

FLR016FH

K-Band Power GaAs FETs

ABSOLUTE MAXIMUM RATINGS (Ambient Temperature $T_a = 25^\circ\text{C}$)

Item	Symbol	Condition	Rating	Unit
Drain-Source Voltage	V_{DS}		13	V
Gate-Source Voltage	V_{GS}		-3	V
Total Power Dissipation	P_T	$T_C=25^\circ\text{C}$	1.15	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:

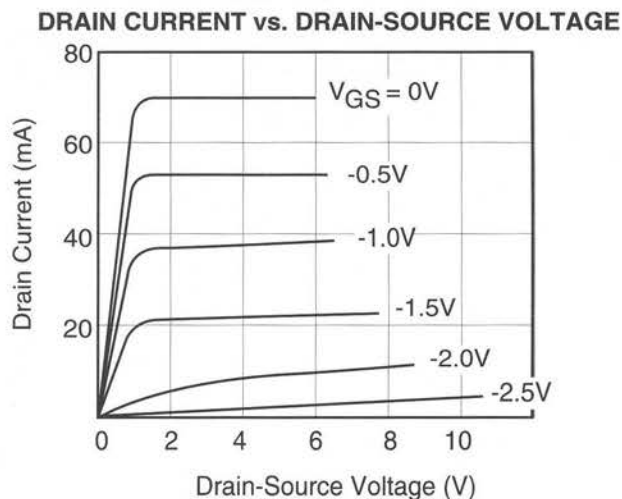
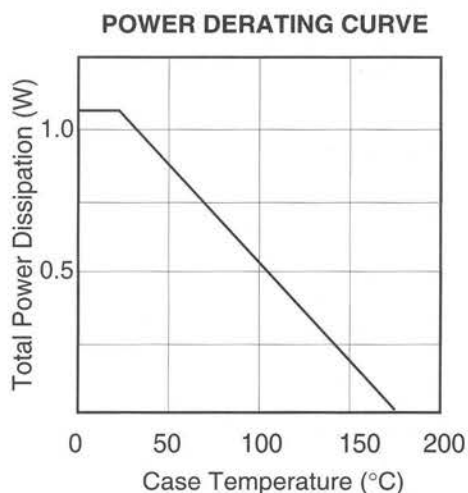
1. The drain - source operating voltage (V_{DS}) should not exceed 10 volts.
2. The forward and reverse gate currents should not exceed 0.25 and -0.05 mA respectively with gate resistance of 3000 Ω .

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

Item	Symbol	Test Conditions	Limit			Unit
			Min.	Typ.	Max.	
Saturated Drain Current	I_{DSS}	$V_{DS} = 3\text{V}, V_{GS} = 0\text{V}$	-	70	90	mA
Transconductance	g_m	$V_{DS} = 3\text{V}, I_{DS} = 40\text{mA}$	-	30	-	mS
Pinch-off Voltage	V_p	$V_{DS} = 3\text{V}, I_{DS} = 3\text{mA}$	-1.0	-2.0	-3.5	V
Gate -Source Breakdown Voltage	V_{GSO}	$I_{GS} = -3\ \mu\text{A}$	-3	-	-	V
Output Power at 1dB G.C.P.	P_{1dB}	$V_{DS} = 8\text{V},$ $I_{DS} = 0.6 I_{DSS} (\text{Typ.})$ $f = 18\ \text{GHz}$	19	20	-	dBm
Power Gain at 1dB G.C.P.	G_{1dB}		7.5	8.5	-	dB
Power added Efficiency	η_{add}		-	26	-	%
Thermal Resistance	R_{th}	Channel to Case	-	120	150	$^\circ\text{C/W}$

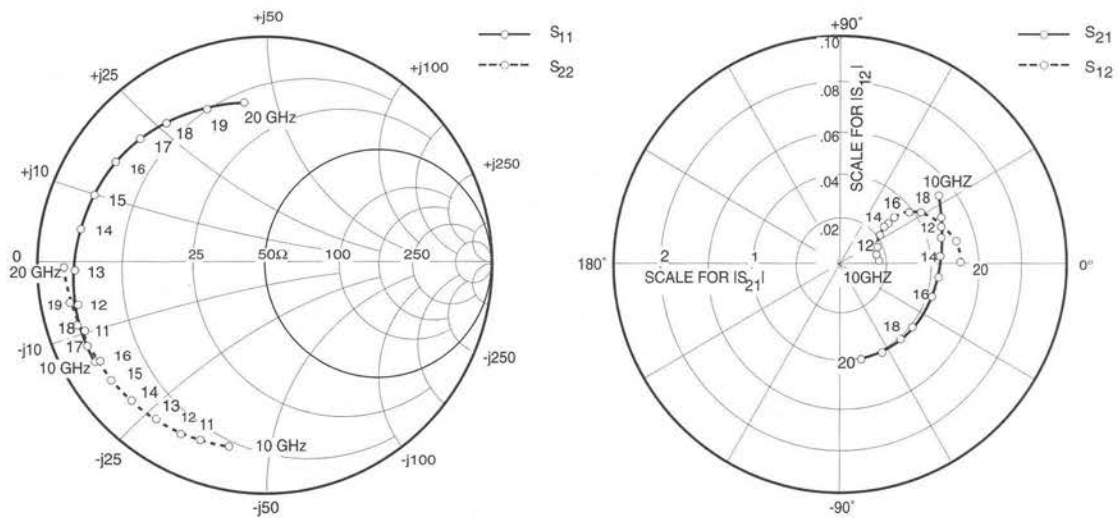
CASE STYLE: FH

G.C.P: Gain Compression Point



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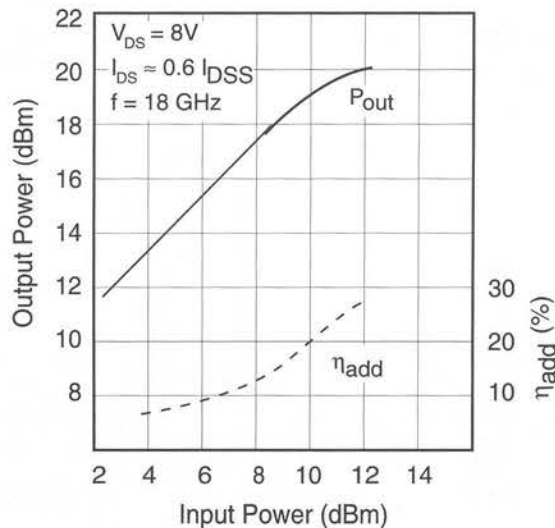
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S-PARAMETERS
 $V_{DS} = 8V, I_{DS} = 36mA$

FREQUENCY (MHz)	S ₁₁		S ₂₁		S ₁₂		S ₂₂	
	MAG	ANG	MAG	ANG	MAG	ANG	MAG	ANG
10000	.870	-149.9	1.294	34.4	.018	8.0	.810	-103.6
11000	.863	-159.0	1.212	24.3	.016	17.4	.822	-110.8
12000	.852	-168.1	1.170	14.8	.018	28.3	.832	-116.7
13000	.842	-178.5	1.152	3.9	.021	31.9	.837	-124.4
14000	.827	169.5	1.126	-8.4	.025	30.4	.841	-134.0
15000	.813	157.0	1.082	-20.7	.026	29.7	.847	-143.4
16000	.804	145.9	1.038	-31.6	.031	30.4	.858	-150.5
17000	.790	135.8	1.022	-41.3	.039	27.5	.870	-155.7
18000	.769	125.0	1.032	-51.6	.046	19.8	.879	-161.5
19000	.742	112.0	1.050	-64.0	.052	10.1	.885	-169.8
20000	.718	97.3	1.038	-78.2	.056	-0.8	.895	-179.4

OUTPUT POWER vs. INPUT POWER



Case Style "FH" Metal-Ceramic Hermetic Package

