FLM7179-4F

C-Band Internally Matched FET

FEATURES

- High Output Power: P_{1dB} = 36.5dBm (Typ.)
- High Gain: G_{1dB} = 9.0dB (Typ.)
- High PAE: η_{add} = 35% (Typ.)
- Low IM_3 = -46dBc@Po = 25.5dBm
- Broad Band: 7.1 ~ 7.9GHz
- Impedance Matched Zin/Zout = 50Ω
- Hermetically Sealed Package

DESCRIPTION

The FLM7179-4F 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 Ta=25°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°C	25.0	W
Storage Temperature	T_{stg}		-65 to +175	°C
Channel Temperature	T_{ch}		175	°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 16.0 and -2.2 mA respectively with gate resistance of 100Ω.

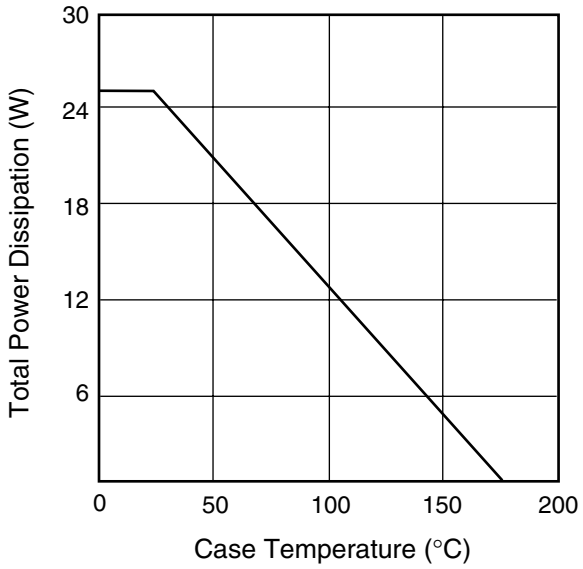
ELECTRICAL CHARACTERISTICS (Ambient Temperature Ta=25°C)

Item	Symbol	Test Conditions	Limit			Unit
			Min.	Typ.	Max.	
Saturated Drain Current	I_{DSS}	V_{DS} = 5V, V_{GS} = 0V	-	1700	2600	mA
Transconductance	g_m	V_{DS} = 5V, I_{DS} = 1100mA	-	1700	-	mS
Pinch-off Voltage	V_p	V_{DS} = 5V, I_{DS} = 85mA	-0.5	-1.5	-3.0	V
Gate Source Breakdown Voltage	V_{GSO}	I_{GS} = -85μA	-5.0	-	-	V
Output Power at 1dB G.C.P.	P_{1dB}	V_{DS} =10V, I_{DS} = 0.65 I_{DSS} (Typ.), f = 7.1 ~ 7.9 GHz, Z_S=Z_L= 50 ohm	35.5	36.5	-	dBm
Power Gain at 1dB G.C.P.	G_{1dB}		8.0	9.0	-	dB
Drain Current	I_{dsr}		-	1100	1300	mA
Power-added Efficiency	η_{add}		-	35	-	%
Gain Flatness	ΔG		-	-	±0.6	dB
3rd Order Intermodulation Distortion	IM_3	f = 7.9 GHz, Δf = 10 MHz 2-Tone Test P_{out} = 25.5dBm S.C.L.	-44	-46	-	dBc
Thermal Resistance	R_{th}	Channel to Case	-	5.0	6.0	°C/W
Channel Temperature Rise	ΔT_{ch}	10V x I_{dsr} x R_{th}	-	-	80	°C

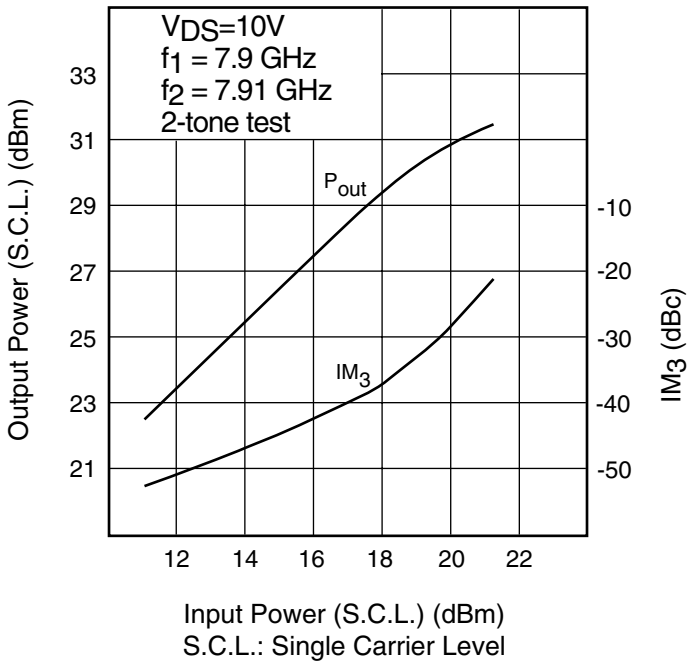
CASE STYLE: IB

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

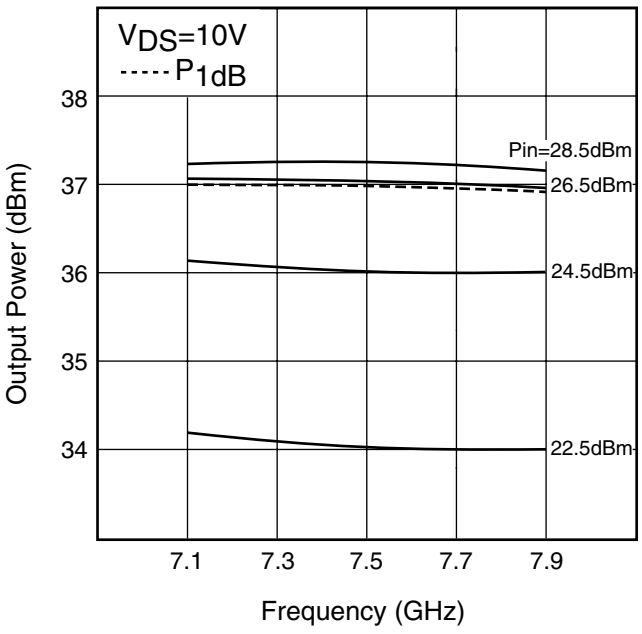
POWER DERATING CURVE



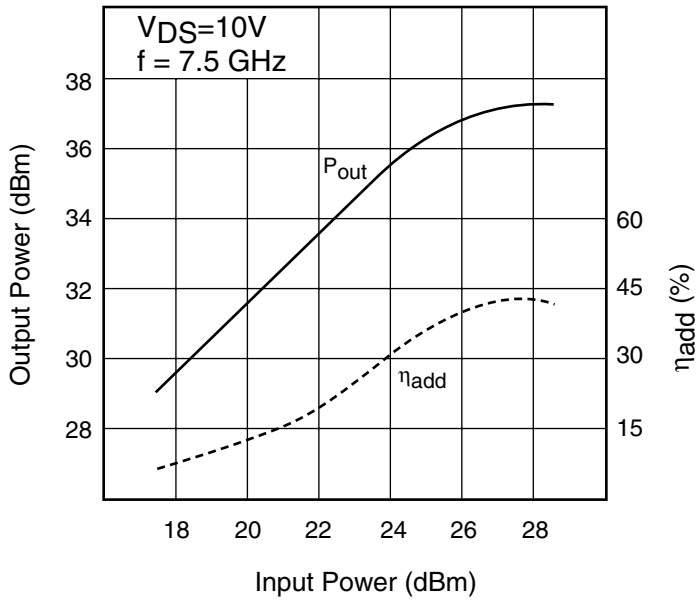
OUTPUT POWER & IM3 vs. INPUT POWER

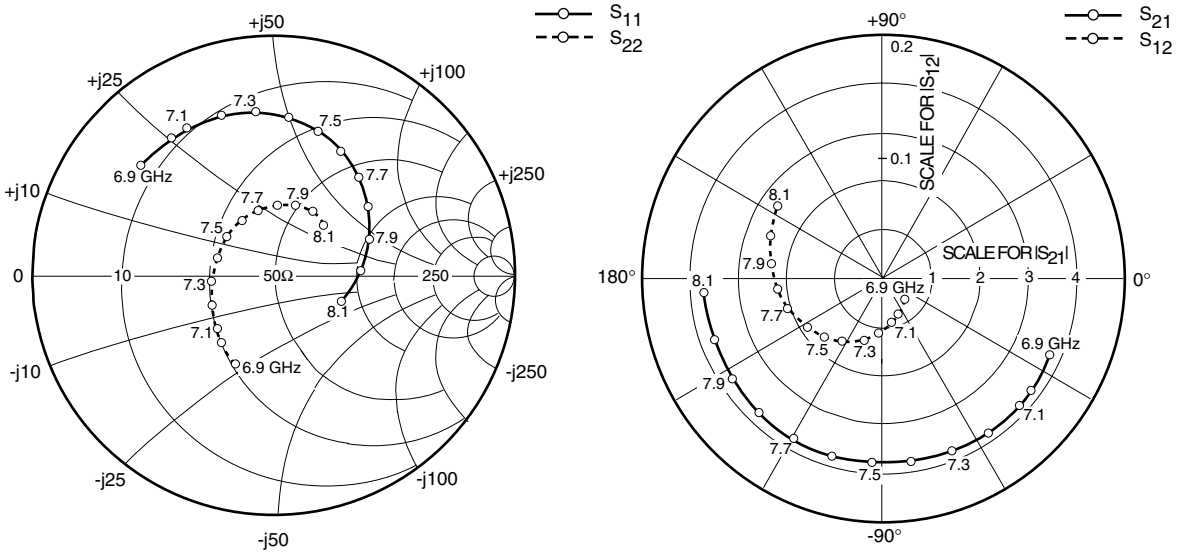


OUTPUT POWER vs. FREQUENCY



OUTPUT POWER vs. INPUT POWER





S-PARAMETERS

V_{DS} = 10V, I_{DS} = 1100mA

FREQUENCY	S11		S21		S12		S22	
(MHZ)	MAG	ANG	MAG	ANG	MAG	ANG	MAG	ANG
6900	.712	140.3	3.823	-24.3	.025	-45.8	.402	-113.7
7000	.714	127.0	3.840	-37.1	.032	-67.6	.354	-127.8
7100	.710	120.5	3.850	-42.7	.036	-77.9	.324	-136.3
7200	.701	108.1	3.852	-55.5	.045	-93.2	.288	-154.2
7300	.684	96.2	3.831	-68.0	.053	-106.9	.259	-175.1
7400	.658	84.6	3.820	-80.9	.061	-122.3	.249	162.0
7500	.625	73.0	3.804	-93.5	.068	-135.6	.251	140.4
7600	.584	61.4	3.783	-106.3	.075	-148.9	.262	120.3
7700	.535	49.2	3.768	-119.4	.082	-162.2	.275	102.2
7800	.481	36.1	3.756	-132.6	.088	-174.2	.295	86.7
7900	.421	20.8	3.744	-146.1	.093	172.4	.307	72.3
8000	.359	2.3	3.726	-160.0	.100	159.7	.305	59.4
8100	.300	-22.5	3.708	-174.9	.106	145.5	.293	45.9