

**DESCRIPTION**

With high isolation, low loss, and low distortion characteristics, this Microsemi Power PIN diode is perfect for the high power switching applications where size and power handling capability are critical.

Its advantages also include the low forward bias resistance and high zero bias impedance that are essential for low loss, high isolation and wide bandwidth performance.

Hermetically sealed, SOGO passivated PIN chips with full-faced metallurgical bonds on both sides are utilized to achieve high reliability and high surge capability.

**KEY FEATURES**

- High Power Stud Mount Package.
- High Zero Bias Impedance
- Very Low Inductance and Capacitance.
- No Internal Lead Straps.
- Small Mechanical Outline.
- RoHS compliant packaging Available<sup>1</sup>

**IMPORTANT:**

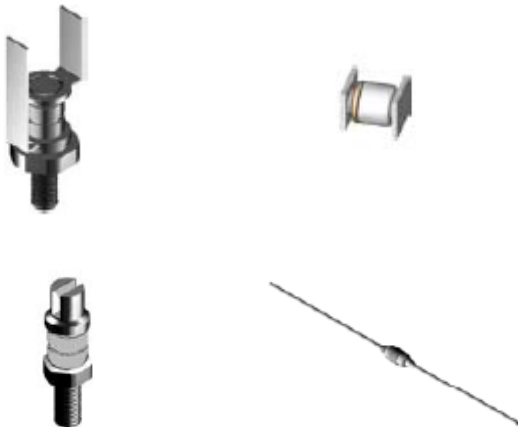
For the most current data, consult our website: [www.MICROSEMI.com](http://www.MICROSEMI.com)

**VOLTAGE RATINGS**
**@ 25°C (unless otherwise specified)**

| Part Number | Reverse Voltage @ 10uA (V) |
|-------------|----------------------------|
| HUM2001     | 100                        |
| HUM2005     | 500                        |
| HUM2010     | 1000                       |
| HUM2015     | 1500                       |
| HUM2020     | 2000                       |

**APPLICATIONS/BENEFITS**

- MRI Applications.
- High Power Antenna Switching.



<sup>1</sup> The HUM2000 series of products can be supplied with a RoHS compliant finish. Order HUMX2001 – HUMX2020. Consult factory for details.

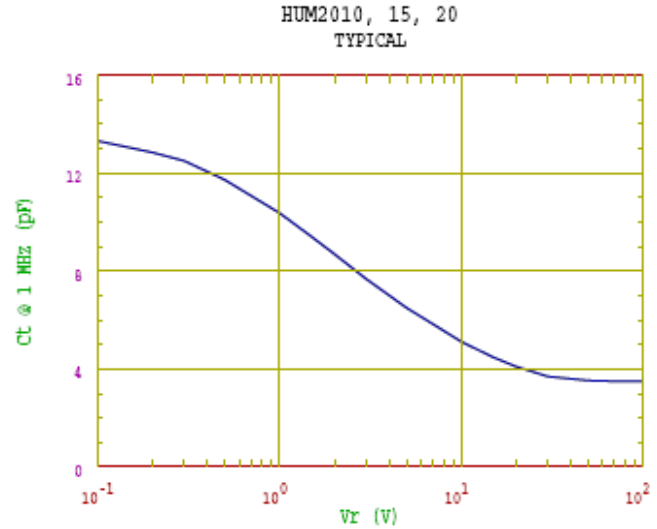
**▶ ABSOLUTE MAXIMUM RATINGS AT 25° C  
(UNLESS OTHERWISE SPECIFIED)**

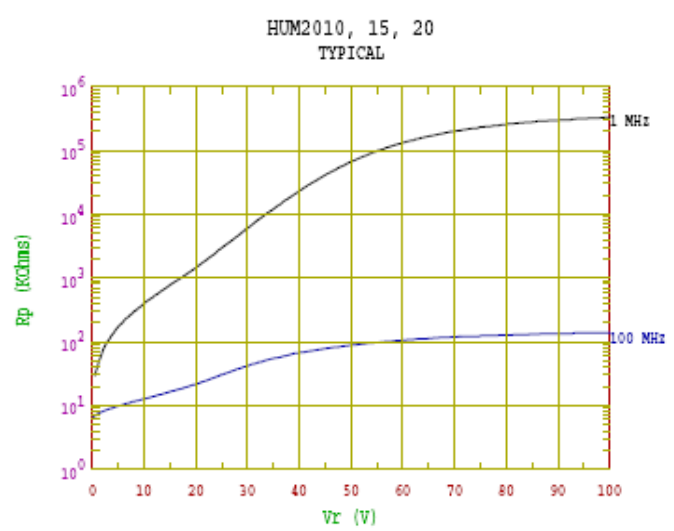
| Parameter  | Symbol          | Limits     | Units |
|--|-----------------|------------|-------|
| Average Power Dissipation                            | $P_D$           | 100        | W     |
| Non-Repetitive Sinusoidal Surge Current (8.3 ms)     | $I$             | 13         | A     |
| Storage Temperature Range                            | $T_{STG}$       | -65 – 175  | °C    |
| Operating Temperature Range                          | $T_{OP}$        | - 55 – 150 | °C    |
| Thermal resistance Junction-to Case<br>“C” Stud Only | $R_{\theta JC}$ | 7.5        | °C/W  |

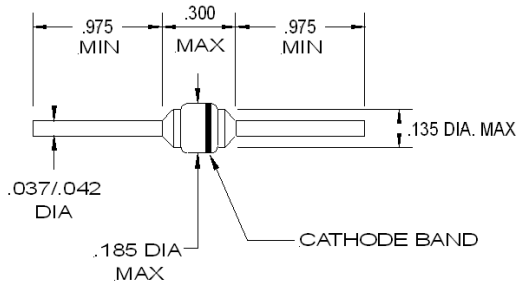
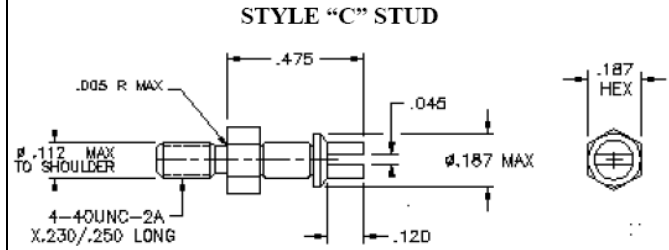
**▶ ELECTRICAL PARAMETERS @ 25°C (unless otherwise specified)**

| Parameter           | Symbol | Conditions                                | MIN. | TYPICAL | MAX. | Units         |
|---------------------|--------|---|------|---------|------|---------------|
| Total Capacitance   | $C_T$  | $V_R = 100V, F = 1 \text{ MHz}$           |      | 3.4     | 4.0  | pF            |
| Series Resistance   | $R_S$  | $I_F = 500 \text{ mA}, F = 4 \text{ MHz}$ |      | 0.1     | 0.2  | Ohms          |
| Carrier Lifetime    | $T_L$  | $I_F = 10 \text{ mA}/100 \text{ V}$       | 10   | 23      |      | $\mu\text{s}$ |
| Reverse Current     | $I_R$  | $V_R = \text{Voltage rating}$             |      |         | 10   | $\mu\text{A}$ |
| Parallel Resistance | $R_P$  | $f = 10\text{MHz}, I_F = 100\text{V}$     | 50   | 60      |      | kOhms         |
| Forward Voltage     | $V_F$  | $I_F = 500\text{mA}$                      |      | 0.85    | 1.0  | V             |

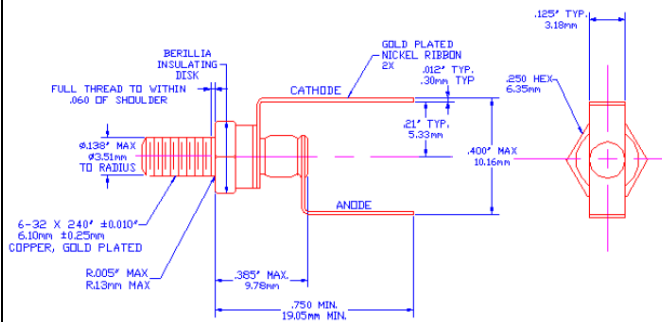
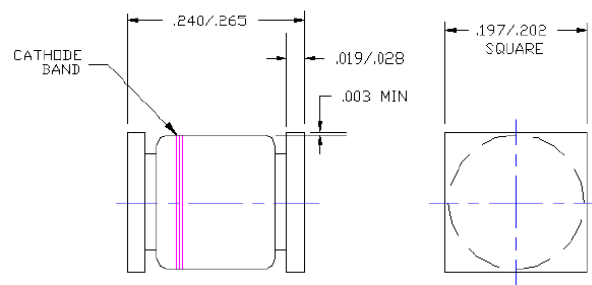
**TYPICAL RS VS IF**

**TYPICAL CT VS VR**

**IF CURVE**

**RP VS VOLTAGE**


**PACKAGE STYLE 'B'**

**PACKAGE STYLE 'C'**

**NOTES:**

1. CATHODE-TO-STUD IS THE STANDARD PART; REVERSE POLARITY IS DENOTED BY THE SUFFIX "R".
2. METAL PARTS ARE GOLD PLATED PER MIL-G-45204, TYPE II.
3. INSTALLATION PRECAUTIONS INCLUDE:  
UN-LUBRICATED STUD TORQUE = 28 INCH DUNCES MAXIMUM.  
DO NOT USE A SCREWDRIVER IN THE TURRET SLOT FOR ANY INSTALLATION PURPOSE \* OR DAMAGE MAY RESULT\*.
4. DIMENSIONS ARE IN INCHES.

**PACKAGE STYLE 'D'**
**STYLE "D" INSULATED STUD**

**PACKAGE STYLE 'SM'**
**STYLE "SM" MELF**

**Ordering Information:**
**Add style letter to suffix for the desired package. IE: HUM2020D**