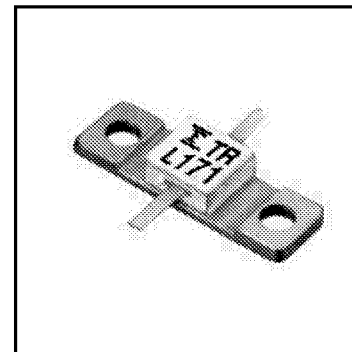


FEATURES

- High Output Power: $P_{1dB}=32.5\text{dBm}$ (Typ.)
- High Gain: $G_{1dB}=12.5\text{dB}$ (Typ.)
- High PAE: $\eta_{add}=46\%$ (Typ.)
- Proven Reliability
- Hermetically Sealed Package

DESCRIPTION

The FLL171ME is a Power GaAs FET that is specifically designed to provide high power at L-Band frequencies with gain, linearity and efficiency superior to that of silicon devices. The performance in multitone environments for Class AB operation make them ideally suited for base station applications. This device is assembled in hermetic metal/ceramic package.



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	$T_c = 25^\circ\text{C}$	7.5	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 2.0 and -1.0 mA respectively with gate resistance of 200Ω .

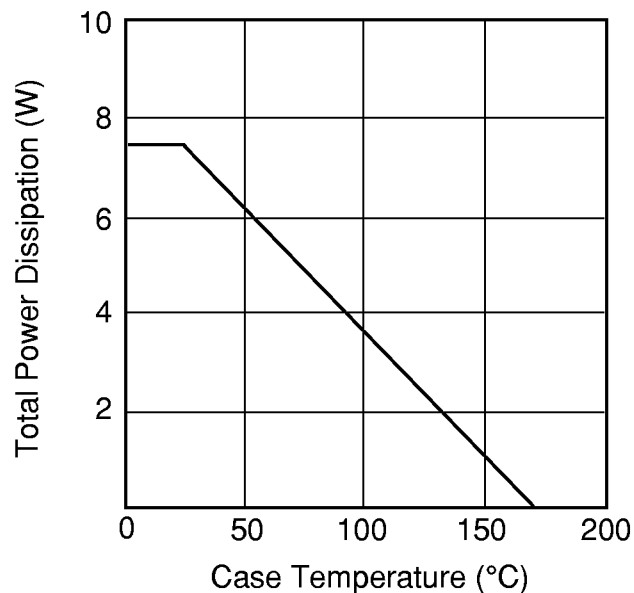
ELECTRICAL CHARACTERISTICS (Ambient Temperature $T_a=25^\circ\text{C}$)

Item	Symbol	Test Conditions	Limit			Unit
			Min.	Typ.	Max.	
Saturated Drain Current	I_{DSS}	$V_{DS} = 5\text{V}, V_{GS} = 0\text{V}$	-	600	900	mA
Transconductance	g_m	$V_{DS} = 5\text{V}, I_{DS} = 400\text{mA}$	-	300	-	mS
Pinch-off Voltage	V_p	$V_{DS} = 5\text{V}, I_{DS} = 30\text{mA}$	-1.0	-2.0	-3.5	V
Gate Source Breakdown Voltage	V_{GSO}	$I_{GS} = -30\mu\text{A}$	-5	-	-	V
Output Power at 1dB G.C.P.	P_{1dB}	$V_{DS} = 10\text{V}$ $I_{DS} \approx 0.6I_{DSS}$ (Typ.), $f = 2.3\text{GHz}$	31.5	32.5	-	dBm
Power Gain at 1dB G.C.P.	G_{1dB}		11.5	12.5	-	dB
Power-added Efficiency	η_{add}		-	46	-	%
Thermal Resistance	R_{th}	Channel to Case	-	15	20	$^\circ\text{C/W}$

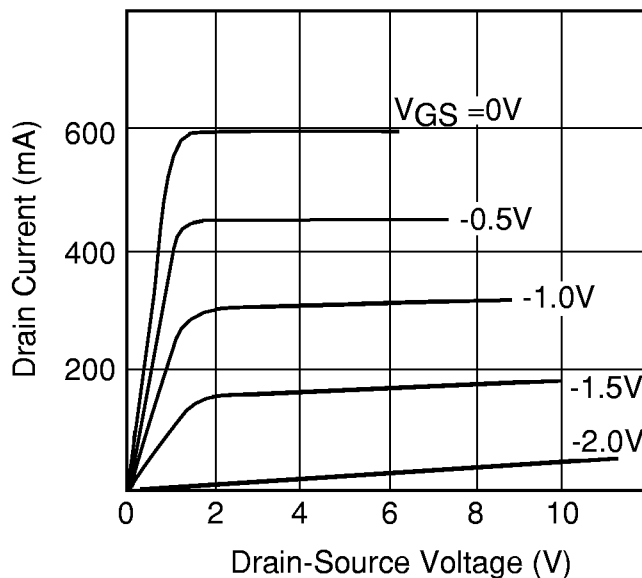
CASE STYLE: ME

G.C.P.: Gain Compression Point

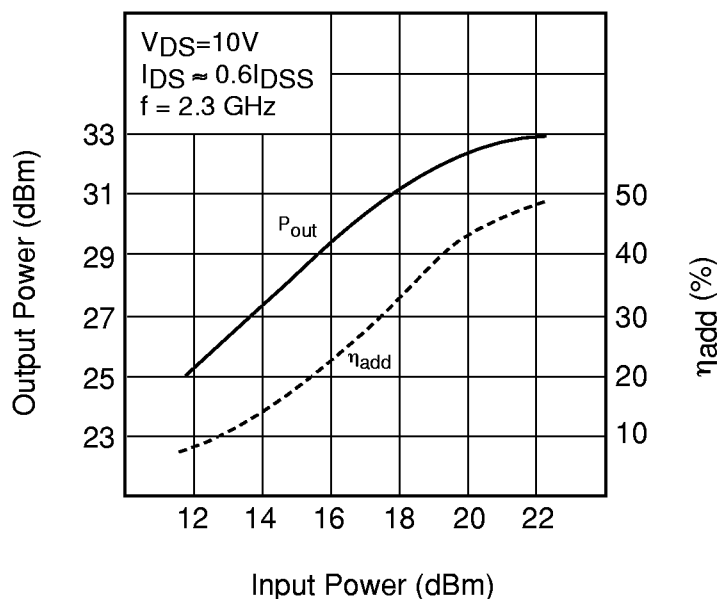
POWER DERATING CURVE



DRAIN CURRENT vs. DRAIN-SOURCE VOLTAGE



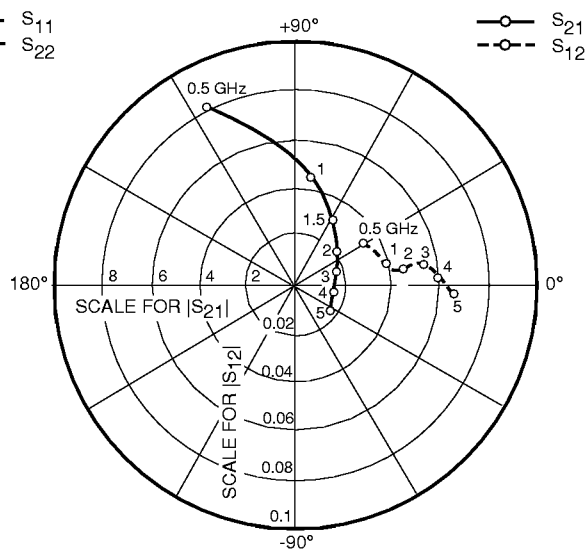
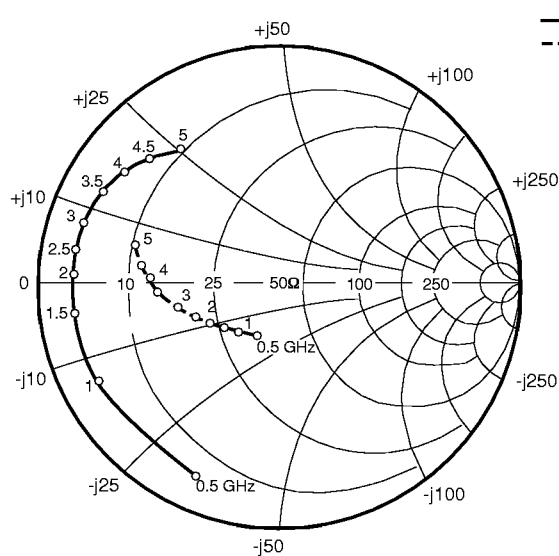
OUTPUT POWER vs. INPUT POWER



FLL171ME

L-Band Medium & High Power GaAs FETs

FUJITSU



S-PARAMETERS

$V_{DS} = 10V, I_{DS} = 360mA$

FREQUENCY (MHZ)	S11		S21		S12		S22	
	MAG	ANG	MAG	ANG	MAG	ANG	MAG	ANG
100	.982	-37.4	14.143	157.3	.014	65.7	.171	-46.2
500	.844	-112.0	8.154	114.0	.033	32.4	.227	-116.1
1000	.861	-151.1	4.713	82.4	.038	15.8	.283	-139.7
1500	.863	-169.2	3.265	62.2	.040	10.4	.330	-149.0
2000	.859	178.7	2.511	45.7	.040	8.7	.378	-156.1
2500	.855	169.5	2.075	31.1	.041	8.5	.427	-162.4
3000	.847	161.2	1.794	17.1	.044	9.8	.475	-169.2
3500	.832	152.9	1.608	3.2	.047	9.7	.519	-176.3
4000	.811	144.6	1.495	-10.4	.053	7.5	.561	-176.9
4500	.781	135.7	1.440	-24.5	.059	2.7	.601	170.2
5000	.732	125.1	1.436	-39.7	.067	-4.1	.639	164.1

Case Style "ME"
Metal-Ceramic Hermetic Package

