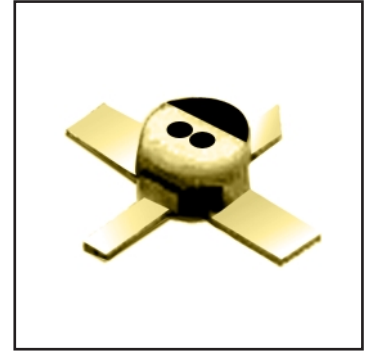


# FSX017LG

## General Purpose GaAs FET

### FEATURES

- Medium Power Output:  $P_{1dB} = 16.0\text{dBm}$  (Typ.)@12.0GHz
- High Power Gain:  $G_{1dB} = 8.0\text{dB}$  (Typ.)@12.0GHz
- Proven Reliability
- Cost Effective Hermetic Microstrip Package
- Tape and Reel Available



### DESCRIPTION

The FSX017LG is a general purpose GaAs FET designed for medium power applications up to 12GHz. These devices have a wide dynamic range and are suitable for use in medium power, wide band, linear drive amplifiers.

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	$V_{DS}$		8	V
Gate-Source Voltage	$V_{GS}$		-5	V
Total Power Dissipation	$P_{tot}$	Note	220	mW
Storage Temperature	$T_{stg}$		-65 to +175	$^\circ\text{C}$
Channel Temperature	$T_{ch}$		175	$^\circ\text{C}$

Note: Mounted on  $\text{Al}_2\text{O}_3$  board (30 x 30 x 0.65mm)

For reliable operation of this FET:

1. The drain - source operating voltage ( $V_{DS}$ ) should not exceed 4 volts.
2. The forward and reverse gate currents should not exceed 0.7 and -0.1 mA respectively with gate resistance of 2000 $\Omega$ .
3. The operating channel temperature ( $T_{ch}$ ) should not exceed 145 $^\circ\text{C}$ .

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

Item	Symbol	Test Conditions	Limit			Unit
			Min.	Typ.	Max.	
Saturated Drain Current	$I_{DSS}$	$V_{DS} = 3\text{V}, V_{GS} = 0\text{V}$	35	55	75	mA
Transconductance	$g_m$	$V_{DS} = 3\text{V}, I_{DS} = 27\text{mA}$	-	50	-	mS
Pinch-off Voltage	$V_p$	$V_{DS} = 3\text{V}, I_{DS} = 2.7\text{mA}$	-0.7	-1.2	-1.7	V
Gate Source Breakdown Voltage	$V_{GSO}$	$I_{GS} = -2.7\mu\text{A}$	-5	-	-	V
Output Power at 1dB G.C.P.	$P_{1dB}$	$V_{DS} = 4\text{V}$ $I_{DS} = 30\text{mA}$ $f = 12\text{GHz}$	15.0	16.0	-	dBm
Power Gain at 1dB G.C.P.	$G_{1dB}$		7.0	8.0	-	dB
Thermal Resistance	$R_{th}$	Channel to Case	-	300	400	$^\circ\text{C}/\text{W}$

### CASE STYLE: LG

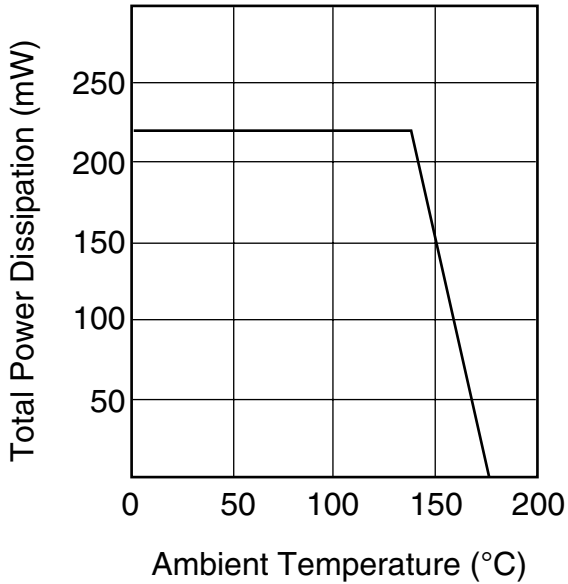
G.C.P.: Gain Compression Point

Note: The RF parameters are measured on a lot basis by sample testing at an AQL = 0.1%, Level-II inspection. Any lot failure shall be 100% retested.

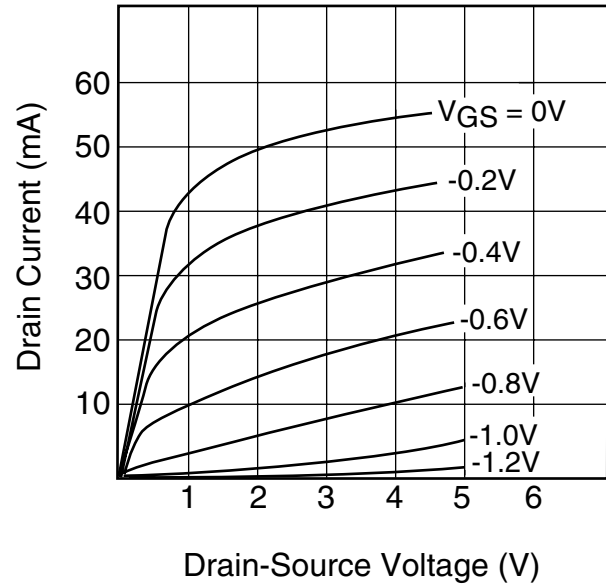
# FSX017LG

General Purpose GaAs FET

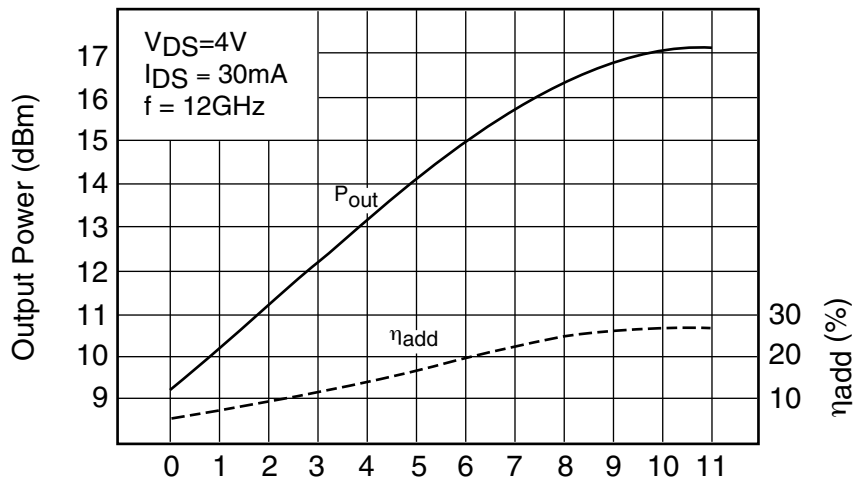
POWER DERATING CURVE



DRAIN CURRENT vs. DRAIN-SOURCE VOLTAGE

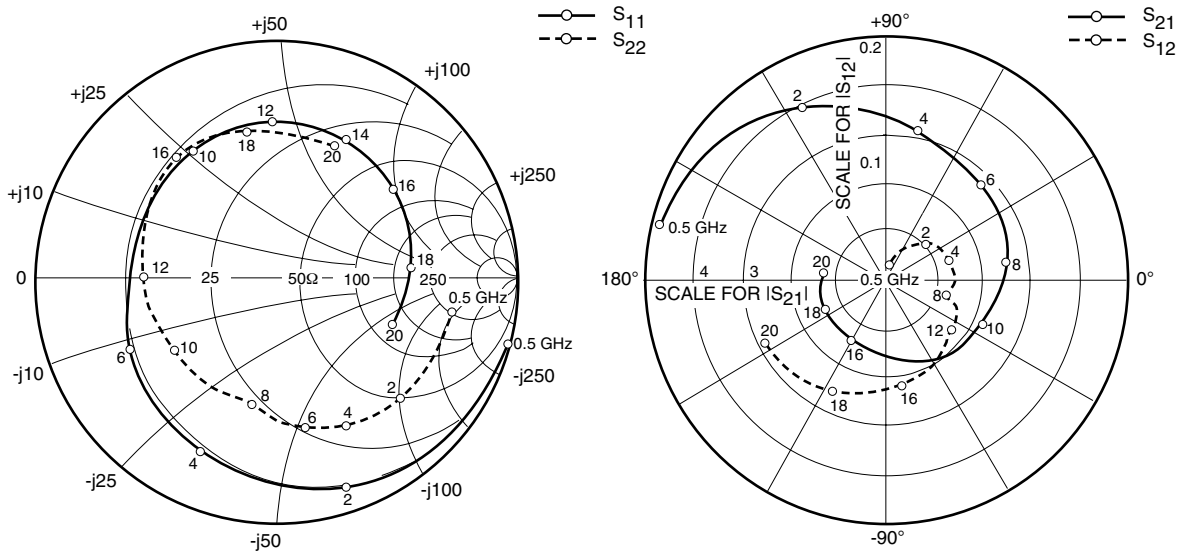


OUTPUT POWER vs. INPUT POWER



# FSX017LG

## General Purpose GaAs FET



### S-PARAMETERS

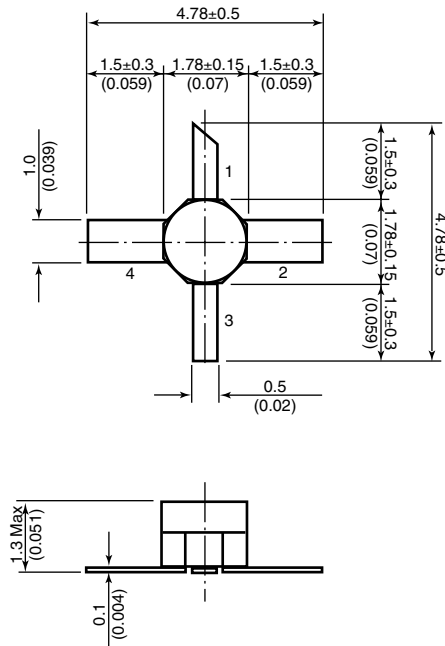
$V_{DS} = 4V, I_{DS} = 30mA$

FREQUENCY (MHZ)	S11		S21		S12		S22	
	MAG	ANG	MAG	ANG	MAG	ANG	MAG	ANG
500	.992	-15.5	4.814	165.8	.012	78.8	.735	-9.5
2000	.915	-58.9	4.244	127.5	.039	51.8	.709	-35.8
4000	.795	-104.8	3.300	86.9	.053	24.1	.670	-60.0
6000	.690	-144.0	2.839	54.1	.054	6.4	.632	-74.7
8000	.606	167.3	2.542	18.1	.052	-13.4	.533	-95.2
10000	.628	130.0	2.237	-16.3	.052	-16.5	.484	-133.0
12000	.655	98.8	1.924	-51.0	.067	-33.2	.544	-173.9
14000	.658	70.8	1.633	-82.5	.075	-51.9	.594	158.0
16000	.630	44.8	1.466	-113.5	.085	-75.4	.650	134.1
18000	.570	14.0	1.394	-147.7	.096	-107.7	.648	109.1
20000	.513	-18.3	1.296	172.6	.112	-151.6	.619	68.1

# FSX017LG

## General Purpose GaAs FET

### Case Style "LG" Metal-Ceramic Hermetic Package



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- Do not alter the form of this product into a gas, powder, or liquid through burning, crushing, or chemical processing as these by-products are dangerous to the human body if inhaled, ingested, or swallowed.
- Observe government laws and company regulations when discarding this product. This product must be discarded in accordance with methods specified by applicable hazardous waste procedures.

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