

# SILICON N-CHANNEL RF POWER MOSFET

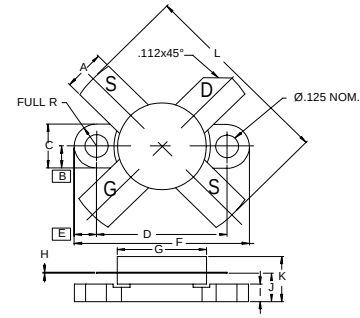
## DESCRIPTION:

The **MRF161** is an Enhancement-Mode N-Channel MOS Broadband RF Power Transistor for Wideband Large Signal Amplifier and Oscillator Applications from 2.0 to 400 MHz.

## MAXIMUM RATINGS

|               |                                             |
|---------------|---------------------------------------------|
| $I_D$         | 900 mA                                      |
| $V_{DSS}$     | 65 V                                        |
| $V_{GS}$      | $\pm 40$ V                                  |
| $P_{DISS}$    | 17.5 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 $+150^\circ\text{C}$ |
| $\theta_{JC}$ | $10^\circ\text{C/W}$                        |

## PACKAGE STYLE .500 4L FLG



| DIM | MINIMUM<br>inches / mm | MAXIMUM<br>inches / mm |
|-----|------------------------|------------------------|
| A   | .220 / 5.59            | .230 / 5.84            |
| B   | .125 / 3.18            |                        |
| C   | .245 / 6.22            | .255 / 6.48            |
| D   | .720 / 18.28           | .730 / 18.54           |
| E   | .125 / 3.18            |                        |
| F   | .970 / 24.64           | .980 / 24.89           |
| G   | .495 / 12.57           | .505 / 12.83           |
| H   | .003 / 0.08            | .007 / 0.18            |
| I   | .090 / 2.29            | .110 / 2.79            |
| J   | .150 / 3.81            | .175 / 4.45            |
| K   |                        | .280 / 7.11            |
| L   | .980 / 24.89           | 1.050 / 26.67          |

## 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                                                             |                                |                   | 1.0     | 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                                                              | 80                             |                   |         | mmhos         |
| $C_{iss}$<br>$C_{oss}$<br>$C_{rss}$ | $V_{DS} = 28$ V $V_{GS} = 0$ V $f = 1.0$ MHz                                                |                                | 7.0<br>9.7<br>2.3 |         | pF            |
| NF                                  | $V_{DS} = 28$ V $I_D = 100$ mA $f = 400$ MHz<br>$Z_S = 67.7+j = 14.1$ $Z_L = 14.5+j = 25.7$ |                                | 3.0               |         | dB            |
| $G_{ps}$<br>$\eta$                  | $V_{DD} = 28$ V $I_{DQ} = 50$ mA $P_{out} = 5.0$ W                                          | 11.0<br>45                     | 13.5<br>50        |         | dB<br>%       |
| $\psi$                              | $V_{DD} = 28$ V $I_{DQ} = 50$ mA $P_{out} = 5.0$ W<br>$V_{SWR} = 30:1$ AT ALL PHASE ANGLES  | NO DEGRADATION IN OUTPUT POWER |                   |         |               |