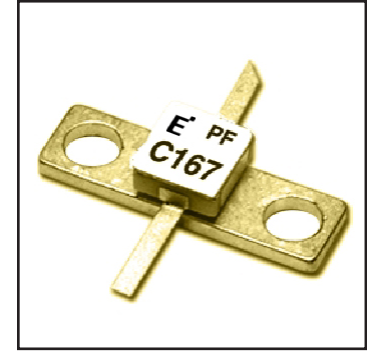


FLC167WF

C-Band Power GaAs FET

FEATURES

- High Output Power: $P_{1dB} = 31.8\text{dBm(Typ.)}$
- High Gain: $G_{1dB} = 7.5\text{dB(Typ.)}$
- High PAE: $\eta_{add} = 35\%(\text{Typ.})$
- Proven Reliability
- Hermetic Metal/Ceramic Package



DESCRIPTION

The FLC167WF is a power GaAs FET that is designed for general purpose applications in the C-Band frequency range as it provides superior power, gain, and efficiency.

Eudyna stringent Quality Assurance Program assures the highest reliability and consistent performance.

ABSOLUTE MAXIMUM RATING (Ambient Temperature $T_a=25^\circ\text{C}$)

| Item | Symbol | Condition | Rating | Unit |
|-------------------------|-----------|--------------------------|-------------|------------------|
| Drain-Source Voltage | V_{DS} | | 15 | V |
| Gate-Source Voltage | V_{GS} | | -5 | V |
| Total Power Dissipation | P_T | $T_C = 25^\circ\text{C}$ | 7.5 | W |
| Storage Temperature | T_{stg} | | -65 to +175 | $^\circ\text{C}$ |
| Channel Temperature | T_{ch} | | 175 | $^\circ\text{C}$ |

Eudyna recommends the following conditions for the reliable operation of GaAs FETs:

1. The drain-source operating voltage (V_{DS}) should not exceed 10 volts.
2. The forward and reverse gate currents should not exceed 9.6 and -1.0 mA respectively with gate resistance of 200Ω .
3. The operating channel temperature (T_{ch}) should not exceed 145°C .

ELECTRICAL CHARACTERISTICS (Ambient Temperature $T_a=25^\circ\text{C}$)

| Item | Symbol | Test Conditions | Limit | | | Unit |
|-------------------------------|--------------|--------------------------------------------------------------------------------------|-------|------|------|--------------------|
| | | | Min. | Typ. | Max. | |
| Saturated Drain Current | I_{DSS} | $V_{DS} = 5\text{V}, V_{GS} = 0\text{V}$ | - | 600 | 900 | mA |
| Transconductance | g_m | $V_{DS} = 5\text{V}, I_{DS} = 400\text{mA}$ | - | 300 | - | mS |
| Pinch-off Voltage | V_p | $V_{DS} = 5\text{V}, I_{DS} = 30\text{mA}$ | -1.0 | -2.0 | -3.5 | V |
| Gate Source Breakdown Voltage | V_{GSO} | $I_{GS} = -30\mu\text{A}$ | -5 | - | - | V |
| Output Power at 1dB G.C.P. | P_{1dB} | $V_{DS} = 10\text{V},$ $I_{DS} = 0.6 I_{DSS} (\text{Typ.}),$ $f = 6\text{GHz}$ | 30.5 | 31.8 | - | dBm |
| Power Gain at 1dB G.C.P. | G_{1dB} | | 6.5 | 7.5 | - | dB |
| Power-added Efficiency | η_{add} | | - | 35 | - | % |
| Thermal Resistance | R_{th} | Channel to Case | - | 15 | 20 | $^\circ\text{C/W}$ |

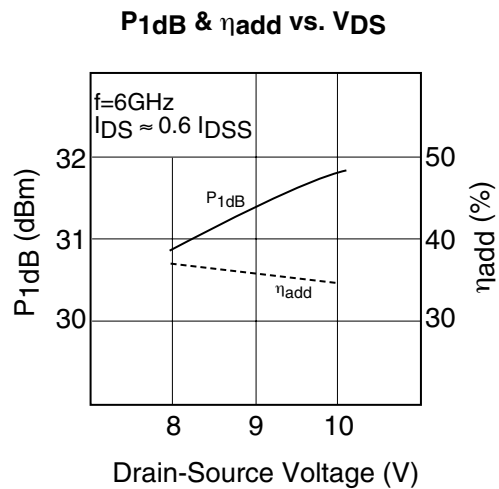
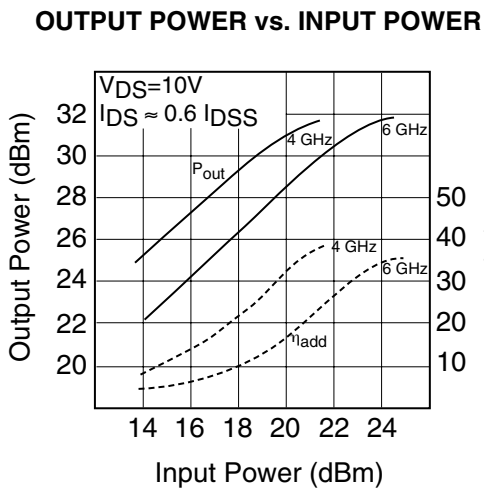
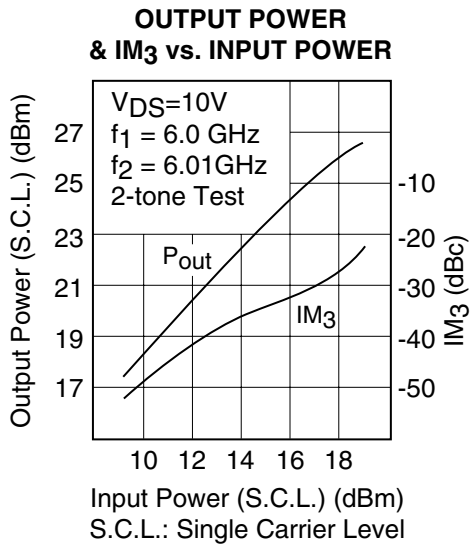
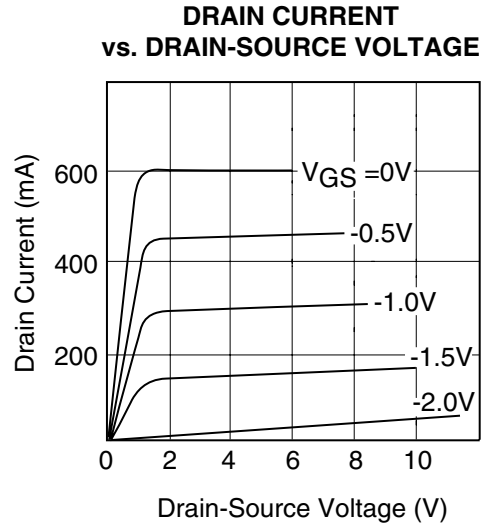
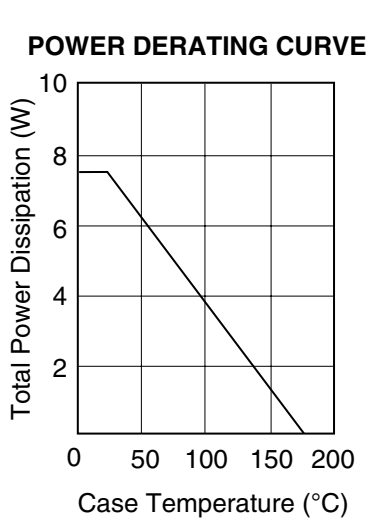
CASE STYLE: WF

G.C.P.: Gain Compression Point

Eudyna

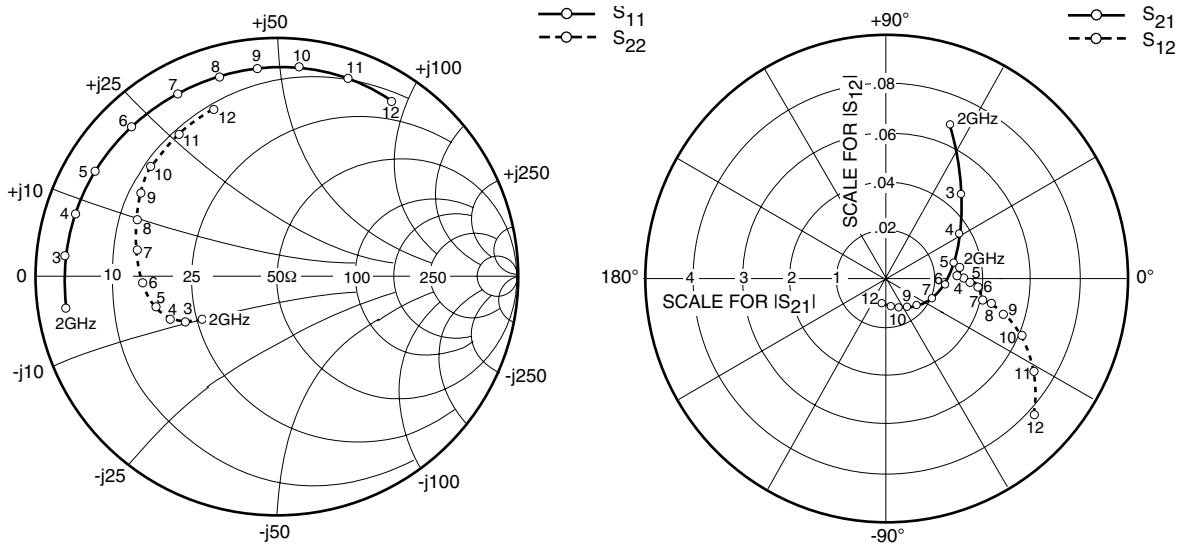
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C-Band Power GaAs FET



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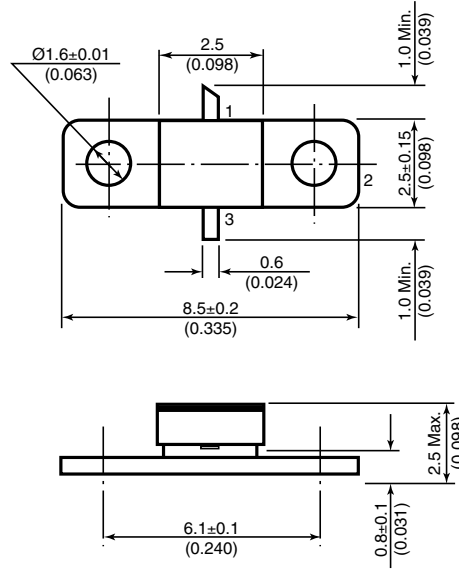
S-PARAMETERS

$V_{DS} = 10V, I_{DS} = 360mA$

| FREQUENCY (MHZ) | S11 | | S21 | | S12 | | S22 | |
|--------------------|------|--------|--------|--------|------|-------|------|--------|
| | MAG | ANG | MAG | ANG | MAG | ANG | MAG | ANG |
| 500 | .922 | -104.6 | 11.190 | 119.4 | .025 | 36.5 | .234 | -124.6 |
| 1000 | .895 | -142.7 | 6.587 | 94.0 | .029 | 18.2 | .290 | -142.9 |
| 2000 | .887 | -171.4 | 3.424 | 67.1 | .030 | 5.3 | .360 | -150.5 |
| 3000 | .884 | 174.4 | 2.295 | 47.9 | .030 | 1.0 | .423 | -153.5 |
| 4000 | .877 | 163.1 | 1.762 | 30.6 | .031 | 0.1 | .475 | -158.3 |
| 5000 | .873 | 149.8 | 1.452 | 13.0 | .034 | -1.9 | .511 | -165.9 |
| 6000 | .870 | 134.2 | 1.227 | -6.0 | .038 | -5.5 | .547 | -177.6 |
| 7000 | .867 | 118.6 | 1.019 | -24.9 | .040 | -12.7 | .585 | 168.5 |
| 8000 | .860 | 106.0 | .843 | -40.9 | .044 | -13.1 | .625 | 157.3 |
| 9000 | .866 | 95.5 | .725 | -54.7 | .051 | -17.7 | .664 | 148.4 |
| 10000 | .875 | 84.0 | .656 | -69.2 | .060 | -22.9 | .692 | 138.4 |
| 11000 | .877 | 70.5 | .596 | -85.7 | .072 | -32.1 | .717 | 124.3 |
| 12000 | .871 | 57.3 | .525 | -101.4 | .082 | -42.2 | .747 | 110.6 |

Case Style "WF"

Metal-Ceramic Hermetic Package



- 1. Gate
- 2. Source (Flange)
- 3. Drain
- 4. Source (Flange)

Unit: mm(inches)