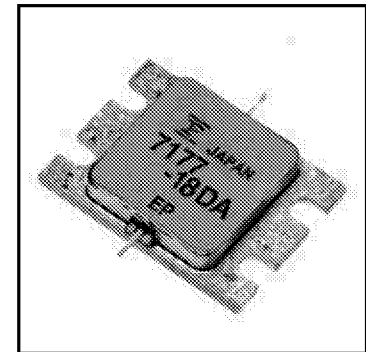


### FEATURES

- High Output Power:  $P_{1dB} = 42.5dBm$  (Typ.)
- High Gain:  $G_{1dB} = 7.5dB$  (Typ.)
- High PAE:  $\eta_{add} = 30%$  (Typ.)
- Low  $IM_3 = -45dBc@P_o = 31.5dBm$
- Broad Band: 7.1 ~ 7.7GHz
- Impedance Matched  $Z_{in}/Z_{out} = 50\Omega$
- Hermetically Sealed Package



### DESCRIPTION

The FLM7177-18DA 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	$P_T$	$T_C = 25^\circ C$	83.3	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 18.0 and -8.4 mA respectively with gate resistance of 25 $\Omega$ .

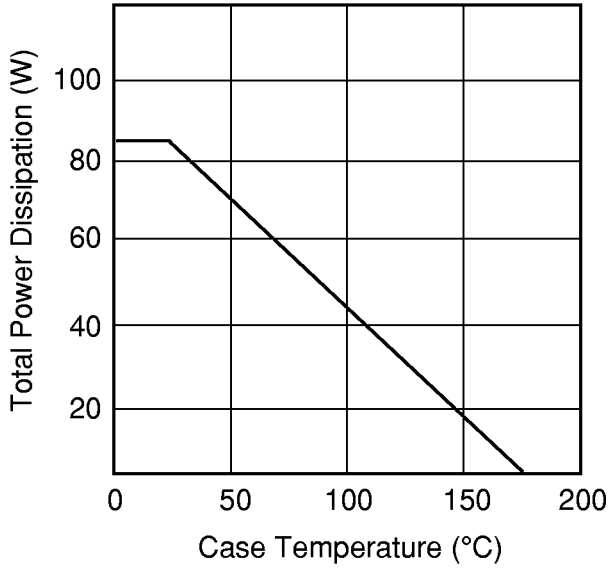
### ELECTRICAL CHARACTERISTICS (Ambient Temperature $T_a=25^\circ C$ )

Item	Symbol	Test Conditions	Limit			Unit
			Min.	Typ.	Max.	
Saturated Drain Current	$I_{DSS}$	$V_{DS} = 5V, V_{GS} = 0V$	-	8.55	12.75	mA
Transconductance	$g_m$	$V_{DS} = 5V, I_{DS} = 5100mA$	-	4350	-	mS
Pinch-off Voltage	$V_p$	$V_{DS} = 5V, I_{DS} = 450mA$	-1.0	-2.0	-3.5	V
Gate Source Breakdown Voltage	$V_{GSO}$	$I_{GS} = -450\mu A$	-5	-	-	V
Output Power at 1dB G.C.P.	$P_{1dB}$	$V_{DS} = 10V,$ $I_{DS} = 0.55 I_{DSS}$ (Typ.), $f = 7.1 \sim 7.7$ GHz, $Z_S = Z_L = 50$ ohm	41.5	42.5	-	dBm
Power Gain at 1dB G.C.P.	$G_{1dB}$		6.5	7.5	-	dB
Drain Current	$I_{dsr}$		-	4700	5800	mA
Power-added Efficiency	$\eta_{add}$		-	30	-	%
Gain Flatness	$\Delta G$		-	-	$\pm 0.6$	dB
3rd Order Intermodulation Distortion	$IM_3$	$f = 7.7$ GHz, $\Delta f = 10$ MHz 2-Tone Test $P_{out} = 31.5dBm$ S.C.L.	-42	-45	-	dBc
Thermal Resistance	$R_{th}$	Channel to Case	-	1.6	1.8	$^\circ C/W$
Channel Temperature Rise	$\Delta T_{ch}$	$10V \times I_{dsr} \times R_{th}$	-	-	80	$^\circ C$

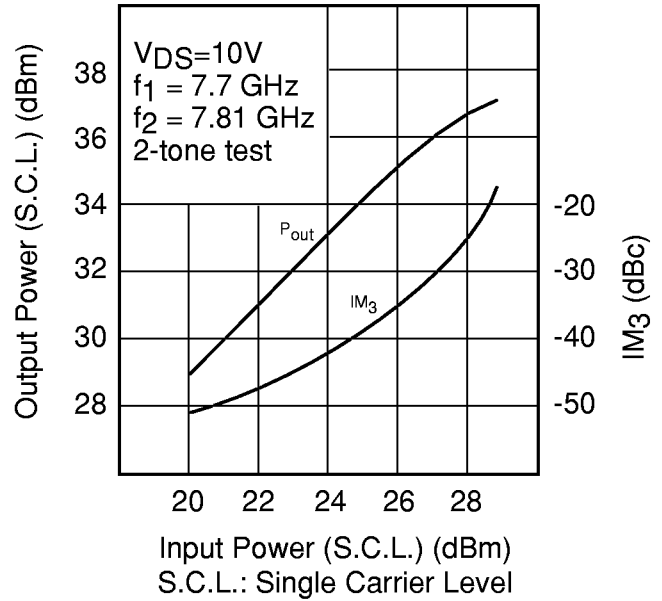
CASE STYLE: IK

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

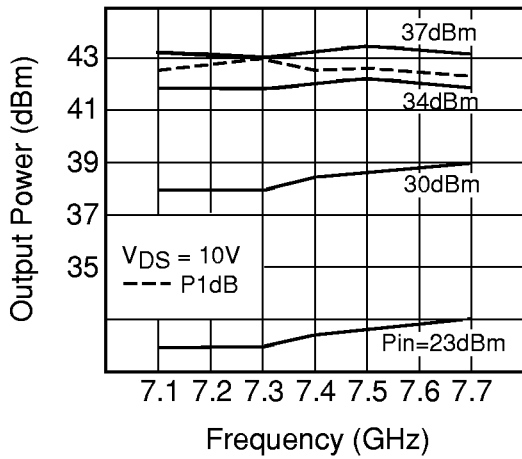
**POWER DERATING CURVE**



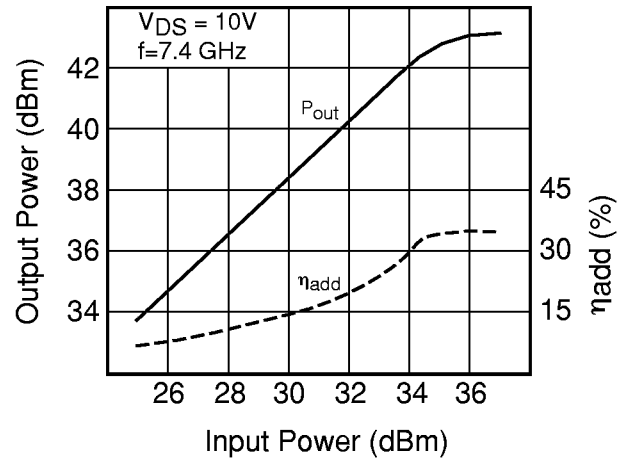
**OUTPUT POWER & IM<sub>3</sub> vs. INPUT POWER**



**OUTPUT POWER vs FREQUENCY**

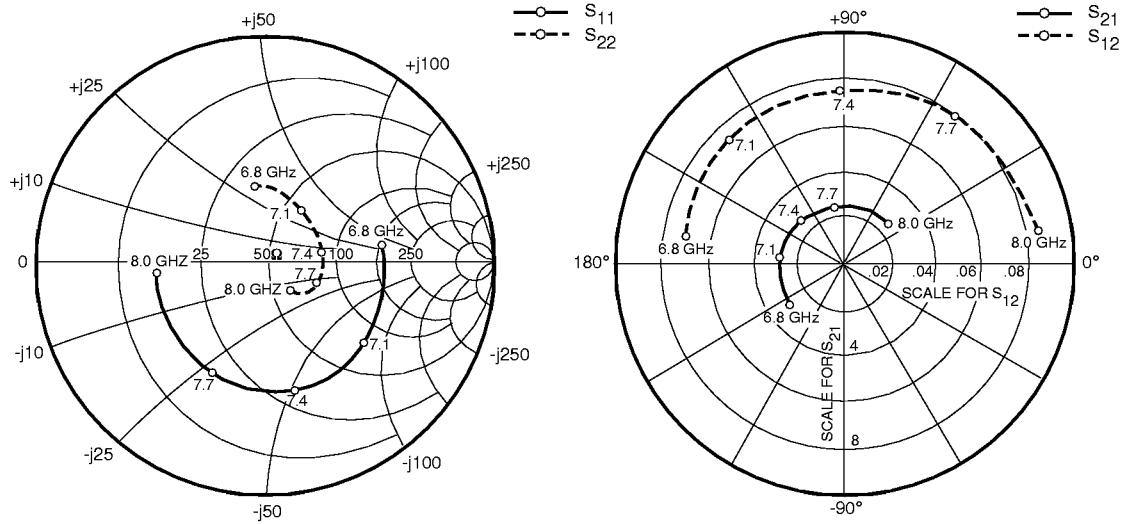


**OUTPUT POWER vs INPUT POWER**



# FLM7177-18DA

## Internally Matched Power GaAs FETs

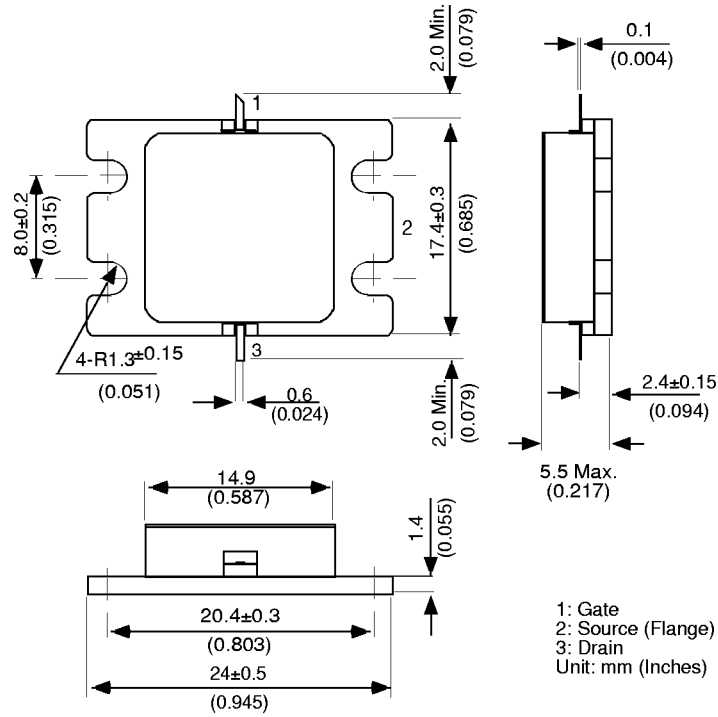


### S-PARAMETERS

$V_{DS} = 10V, I_{DS} = 4800mA$

FREQUENCY (MHZ)	S11		S21		S12		S22	
	MAG	ANG	MAG	ANG	MAG	ANG	MAG	ANG
6800	.528	8.2	2.765	-147.4	.070	168.1	.350	92.9
6900	.537	-10.0	2.724	-161.9	.071	153.8	.324	79.5
7000	.550	-26.7	2.679	-176.2	.073	140.7	.298	65.4
7100	.561	-39.2	2.638	173.5	.074	129.3	.284	56.0
7200	.571	-52.8	2.587	160.0	.075	116.3	.269	41.3
7300	.577	-65.4	2.547	146.6	.075	103.3	.258	25.6
7400	.575	-77.3	2.527	133.2	.077	90.8	.254	11.9
7500	.565	-89.2	2.516	120.1	.077	77.7	.255	-1.4
7600	.550	-101.5	2.523	106.4	.080	65.5	.255	-13.4
7700	.526	-114.9	2.551	92.5	.081	52.0	.251	-23.3
7800	.500	-130.6	2.583	78.2	.083	38.8	.242	-31.7
7900	.474	-149.6	2.595	62.9	.086	24.8	.222	-39.4
8000	.457	-172.7	2.602	46.9	.088	10.1	.183	-43.9

**Case Style "IK"**  
Metal-Ceramic Hermetic Package



2