UM6000 / UM6200/UM6600

POWER PIN DIODES

DESCRIPTION

These series of PIN diodes are designed for applications requiring small package size and moderate average power handling capability. The low capacitance of the UM6000 and UM6600 allows them to be used as series switching elements to 1 GHz. The low resistance of the UM6200 is useful in applications where forward bias current must be minimized.

Because of its thick I-region width and long lifetime the UM6000 and UM6600 have been used in distortion sensitive and high peak power applications, including receiver protectors, TACN, and IFF equipment. Their low capacitance allows them to be useful as attenuator diodes at frequencies greater than 1 GHz. The UM6200 has been used successfully in switches in which low insertion loss at low bias current is required.

The "A" style package for this series is the smallest Microsemi PIN diode package. It has been used successfully in many microwave applications using coaxial, microstrip, and stripline techniques at frequencies beyond X-Band. The "B" and "E" style leaded packages offer the highest available power dissipation for a package this small. They have been used extensively as series switch elements in microstrip circuits. The "C" style package duplicates the physical outline available in conventional ceramic-metal packages but incorporates the many reliability advantages of the Microsemi construction.

KEY FEATURES

- Voltage ratings to 1000V
- Average power dissipation to 6 W
- Series resistance as low as 0.4 Ω
- Carrier lifetime greater than 1.0 µs
- 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 25º C (UNLESS OTHERWISE SPECIFIED)

Package	Condition	UM6000/UM6600		UM6200	
		PD	θ	PD	θ
A & C	25 °C Pin Temperature	6 W	25 °C/W	4 W	37.5 °C/W
B & E	½ in. total length to 25 °C Contact Free Air	2.5 W 0.5 W	60 °C/W	2.0 W 0.5 W	75 °C/W
SM	25 °C End Cap Temperature	4.5 W	27.5°C/W	3.0 W	42.5 °C/W
All	1 us pulse (Single)	UM6000 25 kW UM6600 13 kW		10 kW	

APPLICATIONS/BENEFITS

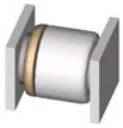
- Isolated stud package available
- Surface mount package available
- RoHS compliant packaging available: use UMX6001B, etc.

VOLTAGE RATINGS

Reverse Voltage @ 10 uA			
100	UM6001	UM6201	UM6601
200	UM6002	UM6202	UM6602
400	-	UM6204	-
800	UM6006	-	UM6606
1000	UM6010	-	UM6610

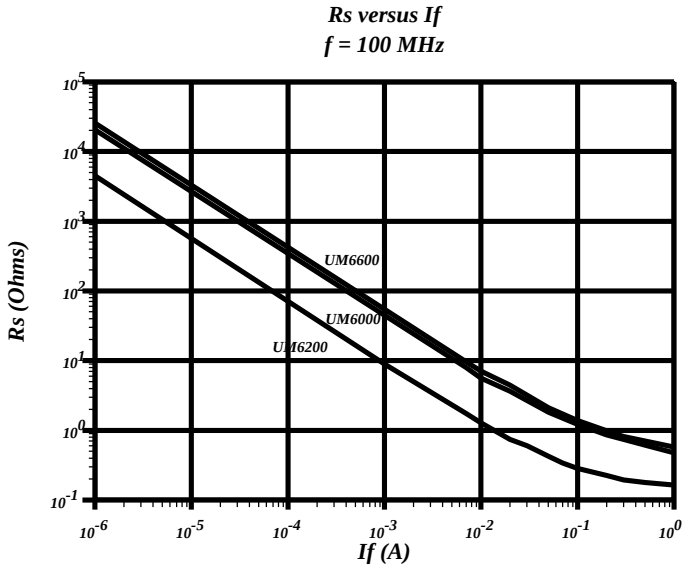
ELECTRICAL PARAMETERS @ 25°C (unless otherwise specified)						
Parameter	**Symbol**	**Conditions**	**UM6600**	**UM6000**	**UM6200**	**Units**
Reverse Current (Max)	I_R	At rated voltage	10	10	10	uA
Series Resistance(Max)	R_S	If = 100 mA, F= 100 MHz	2.5	1.7	0.4	Ohms
Capacitance (Max)	C_T	V_R = 100 V, F = 1 MH_Z	0.4	0.5	1.1	pF
Parallel Resistance(Min)	Rp	V_R = 100 V, F = 100 MHz	300k	300k	350k	Ohms
Carrier Lifetime(Min)	τ	I_F = 10 mA	1.0	1.0	0.6	us
I-Region Width (Min)	W	-	150	150	40	um

Style "B"



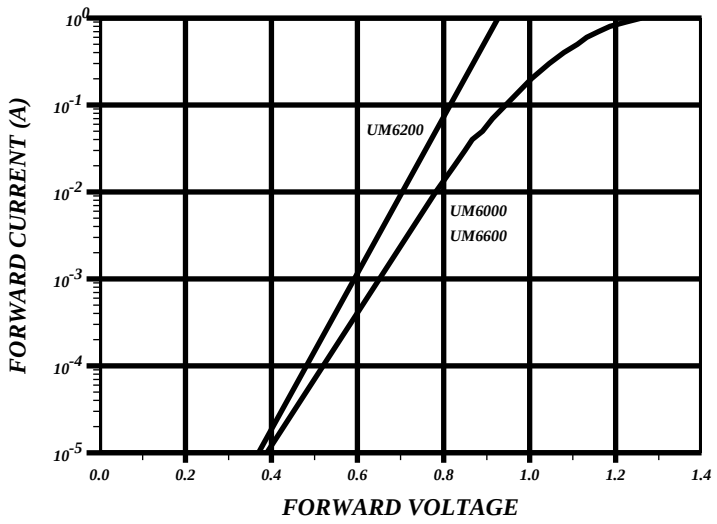
Style "SM"

UM6000/UM6200/UM6600



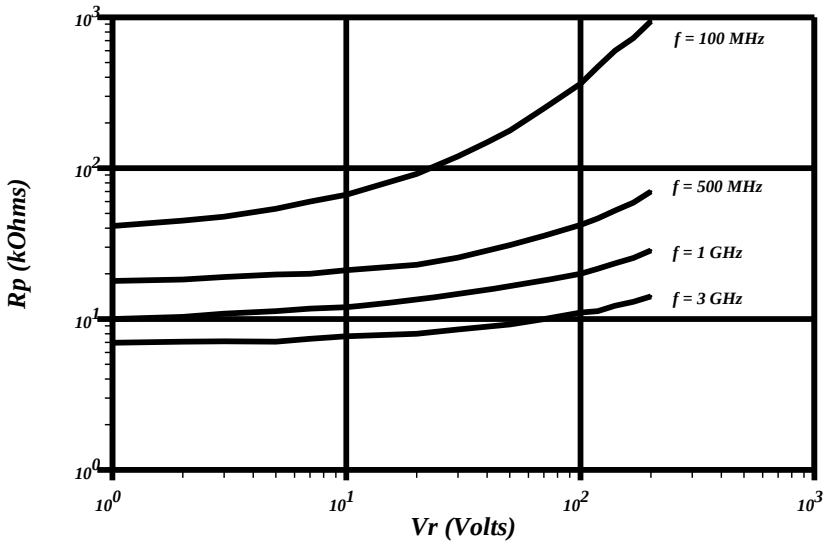
UM6000/UM6200/UM6600

FORWARD VOLTAGE versus CURRENT



UM6000/UM6600

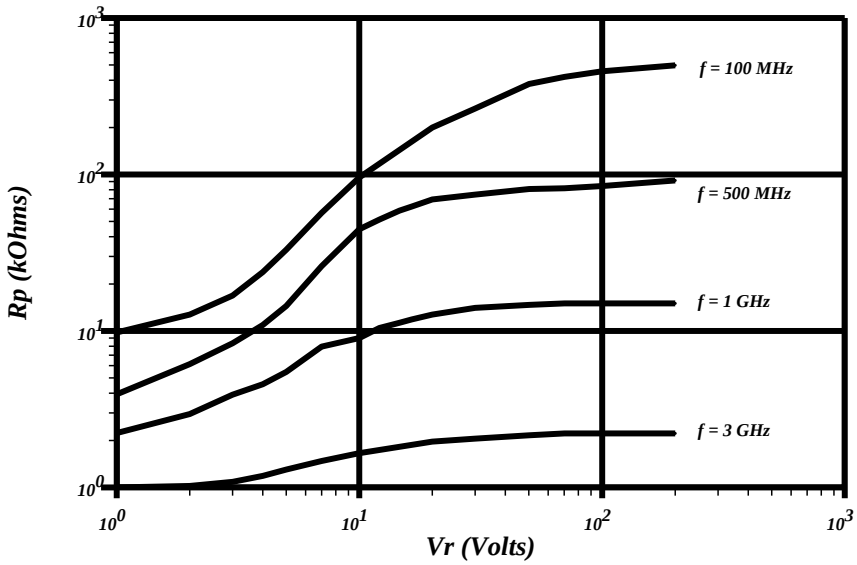
Rp versus Vr



ELECTRICALS

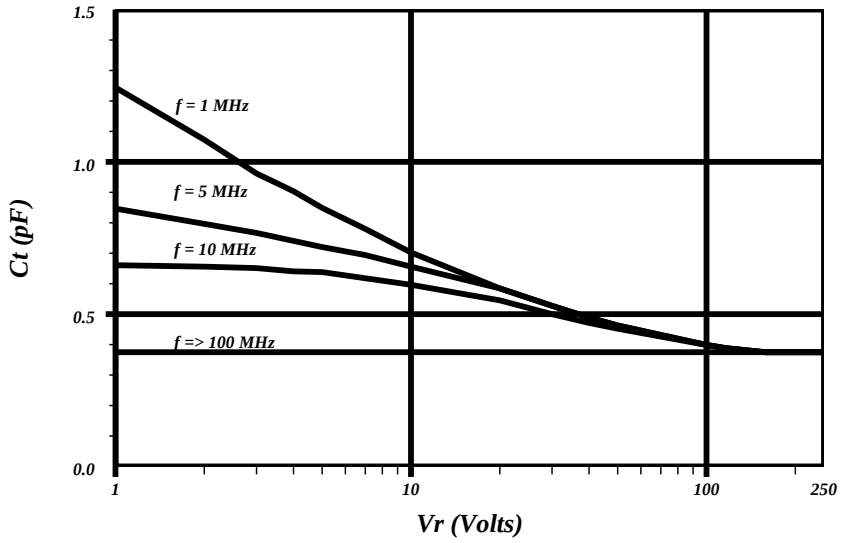
UM6200

Rp versus Vr



UM6000

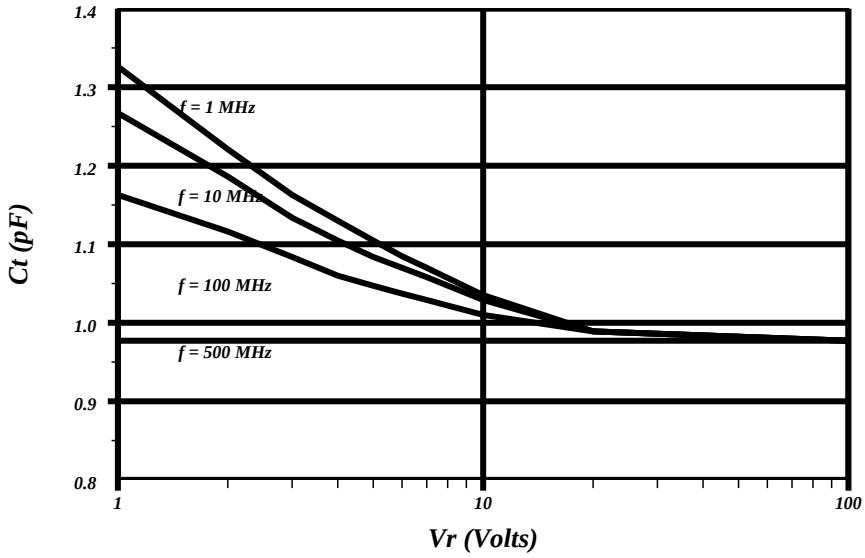
Ct versus Vr



ELECTRICALS

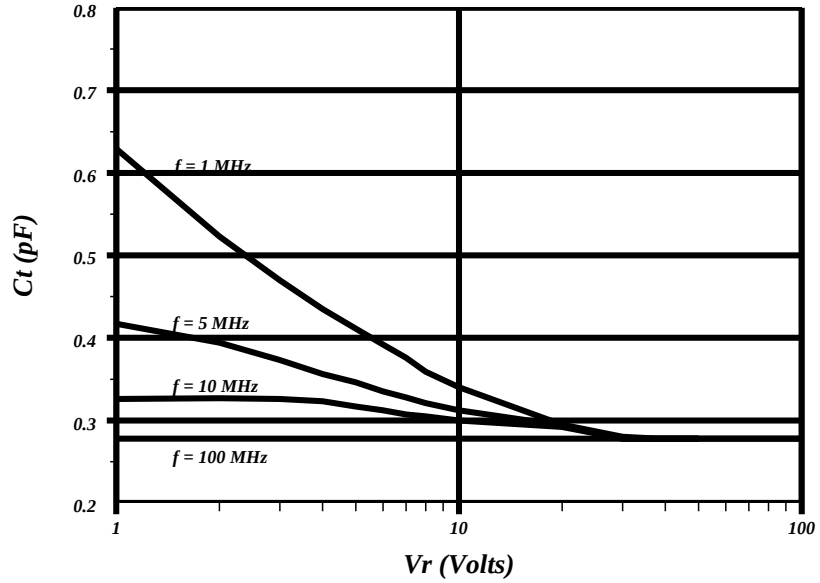
UM6200

Ct versus Vr



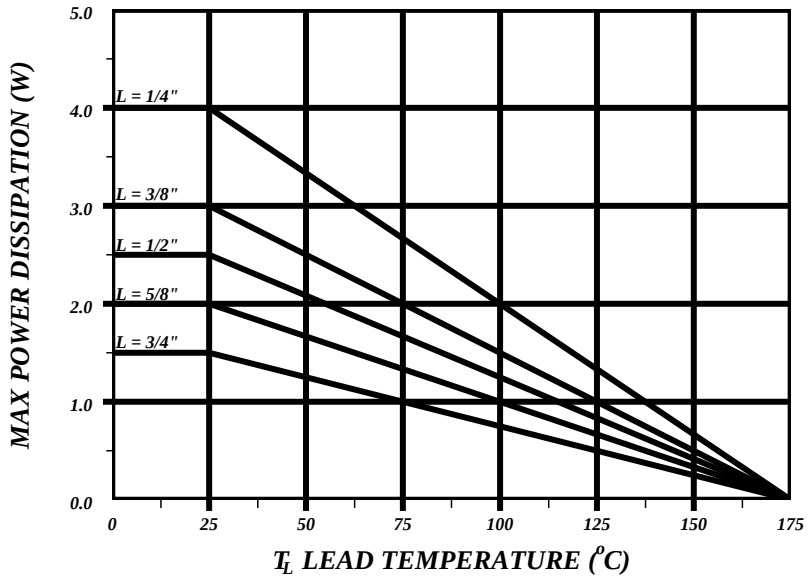
UM6600

Ct versus Vr



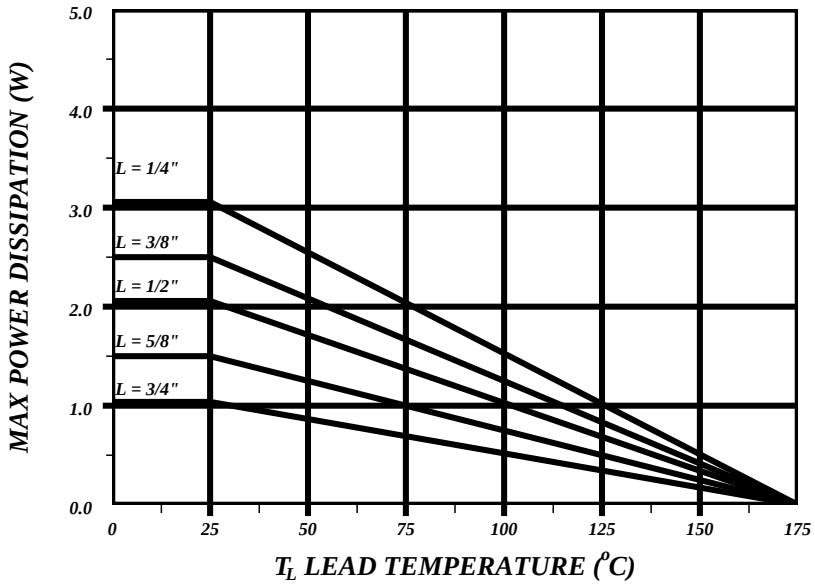
UM6000/UM6200

MAX POWER DISSIPATION versus LEAD TEMPERATURE



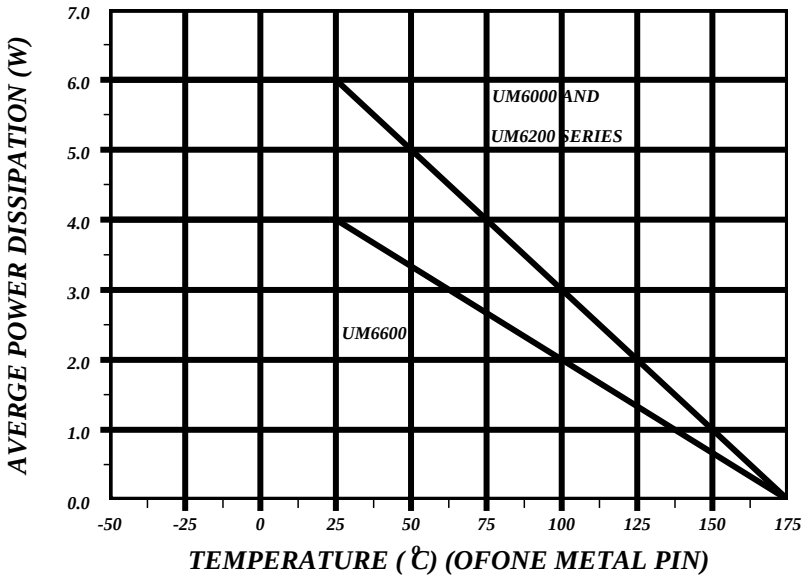
UM6600

MAX POWER DISSIPATION versus LEAD TEMPERATURE



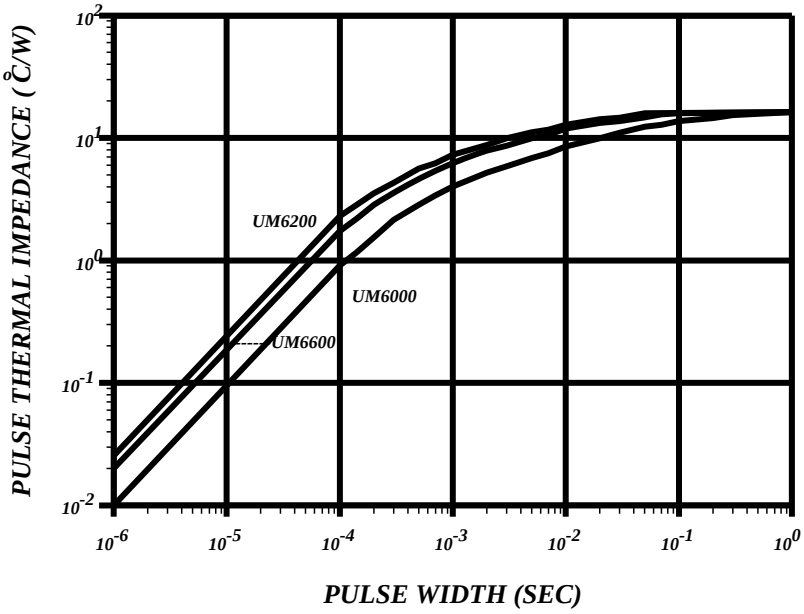
UM6000/UM6200/UM6600

AVERGE POWER DISSIPATION versus TEMPERATURE



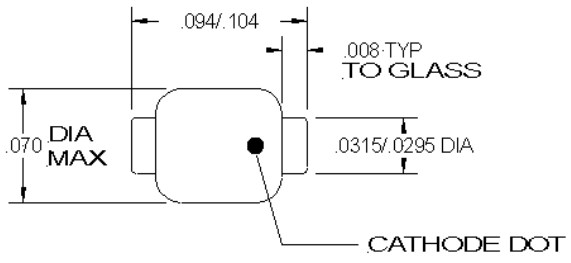
UM6000/UM6200/UM6600

PULSE THERMAL IMPEDANCE VS PULSE WIDTH

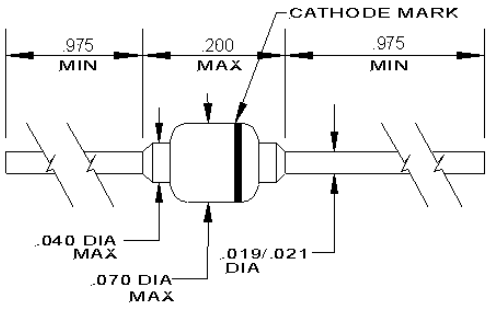


ELECTRICALS

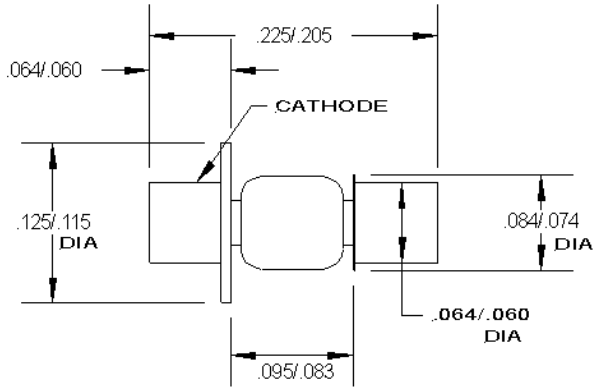
STYLE "A"



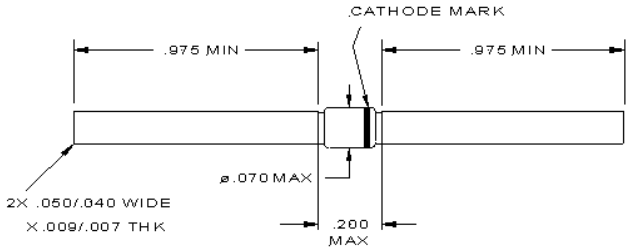
STYLE "B"



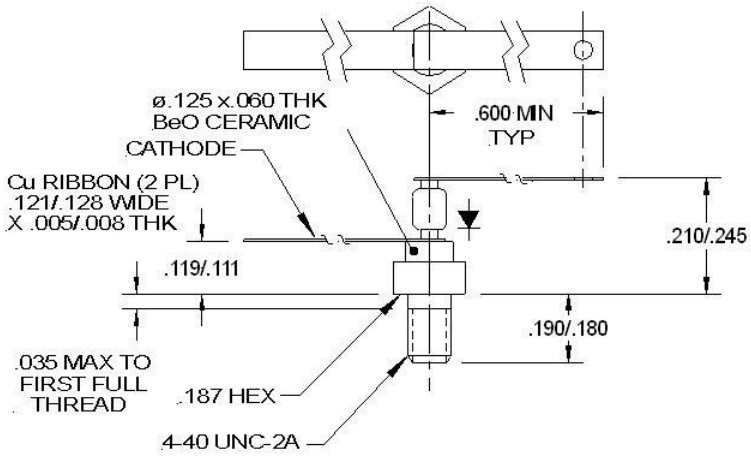
STYLE "C"



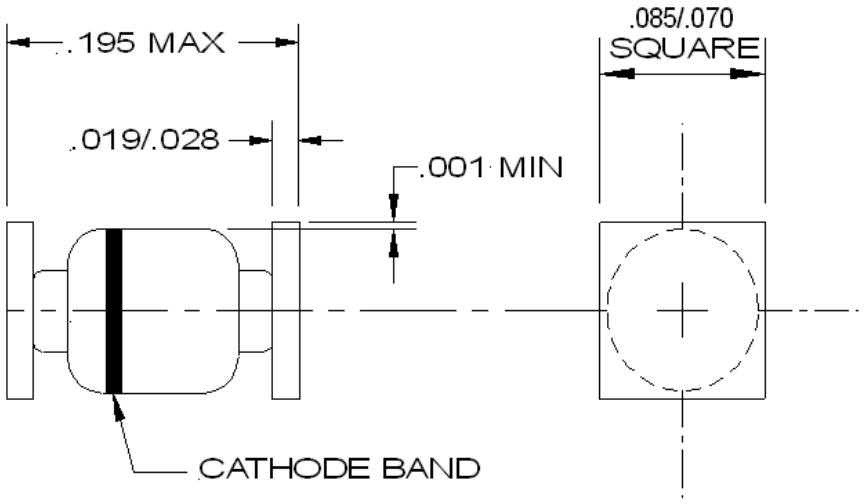
STYLE "E"



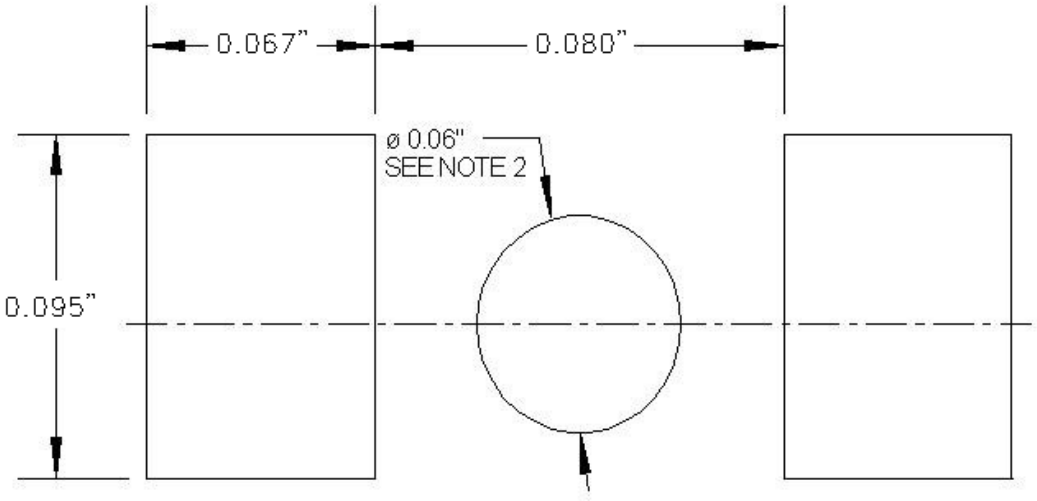
STYLE "D"



UM6000/UM6200/UM6600



UM6000/UM6200/UM6600 STYLE "SM" FOOTPRINT



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.

NOTES:

NOTES

X-ON Electronics

Largest Supplier of Electrical and Electronic Components

Click to view similar products for PIN Diodes ***category:***

Click to view products by Microchip ***manufacturer:***

Other Similar products are found below :

MA45471 APD1520-000 APD2220-000 BAR 63-02L E6327 BAR 64-02EL E6327 BAR 90-02ELS E6327 APD0810-000 MA4L032-186 MA4P606-258 MA4P7435NM-1091T MA4PK2000 MA4PK2001 MA4PK2002 MA4PK2003 MA4PK2004 MADP-030025-13140P BAR 65-02V H6327 MA4PBL027 MA4P404-30 MA4AGFCP910 MA4P7101F-1072T MA4L022-30 MA47047-54 CLA4610-000 UM9301SM 5082-3077 MADP-000502-12700P MA4P7493-134 MA4L011-1088 SMP1321-000 UM4010SM UM7006B MADP-000015-000030 MPP4203-206 MPS2R10-606 MPP4205-206 GC40605-15 MA4L021-1056 MSWSE-050-17 MADP-007455-0287DT MADP-007448-1146DT MA4P929-401 MA4P7455-287T LM200802-M-A-300-T MADP-010633-13920T MADP-007436-0287DT BAR6503WE6327HTSA1 MADP-007433-0287HT MPL4702-406/TR MPL4703-406/TR