HUM3002/3003/3004

High Voltage, High Power Pin Diode

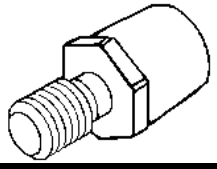
PRODUCT PREVIEW/PRELIMINARY

DESCRIPTION

These Microsemi PIN diodes are perfect for high power switching applications where high isolation, low loss, low distortion characteristics, and high power handling capability are critical. These PIN diodes utilize Microsemi's SOGO passivation process for superior stable high voltage operation. The package is a modified DO-4 structure for ease of mount down with excellent thermal properties. No thin internal straps are used for electrical connections. A surge current of 150 amperes at half sine 8.3 ms is easily handled.

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

DO-4 PIN DIODE



KEY FEATURES

- Non-magnetic Package For MRI Application.
- High Power, High Voltage Package (4 kV -40 kW)
- Stable High Voltage Chip Passivation.
- High Current Rating.
- High Surge Current Rating.
- Low Rs, Low Loss, Low Distortion Design.

APPLICATIONS/BENEFITS

- MRI Applications.
- High Power Antenna Switching.
- Band Switching.
- Industrial Heating.

Maximum Ratings @ 25°C (UNLESS OTHERWISE SPECIFIED)

Parameter	Symbol	TYPE			
		HUM3002	HUM3003	HUM3004	Unit
Reverse Voltage I_R = 10μA	V_R	2,000	3,000	4,000	V
Average Power Dissipation @ Stud =50°C	I_O	50	50	50	W
RF Power Handling Capability(CW) @Zo = 50 OHms Rs = 0.1 OHM @ Stud =50°C	P_{RF}	40	40	40	kW
Non-Repetitive Sinusoidal Surge Current (8.3 ms)	I_{FSM}	150	150	150	A
Storage Temperature Range	T_{STG}	-55°C to +150°C	-55°C to +150°C	-55°C to +150°C	°C
Operating Temperature Range	T_{OP}	-55°C to +125	-55°C to +125	-55°C to +125	°C
Thermal resistance Junction-to Case	$R_{\theta JC}$	1.5	1.5	1.5	°C/W

ELECTRICAL CHARACTERISTICS

Parameter	Symbol	Conditions	Min	Typ.	Max	Units
Diode Resistance	R_S	F= 10 MHz, If = 250 mA		0.1	0.2	Ω
Capacitance C_T	C_T	F= 1 MHz, 100 V		4.3	5.0	pF
Reverse Current	I_R	V_R @ Rated Voltage			10	μA
Carrier Lifetime	τ	If = 10 mA / 100 V	20	30		μs
Parallel Resistance	R_P	F= 1 MHz, 100 V	5			kΩ
Forward Voltage	Vf	If = 0.5 A		0.75		V

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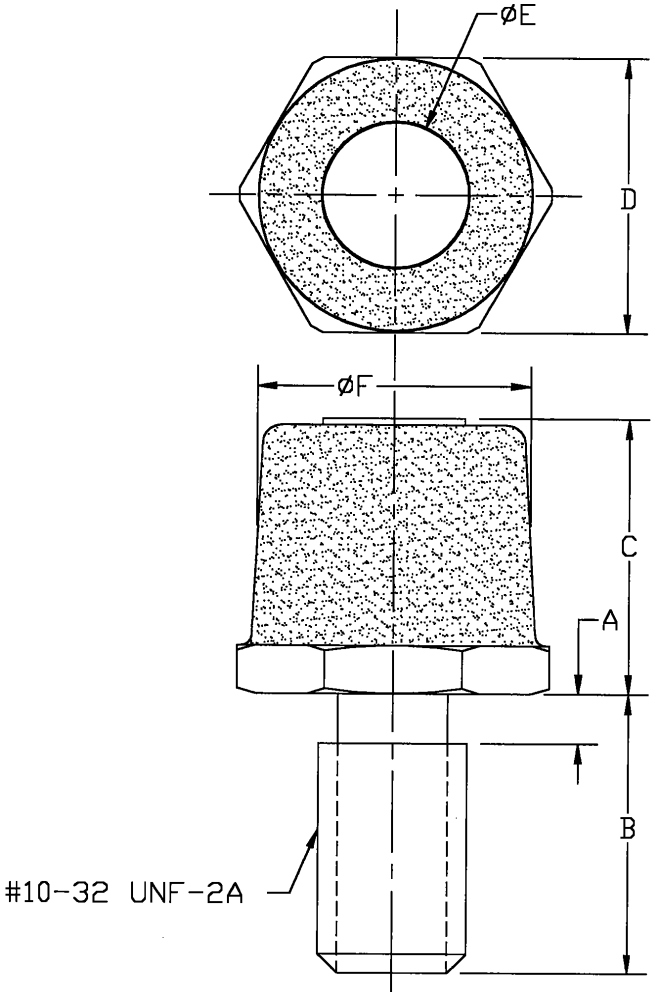
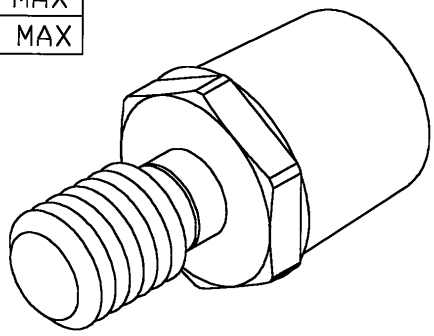


	INCH	MILLIMETER
A	.078 MAX	1.98 MAX
B	.437 ±.015	9.5 ±.38
C	.430 MAX	10.92 MAX
D	.430 ±.010	10.92 ±.25
E	ø.230 MAX	ø5.84 MAX
F	ø.424 MAX	ø10.77 MAX



NOTES:

1. POLARITY IS CATHODE-TO-STUD, FOR REVERSE POLARITY (ANODE-TO-STUD), ADD SUFFIX "R" TO PART # HUM3002R
2. ALL METAL SURFACES ARE TIN PLATED.
3. MAXIMUM UNLUBRICATED STUD TORQUE, 10 INCH-POUND.