

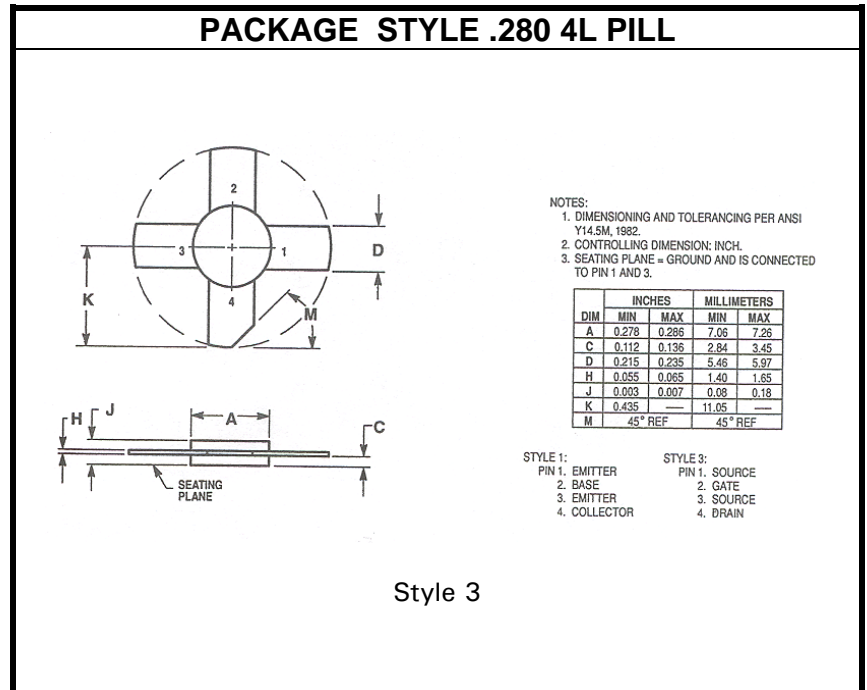
# POWE FIELD EFFECT TRANSISTOR

**DESCRIPTION:**

The **MRF160** is an Enhancement-Mode N-Channel TMOS designed for wideband large-signal amplifier and oscillator applications to 500 MHz.

**MAXIMUM RATINGS**

|               |   |
|---------------|---|
| $I_D$         | 0.5 mA                                      |
| $V_{DSS}$     | 65 V  |
| $V_{GS}$      | $\pm 40$ V                                  |
| $P_{DISS}$    | 8.0 W @ $T_C = 25^\circ\text{C}$            |
| $T_J$         | $-65^\circ\text{C}$ to $+200^\circ\text{C}$ |
| $T_{STG}$     | $-65^\circ\text{C}$ to $+150^\circ\text{C}$ |
| $\theta_{JC}$ | 13.2 $^\circ\text{C/W}$                     |


**CHARACTERISTICS**  $T_C = 25^\circ\text{C}$ 

| SYMBOL                              | TEST CONDITIONS                            |   | MINIMUM                            | TYPICAL                        | MAXIMUM  | UNITS         |
|-------------------------------------|--|---|------------------------------------|--------------------------------|----------|---------------|
| $V_{(BR)DSS}$                       | $I_D = 5.0$ mA                             | $V_{GS} = 0$ V                            | 65                                 |                                |          | V             |
| $I_{DSS}$                           | $V_{DSS} = 28$ V                           | $V_{GS} = 0$ V                            |                                    |                                | 0.5      | mA            |
| $I_{GSS}$                           | $V_{GS} = 40$ V                            | $V_{DS} = 0$ V                            |                                    |                                | 1.0      | $\mu\text{A}$ |
| $V_{GS(th)}$                        | $V_{DS} = 10$ V                            | $I_D = 10$ mA                             | 1.0                                |                                | 6.0      | V             |
| $g_{fs}$                            | $V_{DS} = 10$ V                            | $I_D = 100$ mA                            | 50                                 |                                |          | mmhos         |
| $C_{iss}$<br>$C_{oss}$<br>$C_{rss}$ | $V_{DS} = 28$ V                            | $V_{GS} = 0$ V                            | $f = 1.0$ MHz                      | 3.0<br>4.2<br>0.45             |          | pF            |
| NF                                  | $V_{DS} = 28$ V<br>$Z_S = 67.7 + j = 14.1$ | $I_D = 100$ mA<br>$Z_L = 14.5 + j = 25.7$ | $f = 400$ MHz                      | 3.0                            |          | dB            |
| $G_{ps}$<br>$\eta$                  | $V_{DD} = 28$ V<br>$P_{out} = 2.0$ W       | $I_{DQ} = 100$ mA                         | $f = 400$ MHz                      | 16<br>45                       | 20<br>55 | dB<br>%       |
| $\psi$                              | $V_{DD} = 28$ V<br>$V_{SWR} = 30:1$        | $I_{DQ} = 100$ mA<br>at all phase angles  | $P_{out} = 2.0$ W<br>$f = 400$ MHz | NO DEGRADATION IN OUTPUT POWER |          |               |