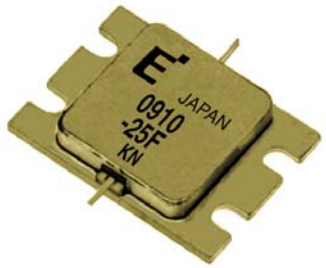
# FLM0910-25F

## X-Band Internally Matched FET

### FEATURES

- High Output Power: P1dB=44dBm(Typ.)
- High Gain: G1dB=7.0dB(Typ.)
- High PAE: $\eta$ add=30%(Typ.)
- Broad Band: 9.5～10.5GHz
- Impedance Matched Zin/Zout = 50Ω
- Hermetically Sealed Package




### DESCRIPTION

The FLM0910-25F is a power GaAs FET that is internally matched for standard communication bands to provide optimum power and gain in a 50Ω system.

### ABSOLUTE MAXIMUM RATINGS (Case Temperature Tc=25℃)

| Item | Symbol | Rating | Unit |
|---|---|---|---|
| Drain-Source Voltage | $V_{DS}$ | 15 | V |
| Gate-Source Voltage | $V_{GS}$ | -5 | V |
| Total Power Dissipation | $P_T$ | 93.7 | W |
| Storage Temperature | $T_{stg}$ | -65 to +175 | ℃ |
| Channel Temperature | $T_{ch}$ | 175 | ℃ |

### Recommended Operating Condition(Case Temperature Tc=25℃)

| Item | Symbol | Condition | Limit | Unit |
|---|---|---|---|---|
| DC Input Voltage | $V_{DS}$ | | ≦10 | V |
| Forward Gate Current | $I_{GF}$ | $R_G$=25Ω | ≦64 | mA |
| Reverse Gate Current | $I_{GR}$ | $R_G$=25Ω | ≧-11.2 | mA |

### ELECTRICAL CHARACTERISTICS (Case Temperature Tc=25℃)

| Item | Symbol | Test Conditions | Limit | | | Unit |
|---|---|---|---|---|---|---|
| | | | Min. | Typ. | Max. | |
| Drain Current | $I_{DSS}$ | $V_{DS}$=5V , $V_{GS}$=0V | - | 10.8 | 16.2 | A |
| Transconductance | $g_m$ | $V_{DS}$=5V , $I_{DS}$=6.92A | - | 10000 | - | mS |
| Pinch-off Voltage | $V_p$ | $V_{DS}$=5V , $I_{DS}$=500mA | -0.5 | -1.5 | -3.0 | V |
| Gate-Source Breakdown Voltage | $V_{GSO}$ | $I_{GS}$=-500uA | -5.0 | - | - | V |
| Output Power at 1dB G.C.P. | $P_{1dB}$ | $V_{DS}$=10V<br>f=9.5 - 10.5 GHz<br>$I_{DS}$=0.6Idss<br>Zs=ZL=50Ω | 43 | 44 | - | dBm |
| Power Gain at 1dB G.C.P. | $G_{1dB}$ | | 6.0 | 7.0 | - | dB |
| Drain Current | $I_{dsr}$ | | - | 6.5 | 7.2 | A |
| Power-added Efficiency | $\eta$ add | | - | 30 | - | % |
| Gain Flatness | ΔG | | - | - | ±0.6 | dB |
| Thermal Resistance | $R_{th}$ | Channel to Case | - | 1.4 | 1.6 | ℃/W |
| Channel Temperature Rise | $\Delta T_{ch}$ | 10V X Idsr X Rth | - | - | 100 | ℃ |

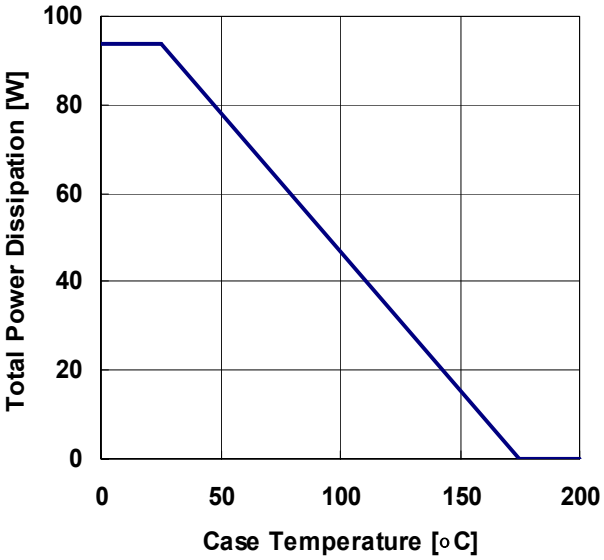
**CASE STYLE: IK**

G.C.P.:Gain Compression Point

| | | |
|---|---|---|
| ESD | Class Ⅲ | 2000V ～ |

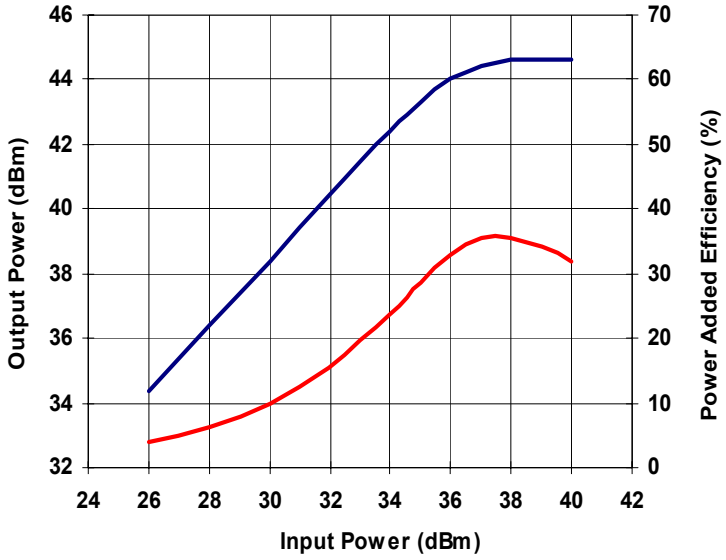
Note : Based on EIAJ ED-4701 C-111A(C=100pF, R=1.5kΩ)

## POWER DERATING CURVE



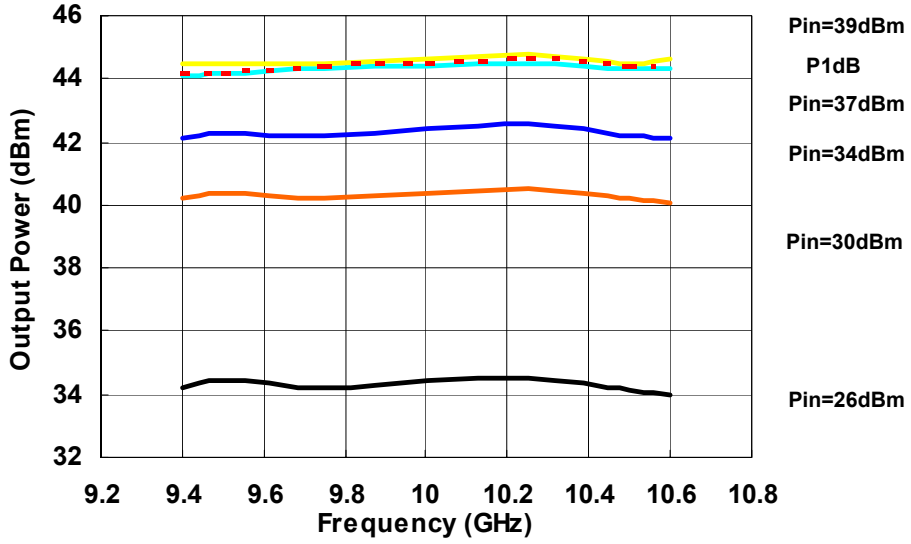

## OUTPUT POWER & POWER ADDED EFFICIENCY vs. INPUT POWER

VDS=10V, IDS(DC)=0.60IDSS, f=10.0GHz

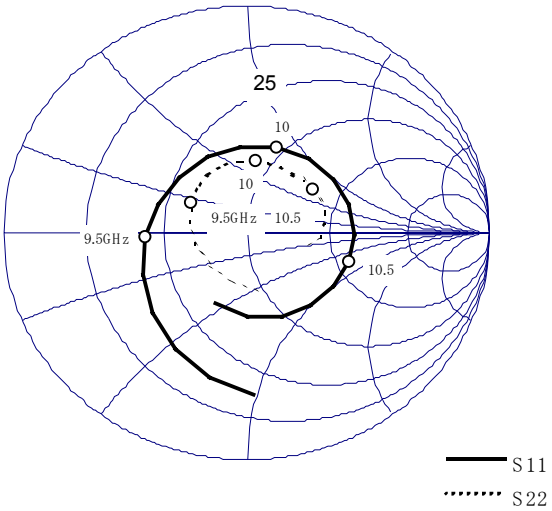


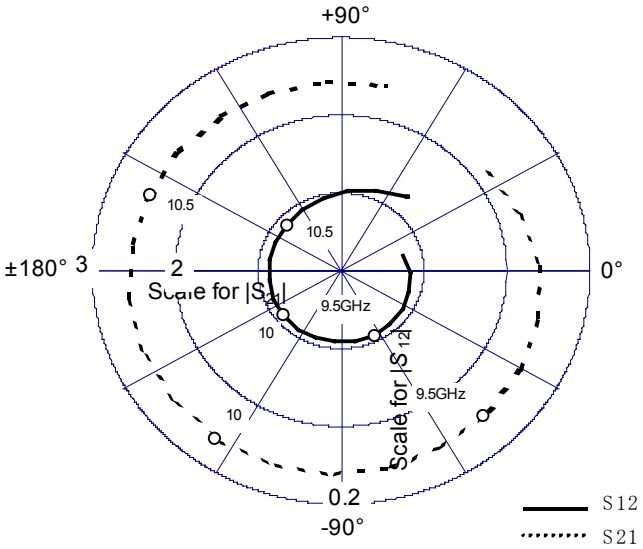

## OUTPUT POWER vs. FREQUENCY

VDS=10V, IDS(DC)=0.60IDSS



## ■ S-PARAMETER



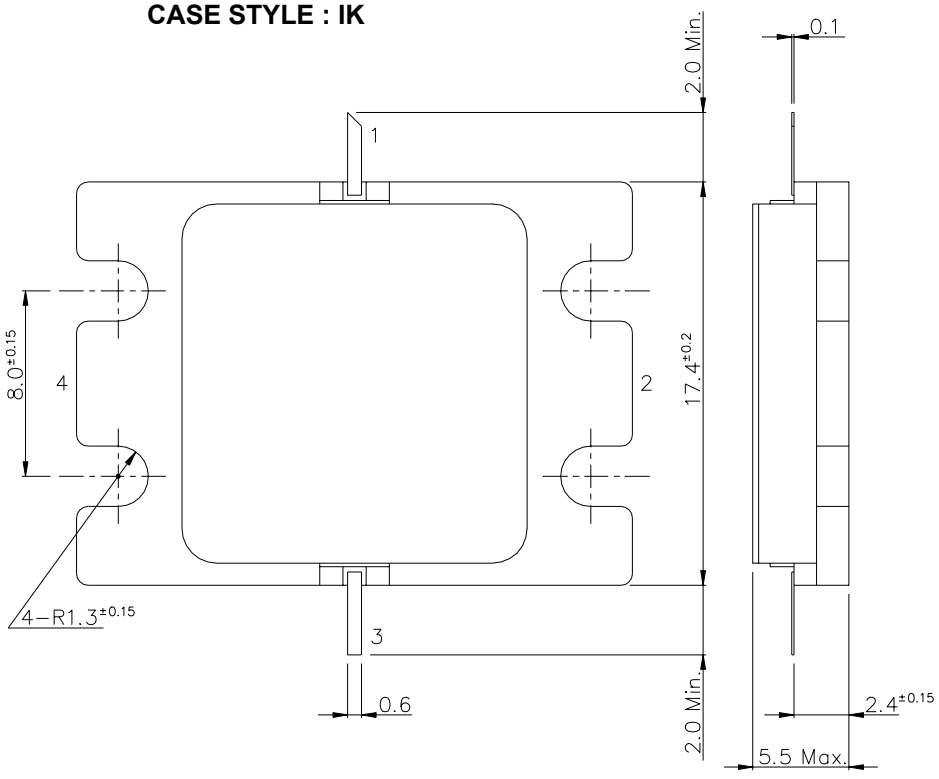




**VDS=10V , IDS=0.6Idss**

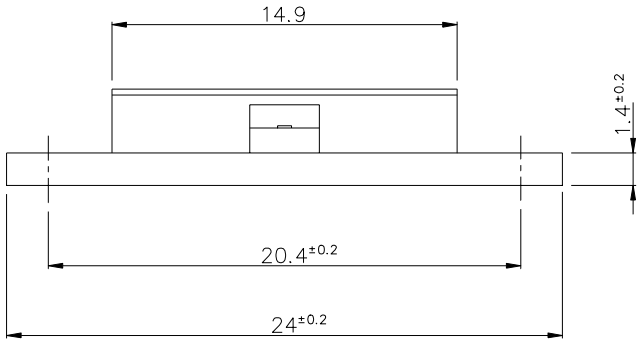
| Freq | S11 | | S21 | | S12 | | S22 | |
|---|---|---|---|---|---|---|---|---|
| [GHz] | MAG | ANG | MAG | ANG | MAG | ANG | MAG | ANG |
| 9 | 0.71 | -88.02 | 2.15 | 35.09 | 0.05 | 15.25 | 0.26 | -77.71 |
| 9.1 | 0.65 | -103.53 | 2.29 | 18.28 | 0.06 | -1.55 | 0.22 | -107.05 |
| 9.2 | 0.59 | -120.18 | 2.40 | 1.32 | 0.06 | -17.77 | 0.21 | -138.65 |
| 9.3 | 0.53 | -138.00 | 2.47 | -15.34 | 0.06 | -34.01 | 0.22 | -167.56 |
| 9.4 | 0.47 | -156.97 | 2.51 | -31.59 | 0.06 | -49.64 | 0.24 | 168.82 |
| 9.5 | 0.42 | -177.22 | 2.53 | -47.33 | 0.06 | -64.58 | 0.26 | 149.54 |
| 9.6 | 0.39 | 161.48 | 2.56 | -62.74 | 0.06 | -79.62 | 0.29 | 133.93 |
| 9.7 | 0.37 | 138.88 | 2.59 | -78.13 | 0.06 | -94.61 | 0.30 | 120.00 |
| 9.8 | 0.37 | 116.07 | 2.62 | -93.65 | 0.06 | -109.43 | 0.31 | 107.27 |
| 9.9 | 0.38 | 93.62 | 2.63 | -109.43 | 0.06 | -124.61 | 0.32 | 95.51 |
| 10 | 0.40 | 72.47 | 2.64 | -125.14 | 0.06 | -140.33 | 0.32 | 84.23 |
| 10.1 | 0.41 | 52.59 | 2.62 | -140.95 | 0.06 | -155.72 | 0.32 | 73.93 |
| 10.2 | 0.43 | 33.84 | 2.60 | -156.81 | 0.06 | -172.24 | 0.32 | 63.61 |
| 10.3 | 0.44 | 16.24 | 2.57 | -172.15 | 0.06 | 171.03 | 0.32 | 54.33 |
| 10.4 | 0.44 | -0.56 | 2.53 | 172.43 | 0.06 | 154.60 | 0.33 | 44.93 |
| 10.5 | 0.44 | -17.05 | 2.50 | 156.88 | 0.06 | 137.92 | 0.33 | 35.26 |
| 10.6 | 0.43 | -33.47 | 2.47 | 141.58 | 0.06 | 120.72 | 0.33 | 25.29 |
| 10.7 | 0.42 | -50.45 | 2.44 | 126.23 | 0.06 | 103.61 | 0.33 | 15.68 |
| 10.8 | 0.40 | -68.63 | 2.43 | 110.45 | 0.07 | 85.80 | 0.32 | 6.13 |
| 10.9 | 0.37 | -89.03 | 2.43 | 94.22 | 0.07 | 68.12 | 0.30 | -2.58 |
| 11 | 0.34 | -113.11 | 2.42 | 77.32 | 0.08 | 50.38 | 0.27 | -9.87 |

### ■ Package Out Line

**CASE STYLE : IK**




Unit : mm




PIN ASSIGMENT
1 : GATE
2 : SOURCE
3 : DRAIN
4 : SOURCE

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