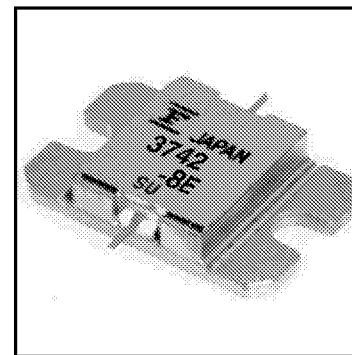


FEATURES

- High Output Power: $P_{1dB} = 39dBm$ (Typ.)
- High Gain: $G_{1dB} = 11dB$ (Typ.)
- High PAE: $\eta_{add} = 33%$ (Typ.)
- Low $IM_3 = -45dBc@Po = 28dBm$
- Broad Band: 3.7 ~ 4.2GHz
- Impedance Matched $Z_{in}/Z_{out} = 50\Omega$



DESCRIPTION

The FLM3742-8E is a power GaAs FET that is internally matched for standard communication bands to provide optimum power and gain in a 50 ohm system.

Fujitsu's stringent Quality Assurance Program assures the highest reliability and consistent performance.

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

Item	Symbol	Condition	Rating	Unit
Drain-Source Voltage	V_{DS}		15	V
Gate-Source Voltage	V_{GS}		-5	V
Total Power Dissipation	P_T	$T_C = 25^\circ C$	42.8	W
Storage Temperature	T_{stg}		-65 to +175	$^\circ C$
Channel Temperature	T_{ch}		175	$^\circ C$

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 -4.4 mA respectively with gate resistance of 100 Ω .

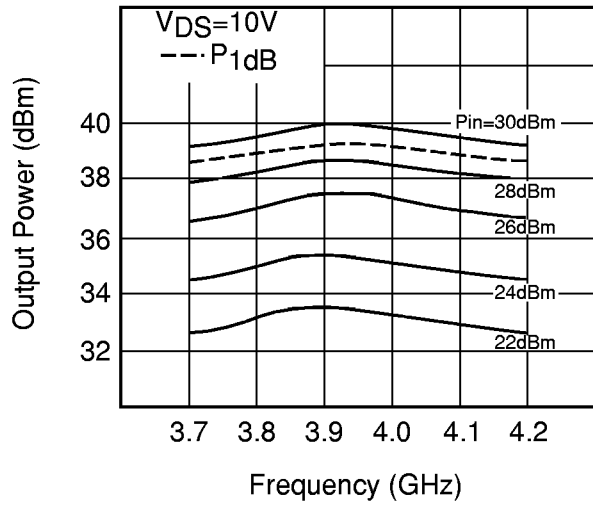
ELECTRICAL CHARACTERISTICS (Ambient Temperature $T_a=25^\circ C$)

Item	Symbol	Test Conditions	Limit			Unit
			Min.	Typ.	Max.	
Saturated Drain Current	I_{DSS}	$V_{DS} = 5V, V_{GS} = 0V$	-	3600	5400	mA
Transconductance	g_m	$V_{DS} = 5V, I_{DS} = 2200mA$	-	2000	-	mS
Pinch-off Voltage	V_p	$V_{DS} = 5V, I_{DS} = 180mA$	-1.0	-2.0	-3.5	V
Gate Source Breakdown Voltage	V_{GSO}	$I_{GS} = -180\mu A$	-5	-	-	V
Output Power at 1dB G.C.P.	P_{1dB}	$V_{DS} = 10V,$ $I_{DS} = 0.6 I_{DSS}$ (Typ.), $f = 3.7 \sim 4.2$ GHz, $Z_S = Z_L = 50$ ohm	38	39	-	dBm
Power Gain at 1dB G.C.P.	G_{1dB}		10	11	-	dB
Drain Current	I_{dsr}		-	2200	2600	mA
Power-added Efficiency	η_{add}		-	33	-	%
Gain Flatness	ΔG		-	-	± 0.6	dB
3rd Order Intermodulation Distortion	IM_3	$f = 4.2$ GHz, $\Delta f = 10$ MHz 2-Tone Test $P_{out} = 28dBm$ S.C.L.	-42	-45	-	dBc
Thermal Resistance	R_{th}	Channel to Case	-	3.0	3.5	$^\circ C/W$

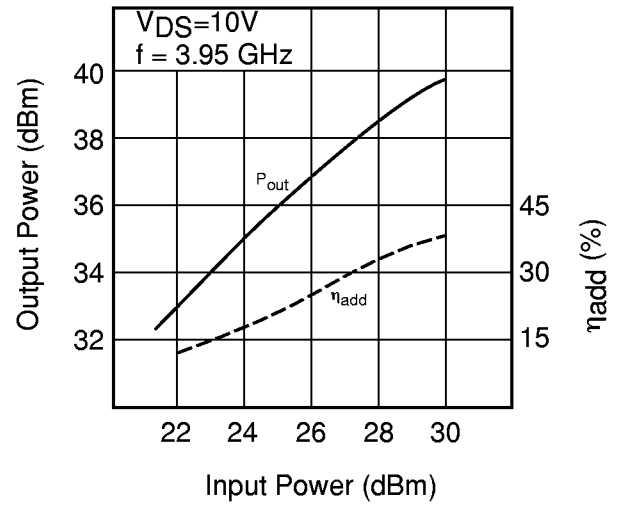
CASE STYLE: IB

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

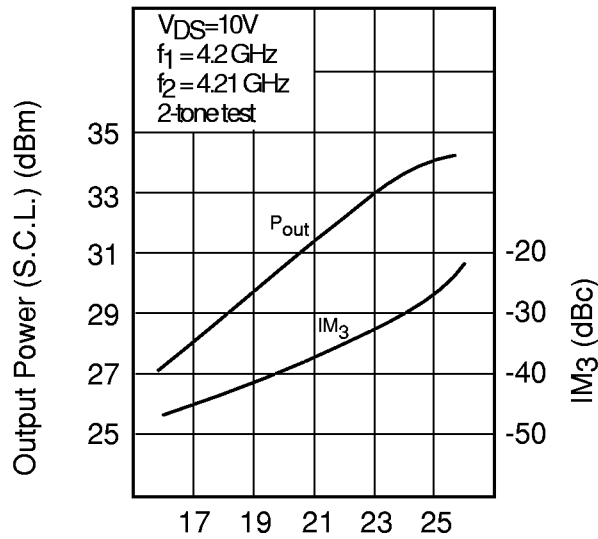
OUTPUT POWER vs. FREQUENCY



OUTPUT POWER vs. INPUT POWER



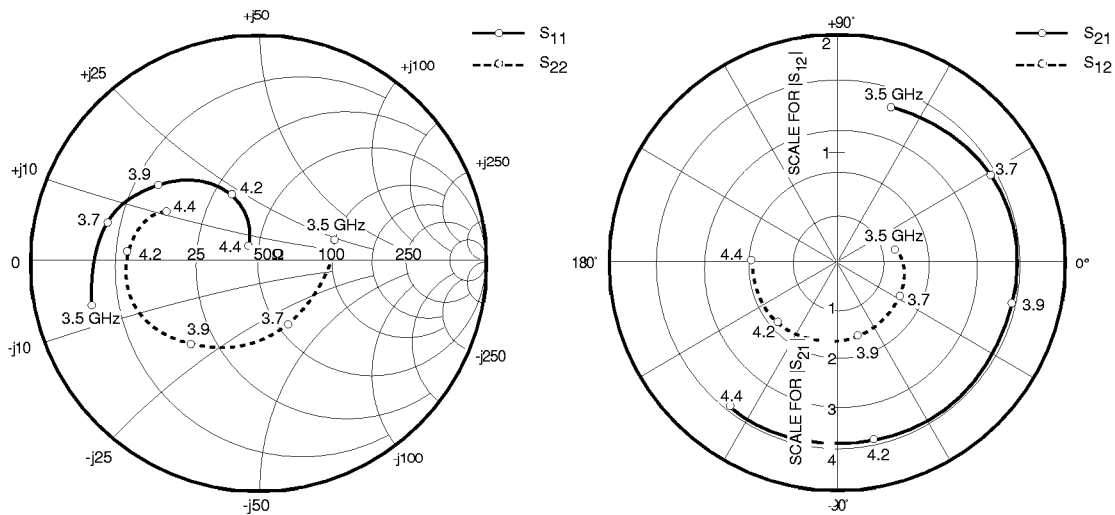
OUTPUT POWER & IM₃ vs. INPUT POWER



Input Power (S.C.L.) (dBm)
S.C.L.: Single Carrier Level

FLM3742-8E

Internally Matched Power GaAs FETs



S-PARAMETERS

$V_{DS} = 10V, I_{DS} = 2200mA$

FREQUENCY (MHZ)	S11		S21		S12		S22	
	MAG	ANG	MAG	ANG	MAG	ANG	MAG	ANG
3500	.743	-165.8	3.624	72.3	.050	12.5	.353	15.6
3600	.719	179.3	3.748	51.8	.055	-8.1	.298	-19.1
3700	.677	166.1	3.853	30.6	.058	-28.9	.301	-61.4
3800	.623	154.3	3.909	9.0	.062	-51.7	.371	-99.0
3900	.560	144.1	3.914	-12.8	.064	-73.1	.459	-127.4
4000	.491	134.3	3.909	-34.3	.067	-94.0	.532	-149.8
4100	.415	124.2	3.893	-56.0	.070	-115.2	.571	-168.7
4200	.321	113.5	3.917	-77.9	.073	-136.2	.577	175.6
4300	.205	103.9	3.948	-101.3	.076	-158.8	.538	162.3
4400	.075	121.1	3.962	-126.3	.078	177.1	.460	152.5

Case Style "IB"
Metal-Ceramic Hermetic Package

