



HUM3002/3003/3004

High Voltage, High Power Pin Diode

PRODUCT PREVIEW/PRELIMINARY

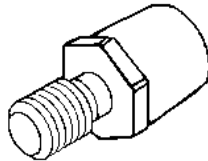
**DESCRIPTION**

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.

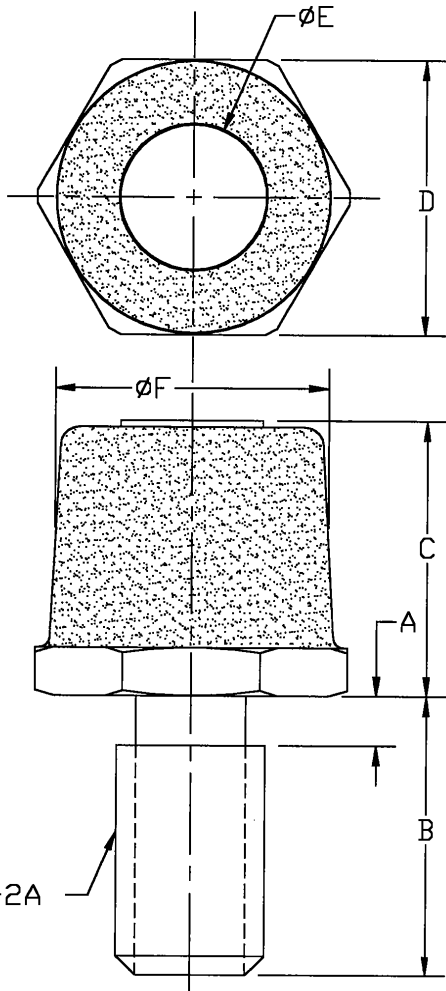
**Maximum Ratings @ 25°C**

(UNLESS OTHERWISE SPECIFIED)

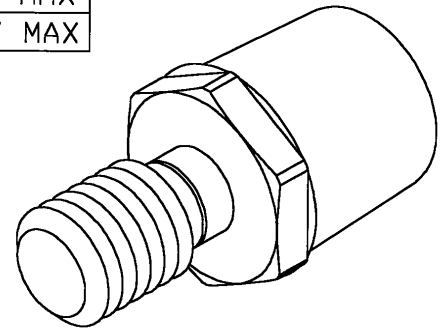
Parameter	Symbol	TYPE			Unit
		HUM3002	HUM3003	HUM3004	
Reverse Voltage $I_R = 10\mu A$	$V_R$	2,000	3,000	4,000	V
Average Power Dissipation @ Stud =50°C	$I_O$	50	50	50	W
RF Power Handling Capability(CW) @ $Z_o = 50 \text{ OHms}$ $R_s = 0.1 \text{ OHM}$ @ Stud =50°C	$P_{RF}$	40	40	40	kW
Non-Repetitive 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, $I_f = 250 \text{ mA}$		0.1	0.2	$\Omega$
Capacitance $C_T$	$C_T$	F= 1 MHz, 100 V		4.3	5.0	pF
Reverse Current	$I_R$	$V_R$ @ Rated Voltage			10	$\mu A$
Carrier Lifetime	$\tau$	$I_f = 10 \text{ mA} / 100 \text{ V}$	20	30		$\mu s$
Parallel Resistance	$R_P$	F= 1 MHz, 100 V	5			k $\Omega$
Forward Voltage	$V_f$	$I_f = 0.5 \text{ A}$		0.75		V



	INCH	MILLIMETER
A	.078 MAX	1.98 MAX
B	.437 $\pm$ .015	9.5 $\pm$ .38
C	.430 MAX	10.92 MAX
D	.430 $\pm$ .010	10.92 $\pm$ .25
E	$\phi$ .230 MAX	$\phi$ 5.84 MAX
F	$\phi$ .424 MAX	$\phi$ 10.77 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.

#10-32 UNF-2A