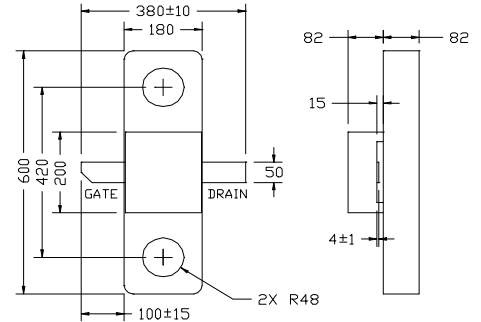


PRELIMINARY DATA SHEET
High Efficiency Heterojunction Power FET

- **NON-HERMETIC 180MIL METAL FLANGE PACKAGE**
- **+36.0dBm TYPICAL OUTPUT POWER**
- **18.0dB TYPICAL POWER GAIN AT 2GHz**
- **0.4 X 4800 MICRON RECESSED “MUSHROOM” GATE**
- **Si₃N₄ PASSIVATION**
- **ADVANCED EPITAXIAL HETEROJUNCTION PROFILE PROVIDES EXTRA HIGH POWER EFFICIENCY, AND HIGH RELIABILITY**


ELECTRICAL CHARACTERISTICS (T_a = 25 °C)

All Dimensions In Mils

| SYMBOLS | PARAMETERS/TEST CONDITIONS | MIN | TYP | MAX | UNIT |
|------------------------|---------------------------------------------------------------------------------------------------------|-----------------|-----------------|------|------|
| P_{1dB} | Output Power at 1dB Compression V _{ds} =8V, I _{ds} =50% I _{dss} | f= 2GHz 34.0 | f= 2GHz 36.0 | | dBm |
| G_{1dB} | Gain at 1dB Compression V _{ds} =8V, I _{ds} =50% I _{dss} | f= 2GHz 16.5 | f= 2GHz 18.0 | | dB |
| PAE | Power Added Efficiency at 1dB Compression V _{ds} =8V, I _{ds} =50% I _{dss} | f=2GHz | 52 | | % |
| I_{dss} | Saturated Drain Current V _{ds} =3V, V _{gs} =0V | 880 | 1440 | 1880 | mA |
| G_m | Transconductance V _{ds} =3V, V _{gs} =0V | 960 | 1560 | | mS |
| V_p | Pinch-off Voltage V _{ds} =3V, I _{ds} =14mA | | -1.0 | -2.5 | V |
| BV_{gd} | Drain Breakdown Voltage I _{gd} =4.8mA | -11 | -15 | | V |
| BV_{gs} | Source Breakdown Voltage I _{gs} =4.8mA | -7 | -14 | | V |
| R_{th} | Thermal Resistance (Au-Sn Eutectic Attach) | | 12* | | °C/W |

 * Overall R_{th} depends on case mounting.

MAXIMUM RATINGS AT 25°C

| SYMBOLS | PARAMETERS | ABSOLUTE ¹ | CONTINUOUS ² |
|------------------------|-------------------------|-----------------------|-------------------------|
| V_{ds} | Drain-Source Voltage | 12V | 8V |
| V_{gs} | Gate-Source Voltage | -8V | -3V |
| I_{ds} | Drain Current | I _{dss} | 1.2A |
| I_{gsf} | Forward Gate Current | 240mA | 40mA |
| P_{in} | Input Power | 33dBm | @ 3dB Compression |
| T_{ch} | Channel Temperature | 175°C | 150°C |
| T_{stg} | Storage Temperature | -65/175°C | -65/150°C |
| P_t | Total Power Dissipation | 11.4 W | 9.5 W |

Note: 1. Exceeding any of the above ratings may result in permanent damage.

2. Exceeding any of the above ratings may reduce MTTF below design goals.

EPA480C-180F

PRELIMINARY DATA SHEET

High Efficiency Heterojunction Power FET

S-PARAMETERS

8V, 1/2 Idss

| Freq | S11 | S11 | S21 | S21 | S12 | S12 | S22 | S22 |
|------|-------|--------|--------|--------|-------|--------|-------|--------|
| GHz | Mag | Ang | Mag | Ang | Mag | Ang | Mag | Ang |
| 0.5 | 0.950 | -153.2 | 13.774 | 90.9 | 0.012 | 22.2 | 0.631 | -176.0 |
| 1.0 | 0.940 | -174.6 | 7.167 | 72.0 | 0.014 | 20.5 | 0.619 | 177.3 |
| 1.5 | 0.875 | 172.8 | 6.169 | 60.5 | 0.021 | 23.9 | 0.515 | 170.2 |
| 2.0 | 0.861 | 163.1 | 4.932 | 47.8 | 0.026 | 21.2 | 0.485 | 166.0 |
| 2.5 | 0.832 | 154.4 | 4.353 | 34.5 | 0.032 | 16.3 | 0.441 | 162.1 |
| 3.0 | 0.783 | 143.2 | 4.129 | 19.7 | 0.039 | 8.4 | 0.383 | 159.6 |
| 3.5 | 0.733 | 125.6 | 4.075 | 1.3 | 0.049 | -4.2 | 0.314 | 158.7 |
| 4.0 | 0.685 | 100.8 | 3.990 | -20.3 | 0.060 | -20.8 | 0.249 | 154.5 |
| 4.5 | 0.676 | 70.4 | 3.802 | -44.0 | 0.067 | -38.9 | 0.179 | 139.8 |
| 5.0 | 0.704 | 39.1 | 3.494 | -69.2 | 0.072 | -59.2 | 0.131 | 100.2 |
| 5.5 | 0.753 | 8.6 | 3.102 | -94.5 | 0.073 | -78.4 | 0.148 | 46.3 |
| 6.0 | 0.808 | -19.2 | 2.647 | -119.7 | 0.069 | -100.1 | 0.202 | 6.8 |
| 6.5 | 0.870 | -45.1 | 2.231 | -143.6 | 0.060 | -119.6 | 0.291 | -30.6 |
| 7.0 | 0.921 | -65.6 | 1.718 | -168.3 | 0.046 | -137.8 | 0.380 | -59.4 |
| 7.5 | 0.950 | -79.0 | 1.285 | 170.5 | 0.033 | -149.3 | 0.486 | -84.7 |
| 8.0 | 0.957 | -89.6 | 0.961 | 153.4 | 0.024 | -148.4 | 0.589 | -102.3 |
| 8.5 | 0.963 | -101.4 | 0.757 | 138.6 | 0.018 | -135.7 | 0.690 | -110.3 |
| 9.0 | 0.939 | -115.8 | 0.595 | 126.1 | 0.035 | -132.3 | 0.727 | -113.0 |
| 9.5 | 0.943 | -127.5 | 0.526 | 114.8 | 0.035 | -175.9 | 0.738 | -117.6 |
| 10.0 | 0.960 | -138.4 | 0.461 | 97.1 | 0.024 | 157.9 | 0.756 | -134.2 |