

FLL351ME

L-Band Medium & High Power GaAs FETs

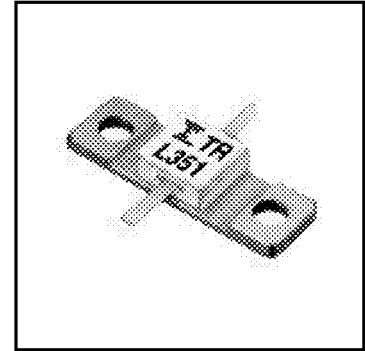
FUJITSU

FEATURES

- High Output Power: $P_{1dB}=35.5dBm$ (Typ.)
- High Gain: $G_{1dB}=11.5dB$ (Typ.)
- High PAE: $\eta_{add}=46\%$ (Typ.)
- Proven Reliability
- Hermetically Sealed Package

DESCRIPTION

The FLL351ME 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 $T_a=25^\circ C$)

Item	Symbol	Condition	Rating	Unit
Drain-Source Voltage	V_{DS}		15	V
Gate-Source Voltage	V_{GS}		-5	V
Total Power Dissipation	P_{tot}	$T_C = 25^\circ C$	15	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 4.0 and -2.0 mA respectively with gate resistance of 100 Ω .

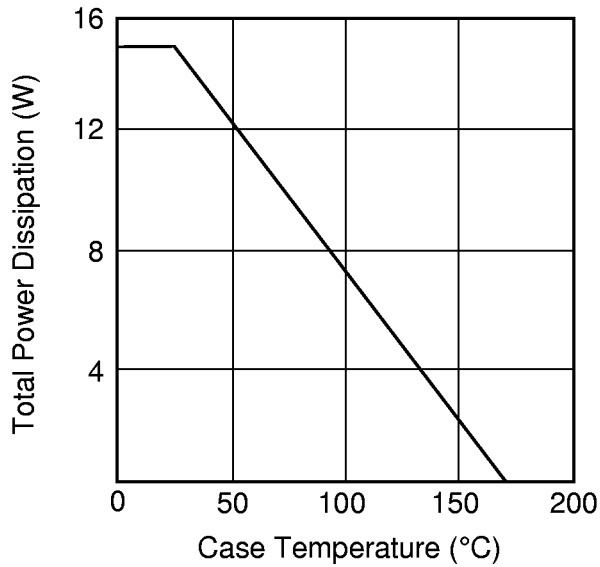
ELECTRICAL CHARACTERISTICS (Ambient Temperature $T_a=25^\circ C$)

Item	Symbol	Test Conditions	Limit			Unit
			Min.	Typ.	Max.	
Saturated Drain Current	I_{DSS}	$V_{DS} = 5V, V_{GS} = 0V$	-	1200	1800	mA
Transconductance	g_m	$V_{DS} = 5V, I_{DS} = 800mA$	-	600	-	mS
Pinch-off Voltage	V_p	$V_{DS} = 5V, I_{DS} = 60mA$	-1.0	-2.0	-3.5	V
Gate Source Breakdown Voltage	V_{GSO}	$I_{GS} = -60\mu A$	-5	-	-	V
Output Power at 1dB G.C.P.	P_{1dB}	$V_{DS} = 10V$ $I_{DS} \approx 0.6I_{DSS}$ (Typ.), $f = 2.3GHz$	34.5	35.5	-	dBm
Power Gain at 1dB G.C.P.	G_{1dB}		10.5	11.5	-	dB
Power-added Efficiency	η_{add}		-	46	-	%
Thermal Resistance	R_{th}	Channel to Case	-	7.5	10	$^\circ C/W$

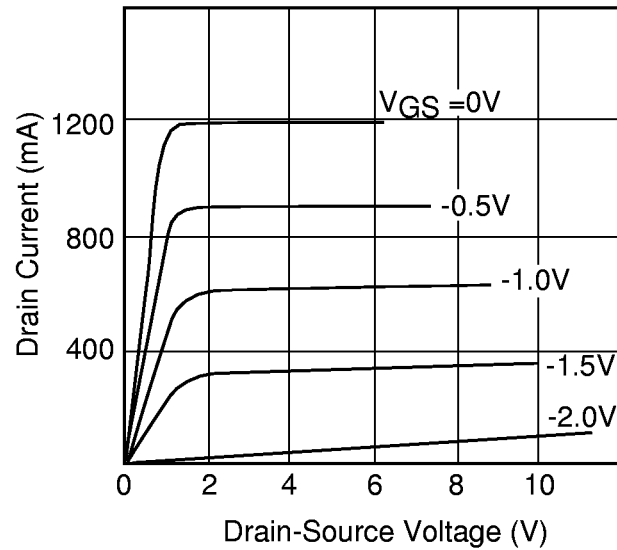
CASE STYLE: ME

G.C.P.: Gain Compression Point

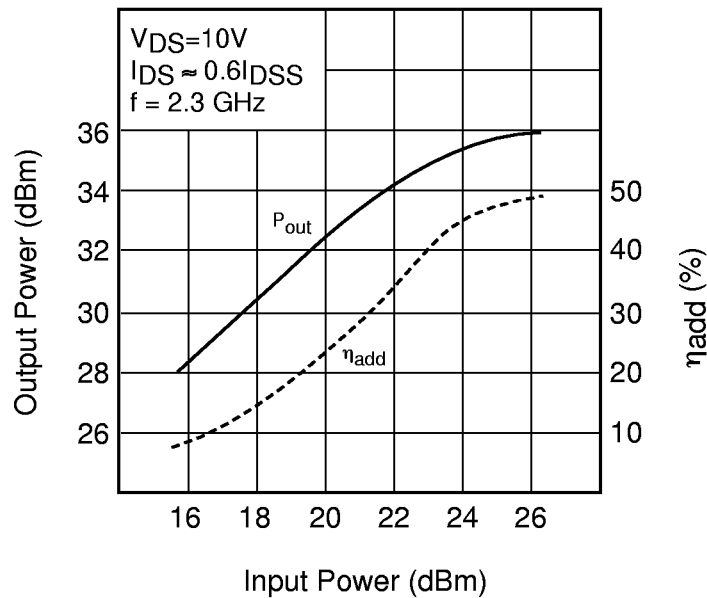
POWER DERATING CURVE

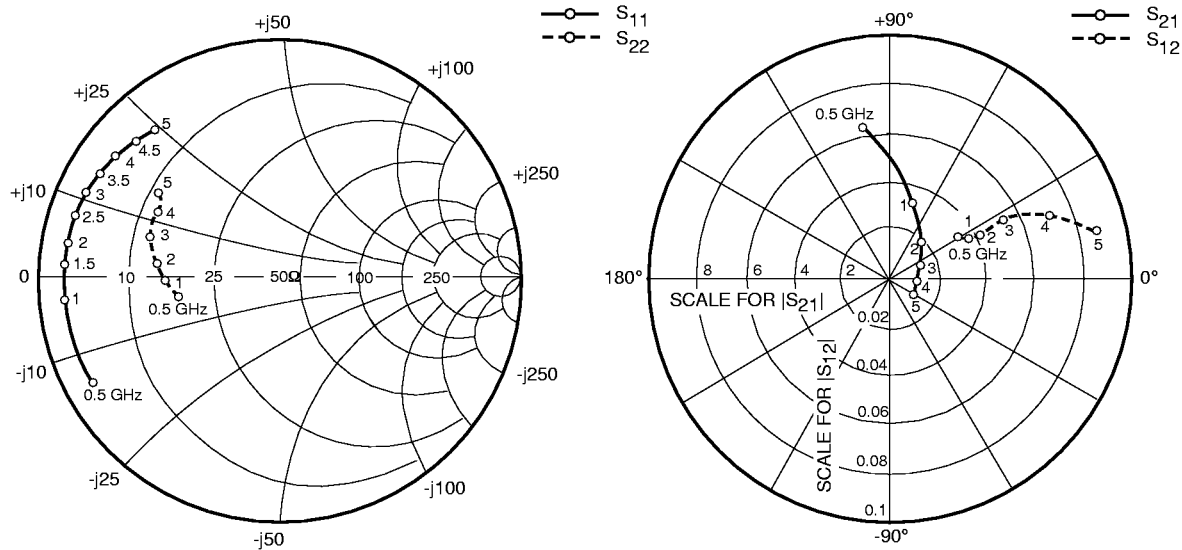


DRAIN CURRENT vs. DRAIN-SOURCE VOLTAGE



OUTPUT POWER vs. INPUT POWER





S-PARAMETERS

$V_{DS} = 10V$, $I_{DS} = 720mA$

FREQUENCY (MHZ)	S ₁₁		S ₂₁		S ₁₂		S ₂₂	
	MAG	ANG	MAG	ANG	MAG	ANG	MAG	ANG
100	.964	-72.8	17.142	139.4	.019	53.9	.326	-151.5
500	.879	-147.5	6.495	98.1	.030	25.4	.479	-170.8
1000	.899	-172.3	3.237	73.2	.033	20.7	.511	-179.5
1500	.902	176.6	2.174	56.9	.037	23.0	.532	175.4
2000	.901	168.3	1.652	42.8	.040	25.3	.554	170.7
2500	.899	161.5	1.352	30.1	.047	26.8	.577	166.3
3000	.895	155.1	1.156	17.6	.054	27.6	.602	161.2
3500	.888	148.4	1.017	5.5	.062	24.8	.615	155.1
4000	.879	141.8	.920	-5.7	.071	21.3	.621	149.5
4500	.869	134.6	.867	-15.5	.079	15.3	.615	147.4
5000	.850	126.6	.858	-27.2	.088	12.3	.659	143.9

Case Style "ME"
Metal-Ceramic Hermetic Package

