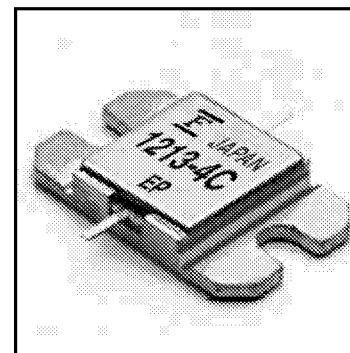


FLM1213-4C

Internally Matched Power GaAs FETs

FEATURES

- High Output Power: $P_{1dB} = 35.5\text{dBm}$ (Typ.)
- High Gain: $G_{1dB} = 5.0\text{dB}$ (Typ.)
- High PAE: $\eta_{add} = 22\%$ (Typ.)
- Broad Band: 12.7 ~ 13.2GHz
- Impedance Matched $Z_{in}/Z_{out} = 50\Omega$
- Hermetically Sealed



DESCRIPTION

The FLM1213-4C 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 $T_a=25^\circ\text{C}$)

Item	Symbol	Condition	Rating	Unit
Drain-Source Voltage	V_{DS}		15	V
Gate-Source Voltage	V_{GS}		-5	V
Total Power Dissipation	P_T	$T_C = 25^\circ\text{C}$	25	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 8.0 and -2.2 mA respectively with gate resistance of 100 Ω .

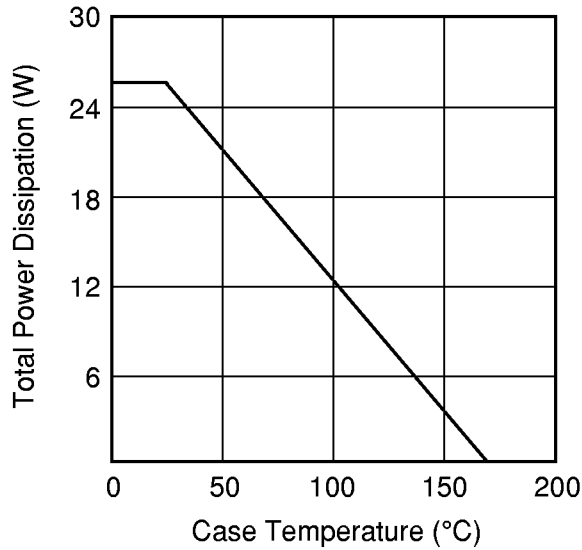
ELECTRICAL CHARACTERISTICS (Ambient Temperature $T_a=25^\circ\text{C}$)

Item	Symbol	Test Conditions	Limit			Unit
			Min.	Typ.	Max.	
Saturated Drain Current	I_{DSS}	$V_{DS} = 5\text{V}, V_{GS} = 0\text{V}$	-	1800	2700	mA
Transconductance	g_m	$V_{DS} = 5\text{V}, I_{DS} = 1100\text{mA}$	-	1000	-	mS
Pinch-off Voltage	V_p	$V_{DS} = 5\text{V}, I_{DS} = 90\text{mA}$	-1.0	-2.0	-3.5	V
Gate Source Breakdown Voltage	V_{GSO}	$I_{GS} = -90\mu\text{A}$	-5	-	-	V
Output Power at 1dB G.C.P.	P_{1dB}	$V_{DS} = 10\text{V},$ $I_{DS} = 0.6 I_{DSS}$ (Typ.), $f = 12.7 \sim 13.2 \text{GHz},$ $Z_S = Z_L = 50 \text{ohm}$	34.5	35.5	-	dBm
Power Gain at 1dB G.C.P.	G_{1dB}		4.0	5.0	-	dB
Drain Current	I_{dsr}		-	1100	1300	mA
Power-added Efficiency	η_{add}		-	22	-	%
Thermal Resistance	R_{th}	Channel to Case	-	5	6	$^\circ\text{C/W}$

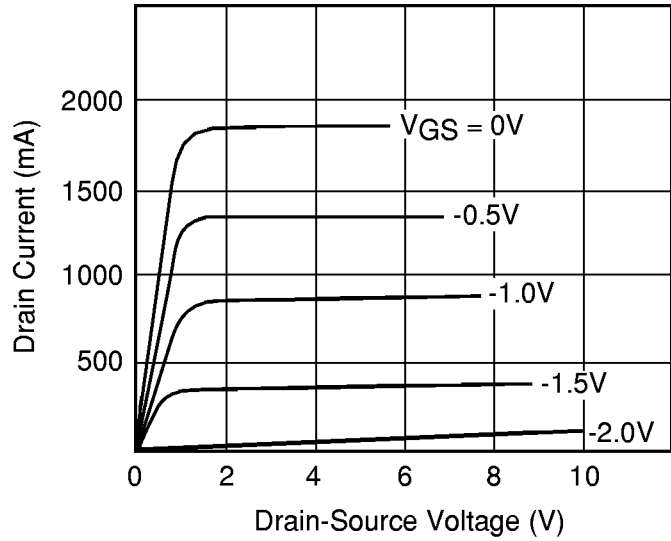
CASE STYLE: IA

G.C.P.: Gain Compression Point

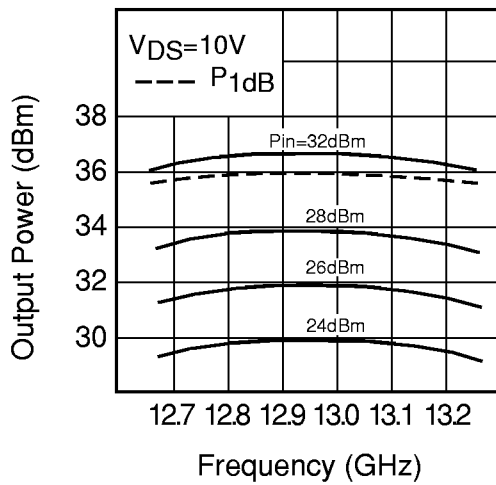
POWER DERATING CURVE



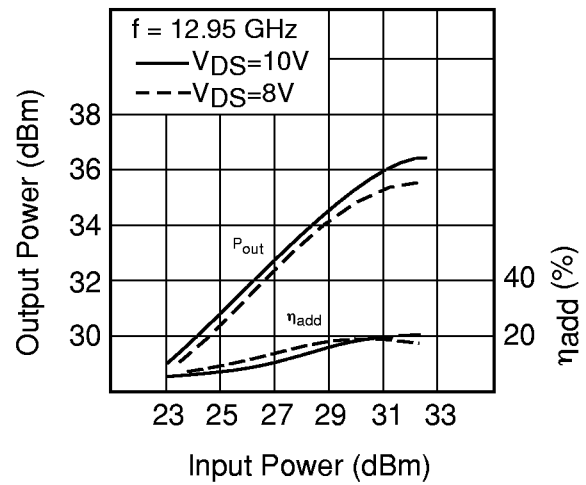
DRAIN CURRENT vs. DRAIN-SOURCE VOLTAGE

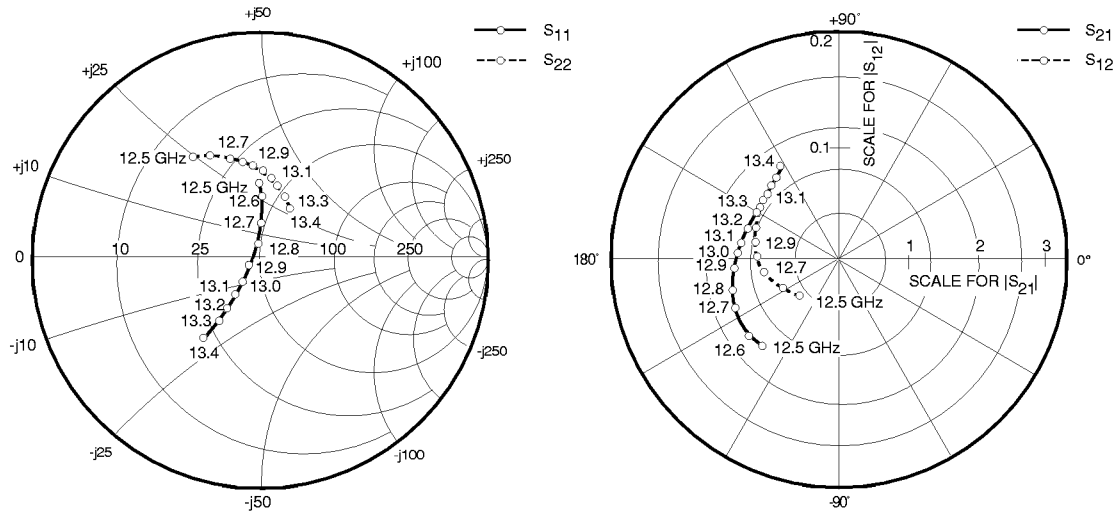


OUTPUT POWER vs. FREQUENCY



OUTPUT POWER vs. INPUT POWER





S-PARAMETERS

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

FREQUENCY (MHZ)	S11		S21		S12		S22	
	MAG	ANG	MAG	ANG	MAG	ANG	MAG	ANG
12500	.34	89	1.63	-131	.05	-142	.57	123
12600	.25	83	1.70	-141	.06	-156	.55	115
12700	.15	79	1.69	-156	.07	-172	.50	108
12800	.05	87	1.66	-167	.07	176	.46	101
12900	.06	-144	1.60	-178	.08	165	.42	93
13000	.14	-132	1.52	173	.08	155	.40	88
13100	.22	-131	1.48	166	.08	147	.37	82
13200	.30	-128	1.49	159	.09	141	.35	76
13300	.38	-128	1.49	149	.09	129	.31	67
13400	.46	-129	1.52	141	.10	122	.26	56

Case Style "IA"
Metal-Ceramic Hermetic Package

