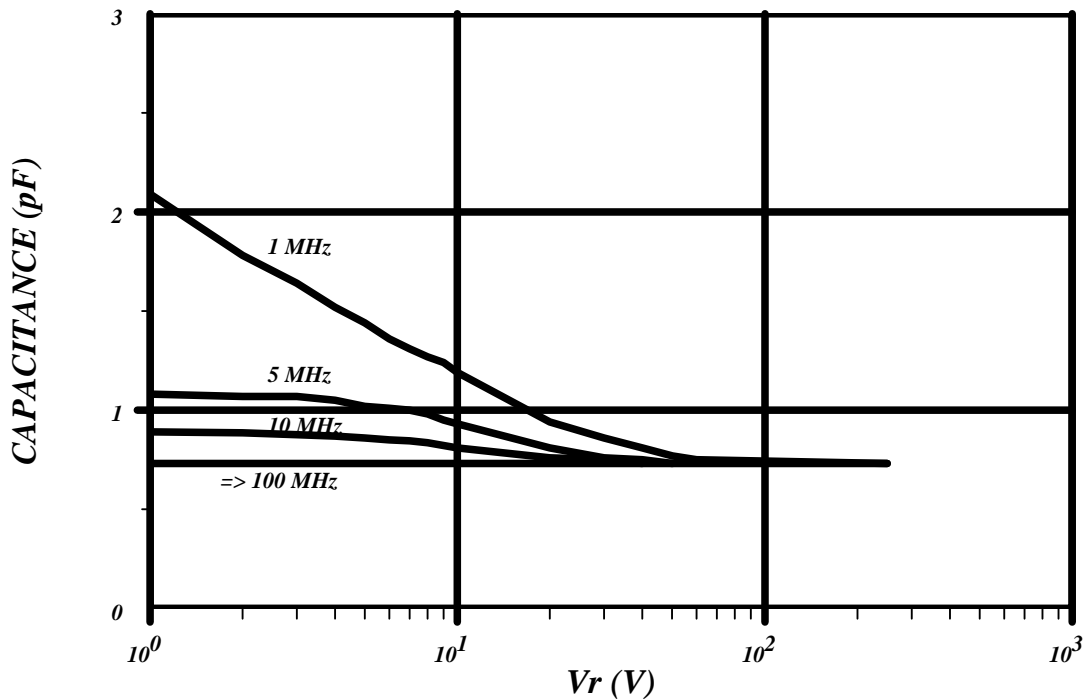
Reverse Voltage @ 10 $\mu$ A			
100	UM7001	UM7101	UM7201
200	UM7002	UM7102	UM7202
400	-	UM7104	UM7204
600	UM7006	-	-
800	-	UM7108	-
1000	UM7010	-	-


**Style "B"**

**Style "SM"**

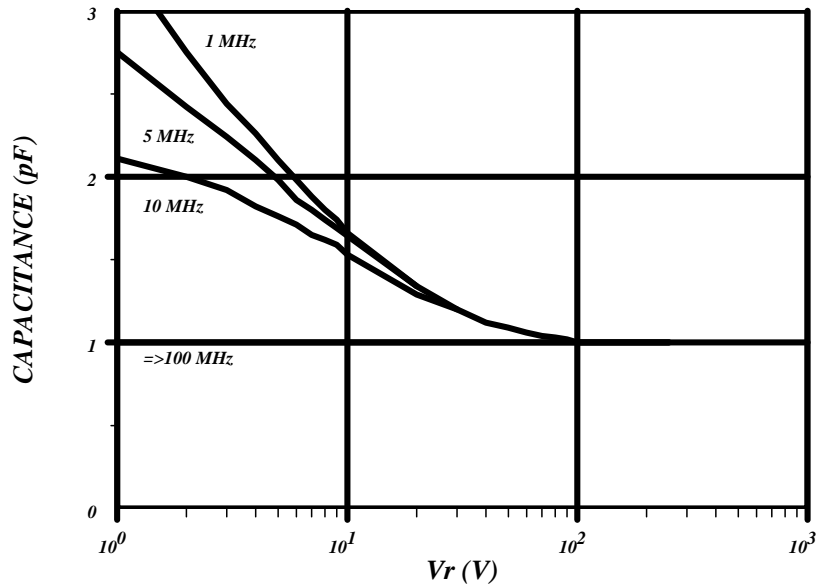
**ELECTRICAL PARAMETERS @ 25°C (unless otherwise specified)**

Parameter	Symbol	Conditions	UM7000	UM7100	UM7200	Units
Reverse Current (Max)	$I_R$	At rated voltage	10	10	10	$\mu A$
Series Resistance(Max)	$R_S$	$I_F = 100 \text{ mA}$ , $F = 100 \text{ MHz}$	1.0	0.6	0.25	Ohm
Capacitance (Max)	$C_T$	$V_R = 100 \text{ V}$ , $F = 1 \text{ MHz}$	0.9	1.2	2.2	pF
Parallel Resistance(Min)	$R_P$	$V_R = 100 \text{ V}$ , $F = 100 \text{ MHz}$	200k	150k	70k	Ohms
Carrier Lifetime(Min)	$\tau$	$I_F = 10 \text{ mA}$	2.5	2.0	1.5	us
I-Region Width (Min)	W	-	150	80	40	$\mu m$

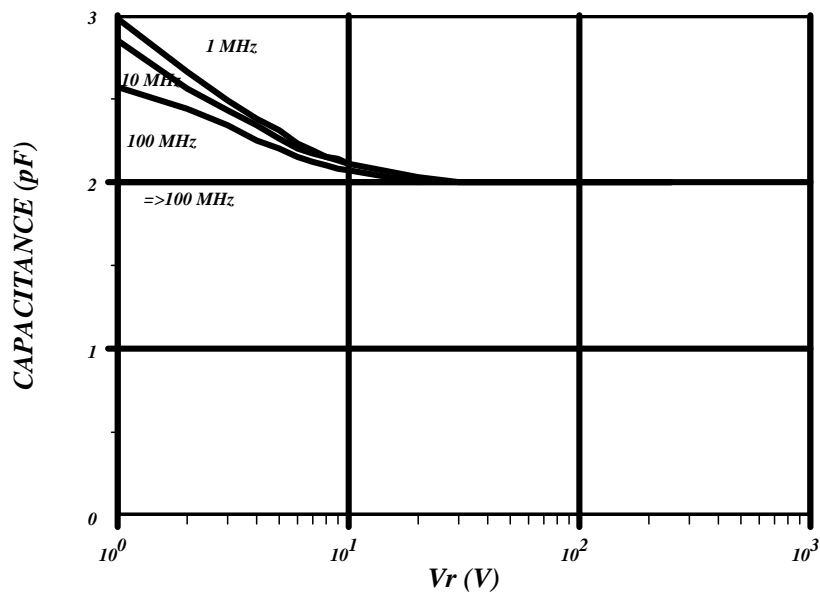
**UM7000  
TYPICAL**



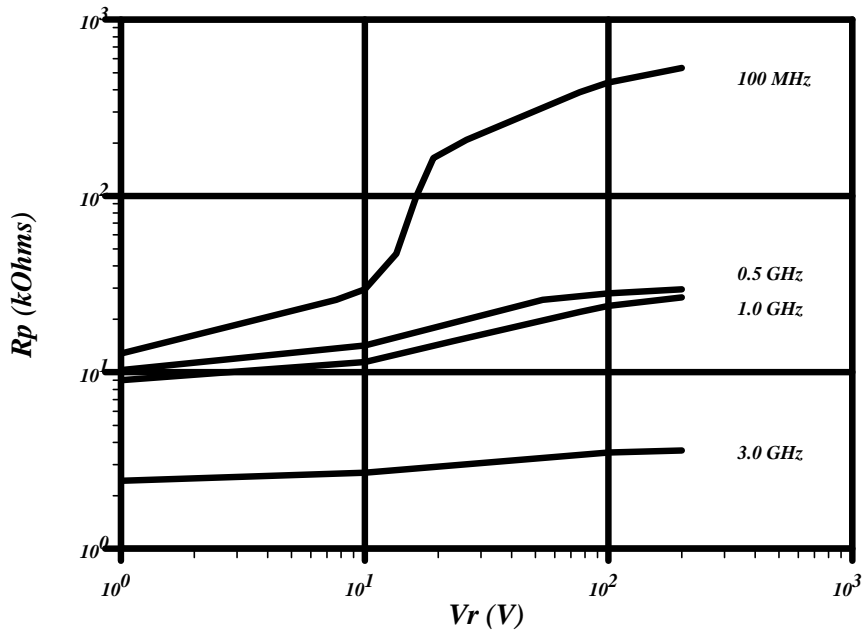
*UM7100  
TYPICAL*



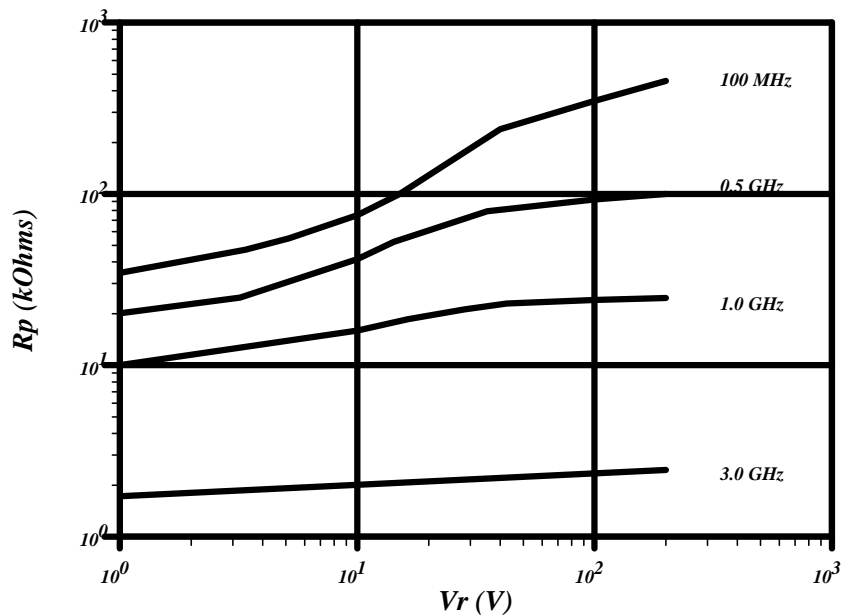
*UM7200  
TYPICAL*

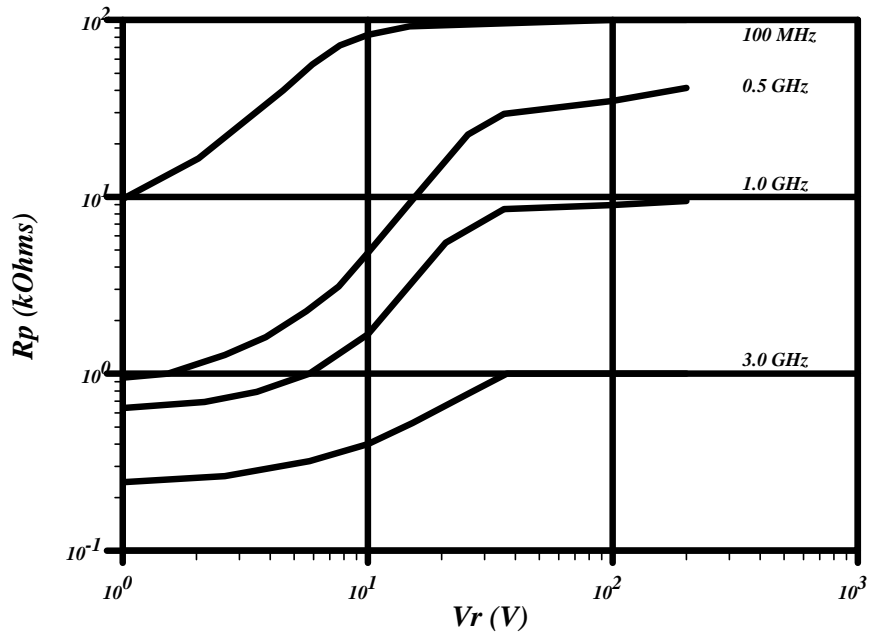
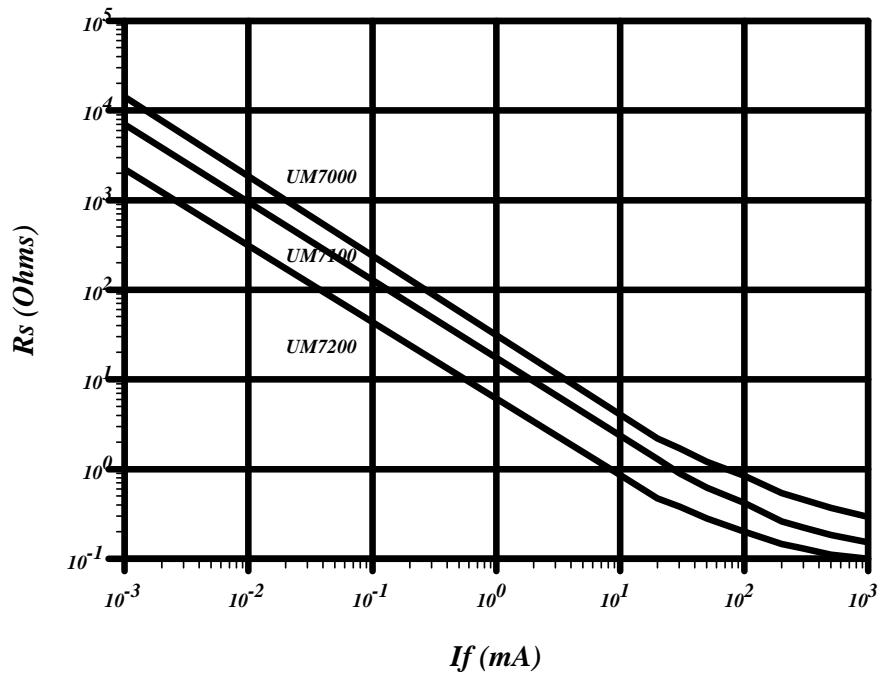


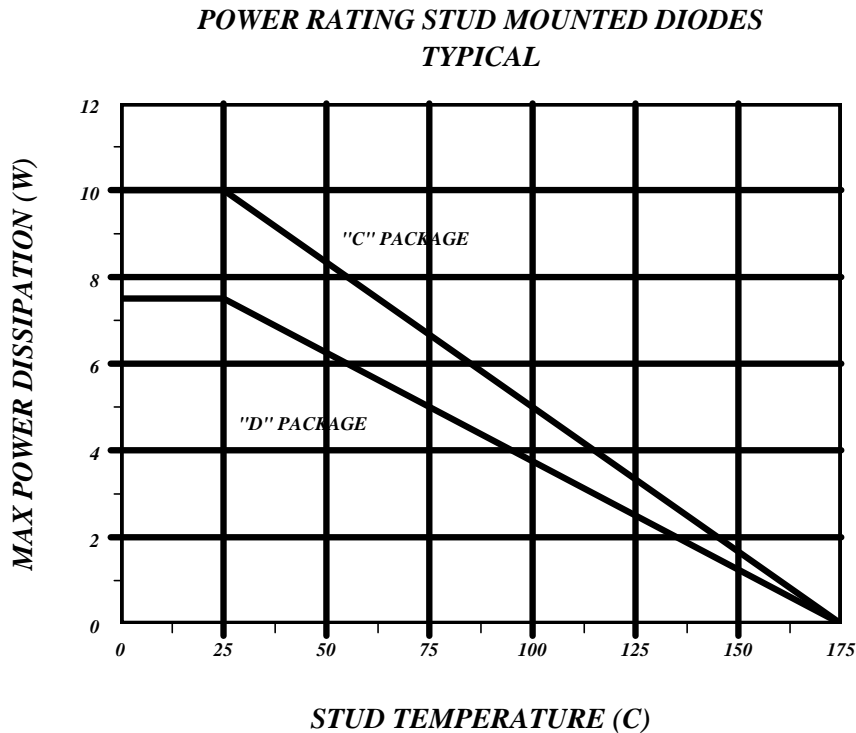
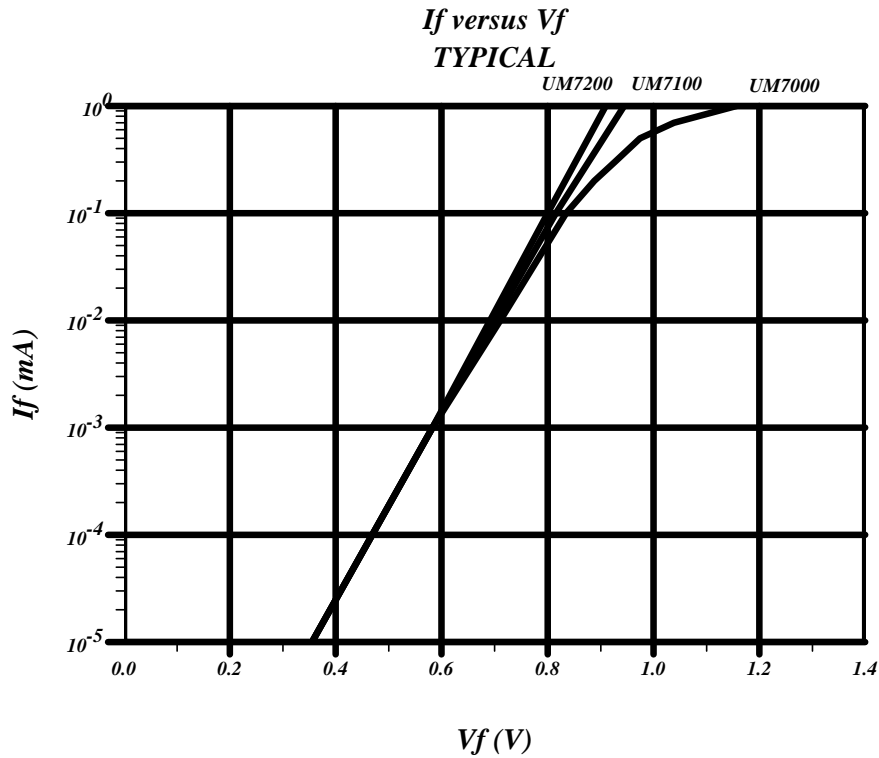
*UM7000  
TYPICAL*

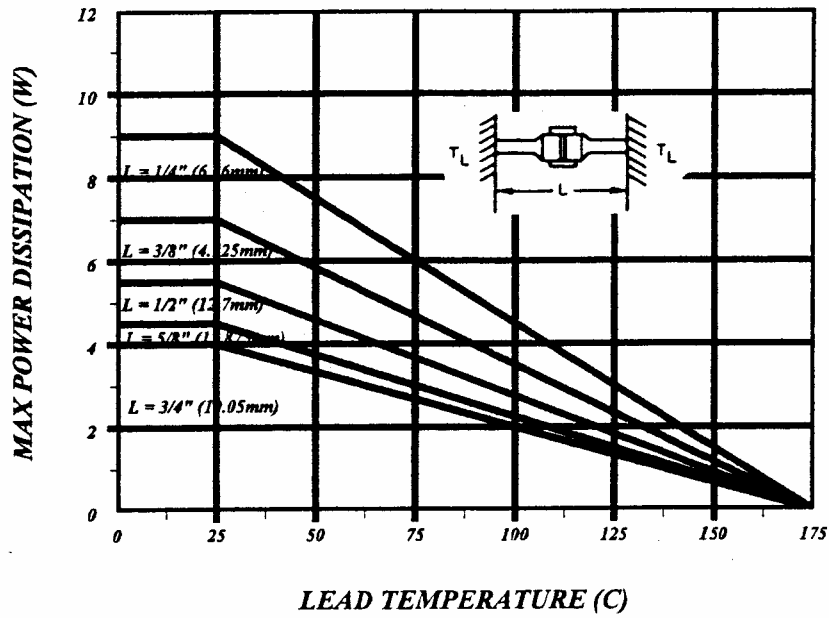
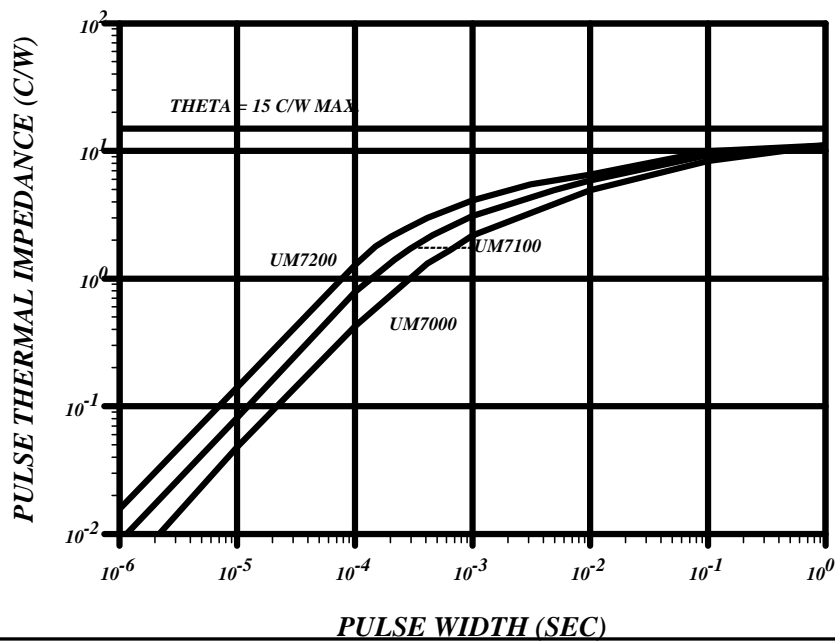


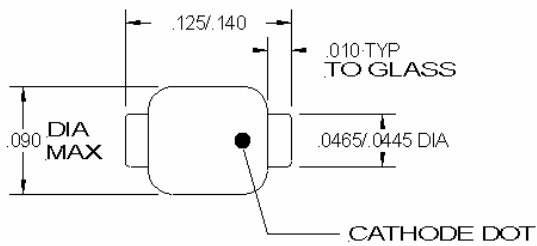
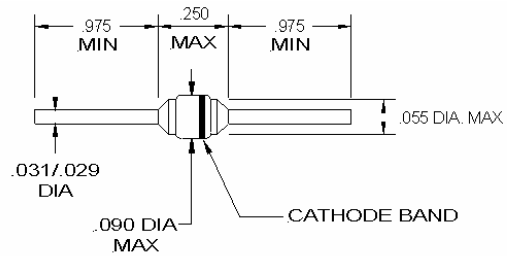
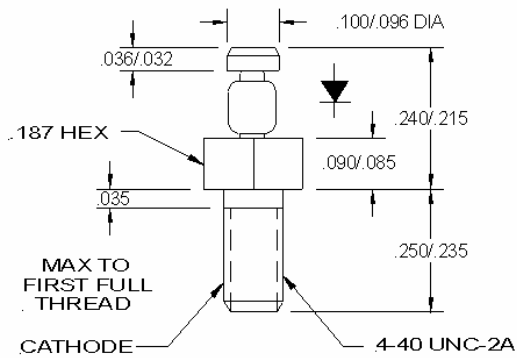
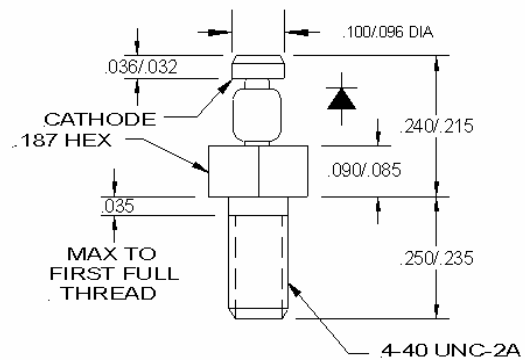
*UM7100  
TYPICAL*



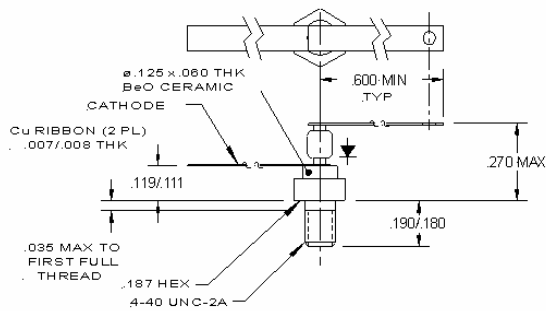
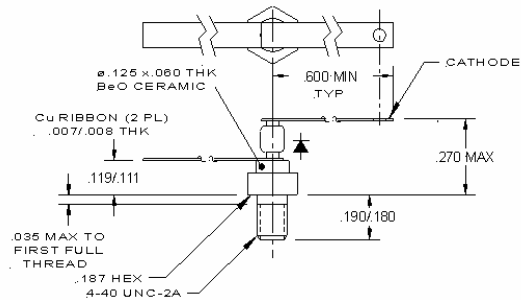
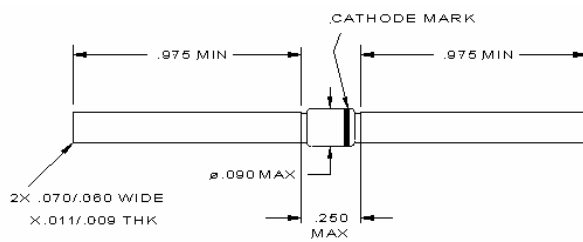
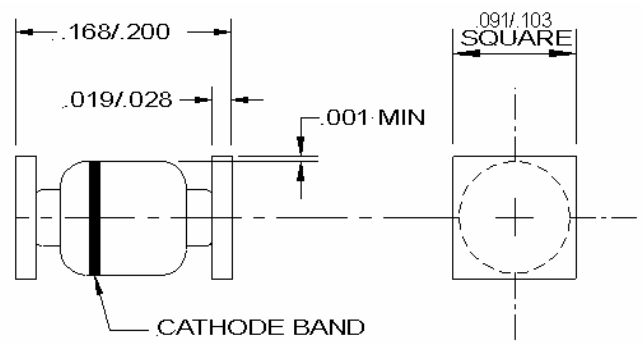
**UM7200  
TYPICAL**

 **$R_s$  versus  $I_f$   
TYPICAL**


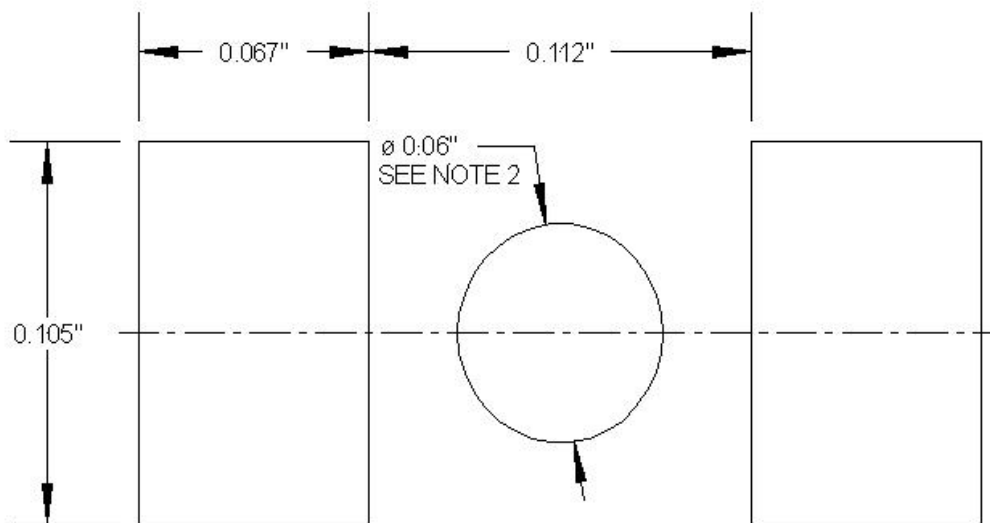


**POWER RATING AXIAL LEADED DIODES  
TYPICAL**

**PULSE THERMAL IMPEDANCE VERSUS WIDTH  
TYPICAL**


**STYLE "A"**

**STYLE "B"**

**STYLE "C"**

**STYLE "CR"**




**STYLE "D"**

**STYLE "DR"**

**STYLE "E"**

**STYLE "SM"**


**UM7000/UM7100/UM7200 STYLE "SM" FOOTPRINT****A SIZE  
(STANDARD SMALL  
SQUARE END CAP OUTLINE)****NOTES:**

1. These dimensions will match the terminals and provide for additional solder fillets at the outboard ends at least as wide as the terminals themselves, assuming accuracy of placement within 0.005"
2. If the mounting method chosen requires use of an adhesive separate from the solder compound, a round (or square) spot of cement as shown should be centrally located.



**UM7000 / UM7100/UM7200**

**HIGH POWER PIN DIODES**

**NOTES:**

**WWW.MICROSEMI.COM**

**NOTES**