

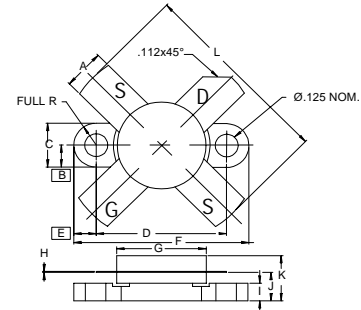
RF FIELD-EFFECT POWER TRANSISTOR

DESCRIPTION:

The **MRF141** is a N-Channel Enhancement-Mode MOSFET RF Power Transistor Designed for 175 MHz 150 W Transmitter and Amplifier Applications.

MAXIMUM RATINGS

| | |
|---------------|---|
| I_D | 16 A |
| V_{DSS} | 65 V |
| V_{GS} | ± 40 V |
| P_{DISS} | 300 W @ $T_C = 25^\circ\text{C}$ |
| T_J | -65°C to $+200^\circ\text{C}$ |
| T_{STG} | -65°C to $+200^\circ\text{C}$ |
| θ_{JC} | 0.6 $^\circ\text{C}/\text{W}$ |

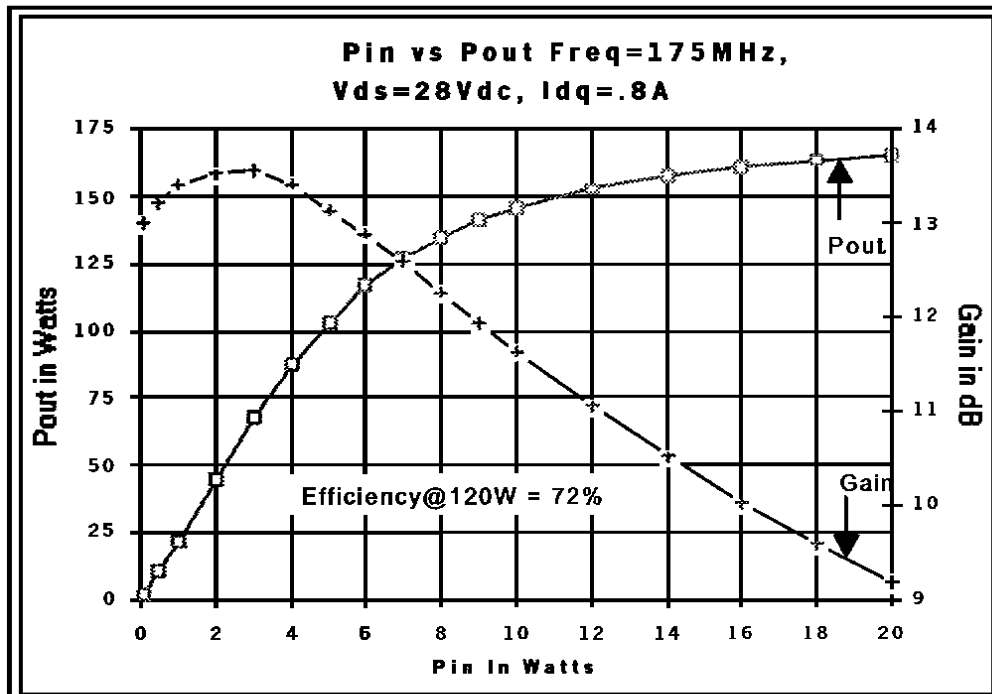
PACKAGE STYLE .500 4L FLG


| DIM | MINIMUM inches / mm | MAXIMUM 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 |

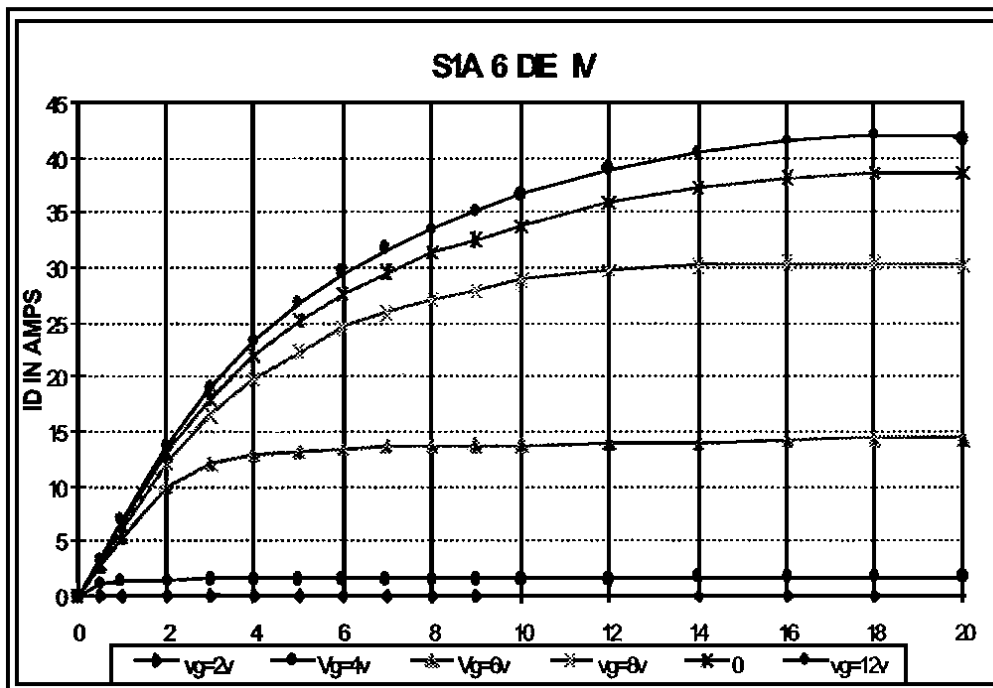
CHARACTERISTICS $T_C = 25^\circ\text{C}$

| SYMBOL | TEST CONDITIONS | MINIMUM | TYPICAL | MAXIMUM | UNITS |
|---|---|--------------------------------|------------------|---------|---------------|
| BV_{DSS} | $I_D = 100$ mA | 65 | | | V |
| I_{DSS} | $V_{DS} = 28$ V $V_{GS} = 0$ V | | | 5.0 | mA |
| I_{GSS} | $V_{DS} = 0$ V $V_{GS} = 20$ V | | | 1.0 | μA |
| $V_{GS(th)}$ | $I_D = 100$ mA $V_{DS} = 10$ V | 1.0 | | 5.0 | V |
| $V_{DS(on)}$ | $I_D = 10$ A $V_{GS} = 10$ V | | | 5.0 | V |
| g_{fs} | $I_D = 5.0$ A $V_{DS} = 10$ V | 5.0 | | | mhos |
| C_{iss} C_{oss} C_{rss} | $V_{DS} = 28$ V $V_{GS} = 0$ V $f = 1.0$ MHz | | 350 420 40 | | pF |
| G_{ps} | $V_{DD} = 28$ V $I_{DQ} = 250$ mA $P_{out} = 150$ W (PEP) $f = 175$ MHz | 16 | 20 10 | | dB |
| η $IMD_{(d3)}$ $IMD_{(d11)}$ | $V_{DD} = 28$ V $I_{DQ} = 250$ mA $P_{out} = 150$ W (PEP) $I_{D(max)} = 5.95$ A $f = 30$ to 30.001 MHz | 40 | -30 -60 | -28 | % dB dB |
| ψ | $V_{DD} = 28$ V $I_{DQ} = 250$ mA $P_{out} = 150$ W (PEP) $f_1 = 30$ to 30.001 MHz $V_{SWR} = 30:1$ | NO DEGRADATION IN OUTPUT POWER | | | |

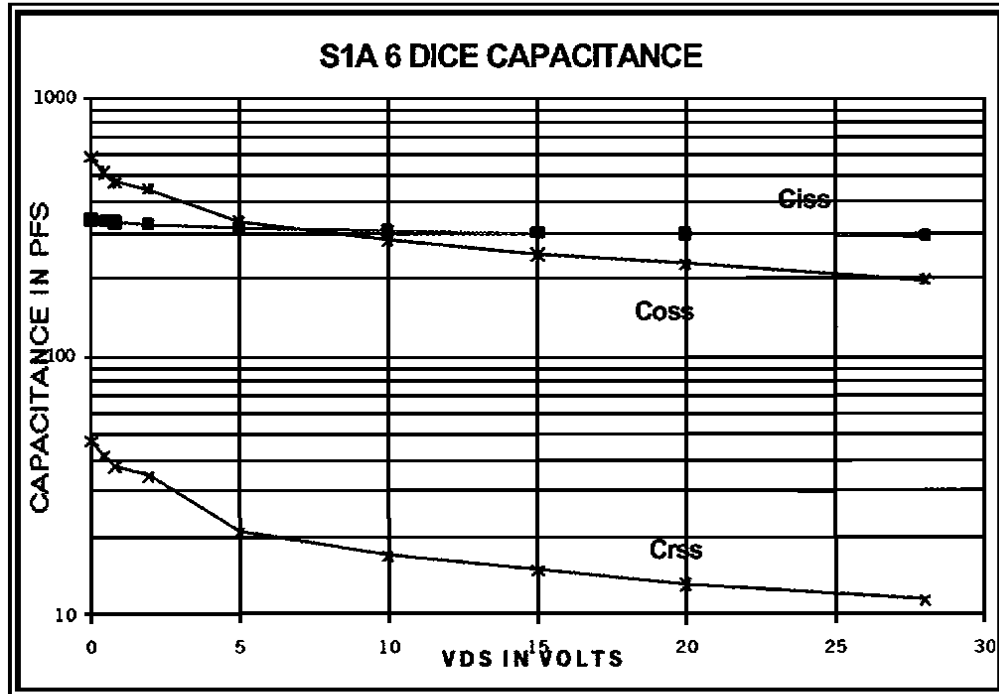
POUT VS PIN GRAPH



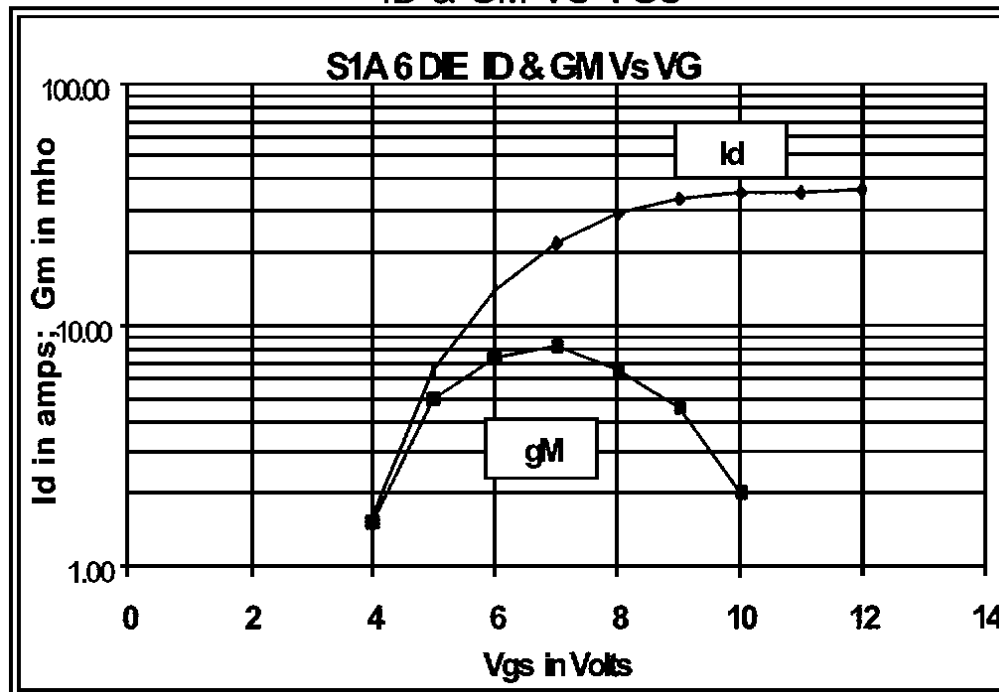
IV CURVE



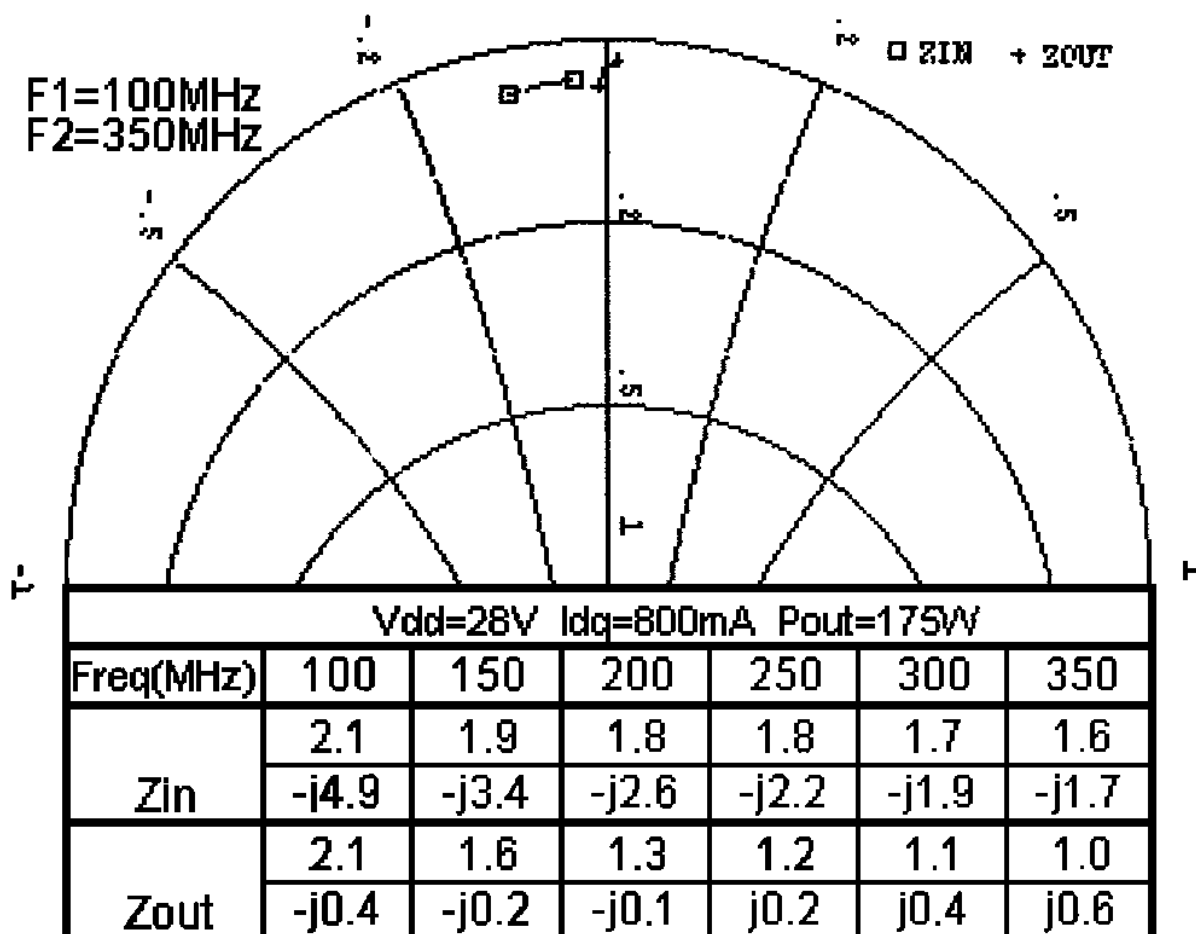
CAPACITANCE VS VOLTAGE



ID & GM VS VGS



Zin Zout



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