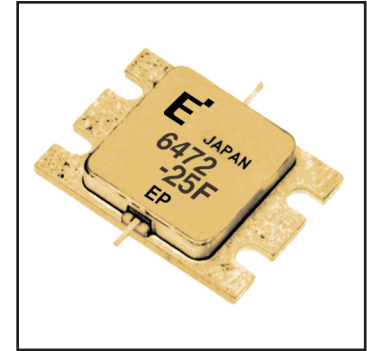


### FEATURES

- High Output Power:  $P_{1dB} = 44.5\text{dBm}$  (Typ.)
- High Gain:  $G_{1dB} = 9.5\text{dB}$  (Typ.)
- High PAE:  $\eta_{add} = 38\%$  (Typ.)
- Low  $IM_3 = -46\text{dBc}@P_o = 33.5\text{dBm}$
- Broad Band: 6.4 ~ 7.2GHz
- Impedance Matched  $Z_{in}/Z_{out} = 50\Omega$
- Hermetically Sealed Package



### DESCRIPTION

The FLM6472-25F is a power GaAs FET that is internally matched for standard communication bands to provide optimum power and gain in a 50 ohm system.

Eudyna's 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 | $P_T$     | $T_C = 25^\circ\text{C}$ | 93.7        | W                |
| Storage Temperature     | $T_{stg}$ |                          | -65 to +175 | $^\circ\text{C}$ |
| Channel Temperature     | $T_{ch}$  |                          | 175         | $^\circ\text{C}$ |

Fujitsu 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 64.0 and -11.2 mA respectively with gate resistance of 25 $\Omega$ .

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

| Item                                 | Symbol          | Test Conditions  | Limit  |      |           | Unit             |                    |
|--------------------------------------|-----------------|--|--|------|-----------|------------------|--------------------|
|                                      |                 |  | Min.   | Typ. | Max.      |                  |                    |
| Saturated Drain Current              | $I_{DSS}$       | $V_{DS} = 5\text{V}, V_{GS} = 0\text{V}$   | -  | 10   | 15        | A                |                    |
| Transconductance                     | $g_m$           | $V_{DS} = 5\text{V}, I_{DS} = 6500\text{mA}$   | -  | 10   | -         | S                |                    |
| Pinch-off Voltage                    | $V_p$           | $V_{DS} = 5\text{V}, I_{DS} = 500\text{mA}$  | -0.5   | -1.5 | -3.0      | V                |                    |
| Gate Source Breakdown Voltage        | $V_{GSO}$       | $I_{GS} = -500\mu\text{A}$   | -5.0   | -    | -         | V                |                    |
| Output Power at 1dB G.C.P.           | $P_{1dB}$       | $V_{DS} = 10\text{V},$<br>$I_{DS} = 0.65 I_{DSS}$ (Typ.),<br>$f = 6.4 \sim 7.2 \text{GHz},$<br>$Z_S = Z_L = 50 \text{ohm}$ | 43.5   | 44.5 | -         | dBm              |                    |
| Power Gain at 1dB G.C.P.             | $G_{1dB}$       |  | 8.5  | 9.5  | -         | dB               |                    |
| Drain Current                        | $I_{dsr}$       |  | -  | 6500 | 7600      | mA               |                    |
| Power-added Efficiency               | $\eta_{add}$    |  | -  | 38   | -         | %                |                    |
| Gain Flatness                        | $\Delta G$      |  | -  | -    | $\pm 0.6$ | dB               |                    |
| 3rd Order Intermodulation Distortion | $IM_3$          |  | $f = 7.2 \text{GHz}, \Delta f = 10 \text{MHz}$<br>2-Tone Test<br>$P_{out} = 33.5\text{dBm S.C.L.}$ | -44  | -46       | -                | dBc                |
| Thermal Resistance                   | $R_{th}$        |  | Channel to Case  | -    | 1.4       | 1.6              | $^\circ\text{C/W}$ |
| Channel Temperature Rise             | $\Delta T_{ch}$ | $10\text{V} \times I_{dsr} \times R_{th}$  | -  | -    | 100       | $^\circ\text{C}$ |                    |

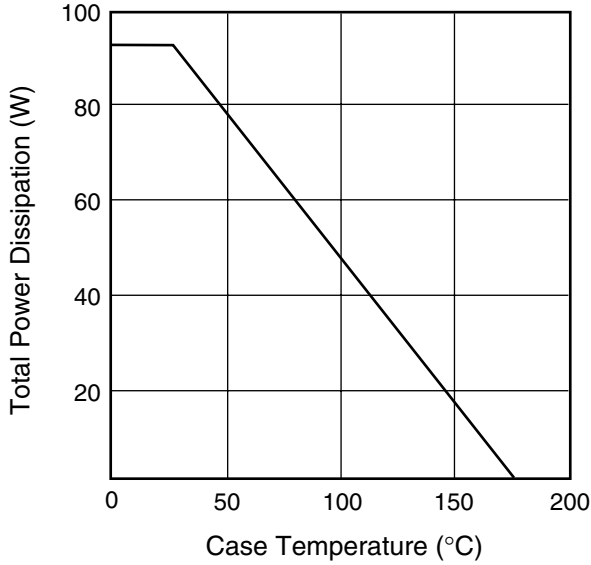
CASE STYLE: IK

G.C.P.: Gain Compression Point, S.C.L.: Single Carrier Level

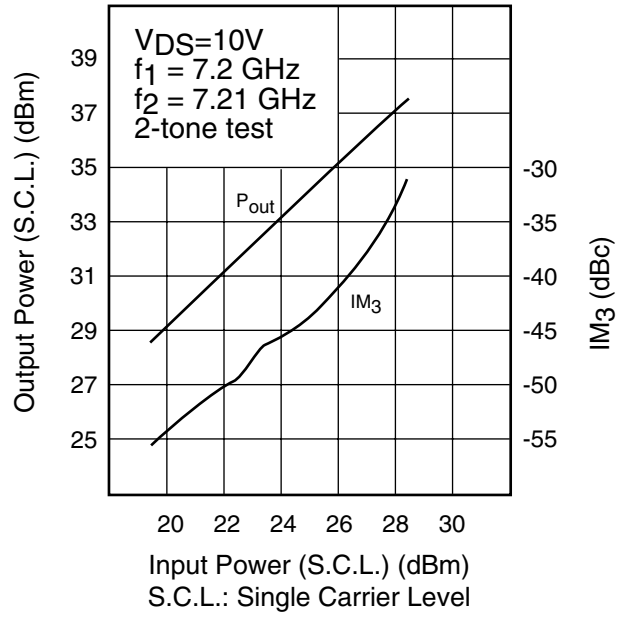
# FLM6472-25F

C-Band Internally Matched FET

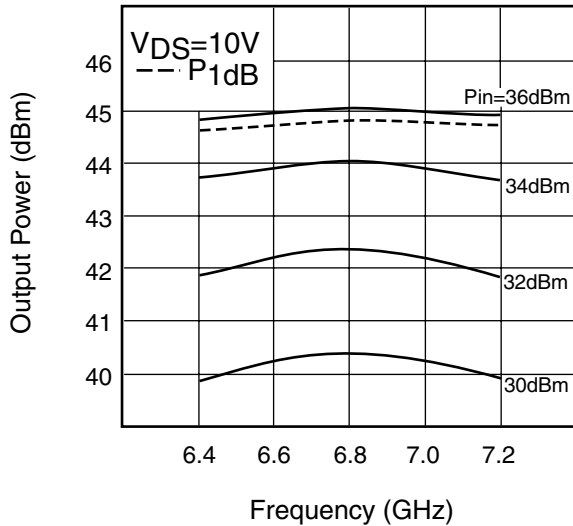
**POWER DERATING CURVE**



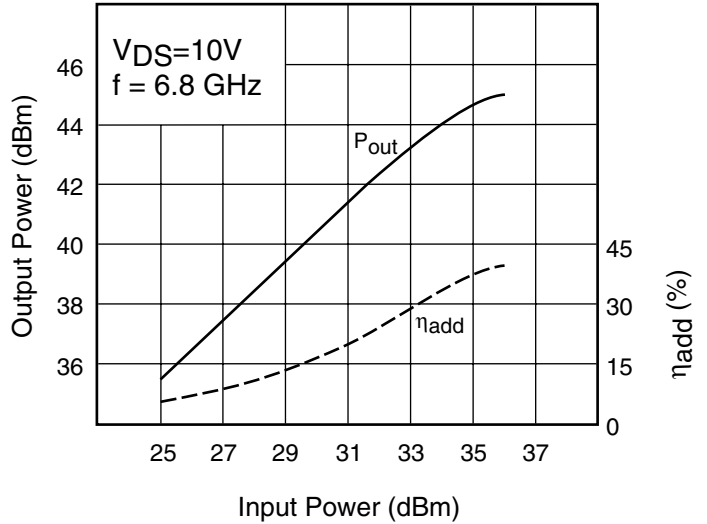
**OUTPUT POWER & IM<sub>3</sub> vs. INPUT POWER**

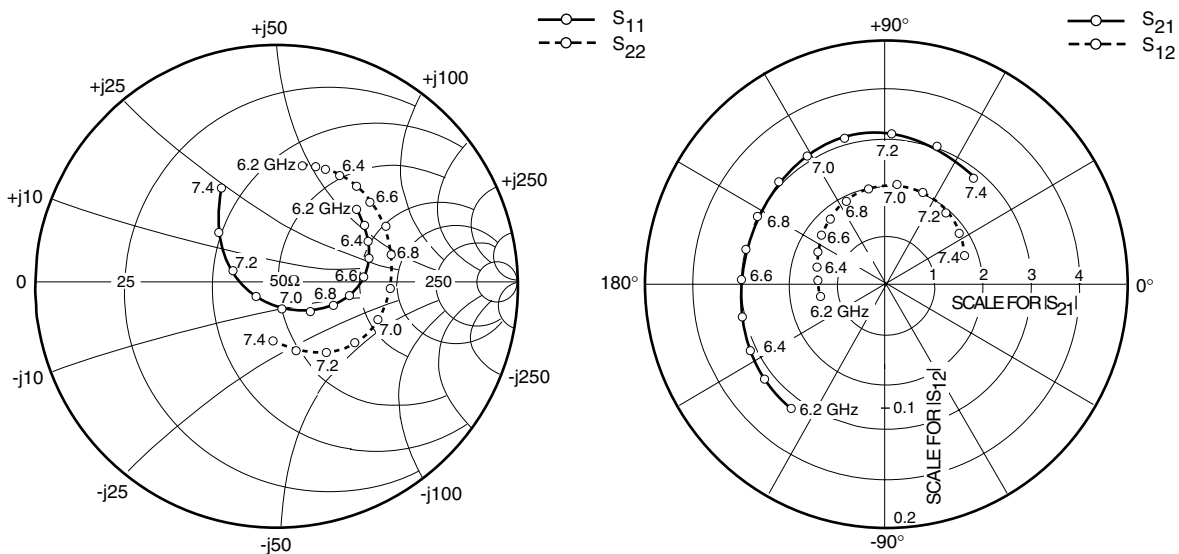


**OUTPUT POWER vs. FREQUENCY**



**OUTPUT POWER vs. INPUT POWER**





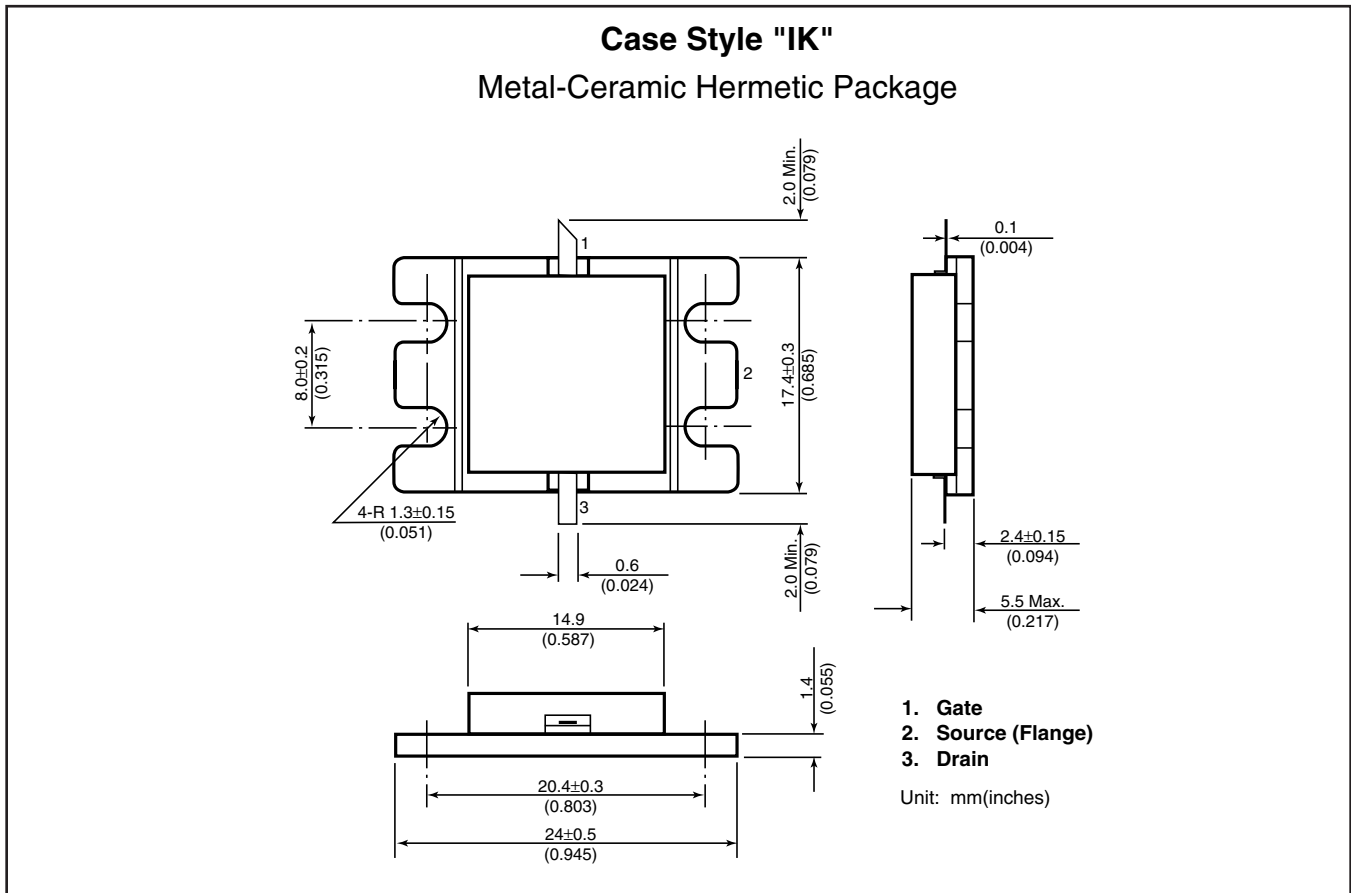
### S-PARAMETERS

$V_{DS} = 10V, I_{DS} = 6500mA$

| FREQUENCY<br>(MHZ) | S11  |        | S21   |        | S12  |        | S22  |       |
|--------------------|------|--------|-------|--------|------|--------|------|-------|
|                    | MAG  | ANG    | MAG   | ANG    | MAG  | ANG    | MAG  | ANG   |
| 6200               | .456 | 42.1   | 3.198 | -129.2 | .057 | -169.6 | .510 | 71.7  |
| 6300               | .444 | 33.6   | 3.139 | -143.1 | .058 | 179.0  | .512 | 66.4  |
| 6400               | .426 | 24.4   | 3.089 | -154.7 | .061 | 167.8  | .512 | 59.8  |
| 6500               | .397 | 15.3   | 3.018 | -167.8 | .064 | 156.1  | .513 | 51.4  |
| 6600               | .358 | 4.4    | 3.044 | 178.4  | .069 | 144.0  | .512 | 41.3  |
| 6700               | .312 | -6.6   | 3.038 | 165.6  | .071 | 131.3  | .502 | 28.9  |
| 6800               | .254 | -21.0  | 3.063 | 151.7  | .076 | 117.2  | .488 | 14.6  |
| 6900               | .183 | -40.2  | 3.101 | 136.9  | .079 | 101.6  | .466 | -1.8  |
| 7000               | .114 | -77.1  | 3.148 | 121.1  | .081 | 84.6   | .437 | -19.7 |
| 7100               | .104 | -149.7 | 3.164 | 105.9  | .082 | 68.7   | .401 | -37.0 |
| 7200               | .195 | 164.3  | 3.139 | 88.1   | .076 | 53.1   | .354 | -55.3 |
| 7300               | .325 | 138.9  | 3.042 | 69.6   | .073 | 32.7   | .298 | -74.2 |
| 7400               | .454 | 120.5  | 2.871 | 50.6   | .069 | 19.4   | .238 | -93.9 |

# FLM6472-25F

## C-Band Internally Matched FET



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### CAUTION

Eudyna Devices Inc. products contain **gallium arsenide (GaAs)** which can be hazardous to the human body and the environment. For safety, observe the following procedures:

- Do not put this product into the mouth.
- Do not alter the form of this product into a gas, powder, or liquid through burning, crushing, or chemical processing as these by-products are dangerous to the human body if inhaled, ingested, or swallowed.
- Observe government laws and company regulations when discarding this product. This product must be discarded in accordance with methods specified by applicable hazardous waste procedures.

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