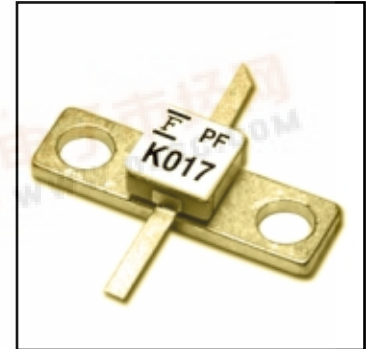


# FLK017WF

## X, Ku Band Power GaAs FET

### FEATURES

- High Output Power:  $P_{1dB} = 20.5\text{dBm(Typ.)}$
- High Gain:  $G_{1dB} = 7.5\text{dB(Typ.)}$
- High PAE:  $\eta_{add} = 26\%(Typ.)$
- Proven Reliability
- Hermetic Metal/Ceramic Package



### DESCRIPTION

The FLK017WF is a power GaAs FET that is designed for general purpose applications in the Ku-Band frequency range as it provides superior power, gain, and efficiency.

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	$P_T$	$T_C = 25^\circ\text{C}$	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 1.34 and -0.05 mA respectively with gate resistance of 3000 $\Omega$ .
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	$I_{DSS}$	$V_{DS} = 5\text{V}, V_{GS} = 0\text{V}$	-	60	90	mA
Transconductance	$g_m$	$V_{DS} = 5\text{V}, I_{DS} = 40\text{mA}$	-	30	-	mS
Pinch-off Voltage	$V_p$	$V_{DS} = 5\text{V}, I_{DS} = 3\text{mA}$	-1.0	-2.0	-3.5	V
Gate Source Breakdown Voltage	$V_{GSO}$	$I_{GS} = -3\mu\text{A}$	-5	-	-	V
Output Power at 1dB G.C.P.	$P_{1dB}$	$V_{DS} = 10\text{V},$ $I_{DS} = 0.6 I_{DSS} (Typ.),$ $f = 14.5 \text{GHz}$	19.5	20.5	-	dBm
Power Gain at 1dB G.C.P.	$G_{1dB}$		6.0	7.5	-	dB
Power-added Efficiency	$\eta_{add}$		-	26	-	%
Noise Figure	NF	$V_{DS} = 3\text{V},$ $I_{DS} = 20\text{mA} (Typ.),$ $f = 12 \text{GHz}$	-	2.5	-	dB
Associated Gain	$G_{as}$		-	7	-	dB
Thermal Resistance	$R_{th}$	Channel to Case	-	65	130	$^\circ\text{C/W}$

CASE STYLE: WF

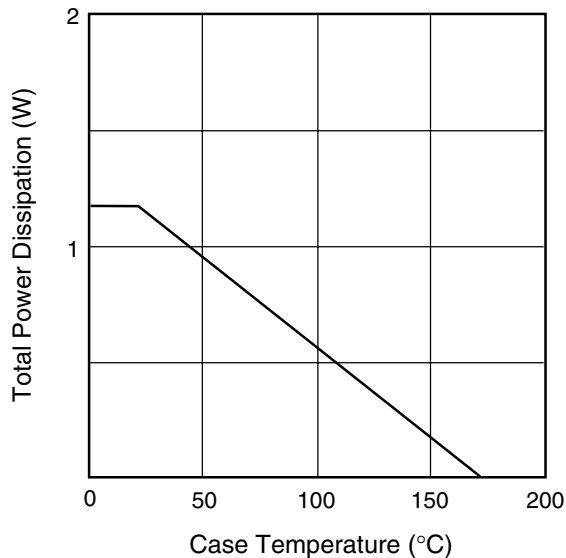
G.C.P.: Gain Compression Point



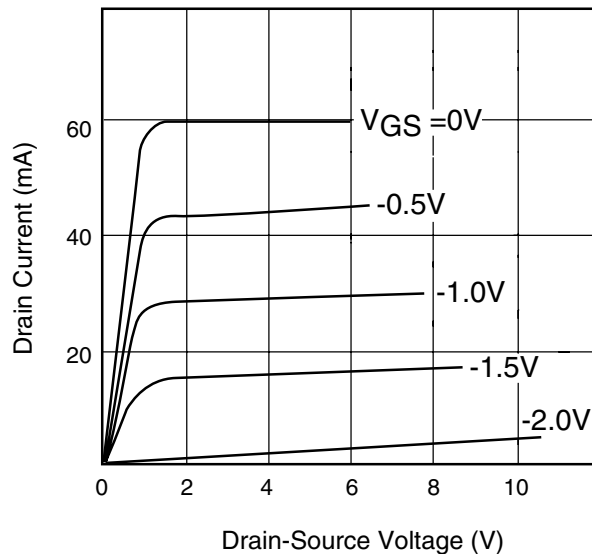
# FLK017WF

X, Ku Band Power GaAs FET

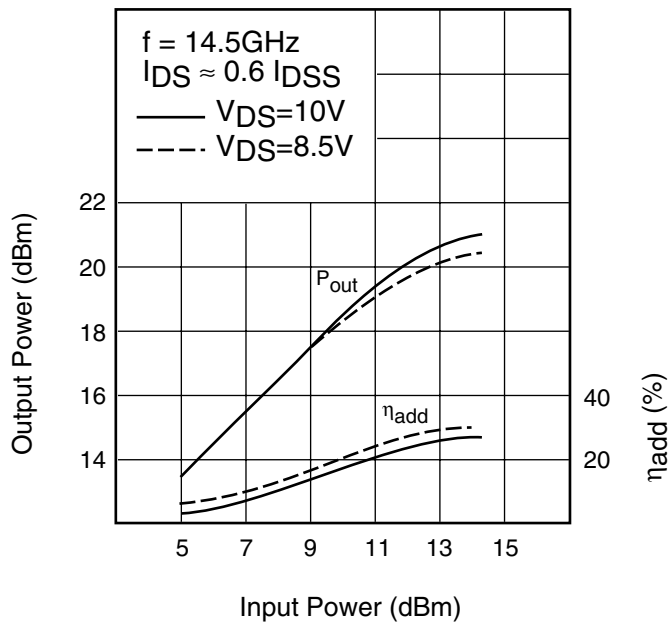
### POWER DERATING CURVE



### DRAIN CURRENT vs. DRAIN-SOURCE VOLTAGE

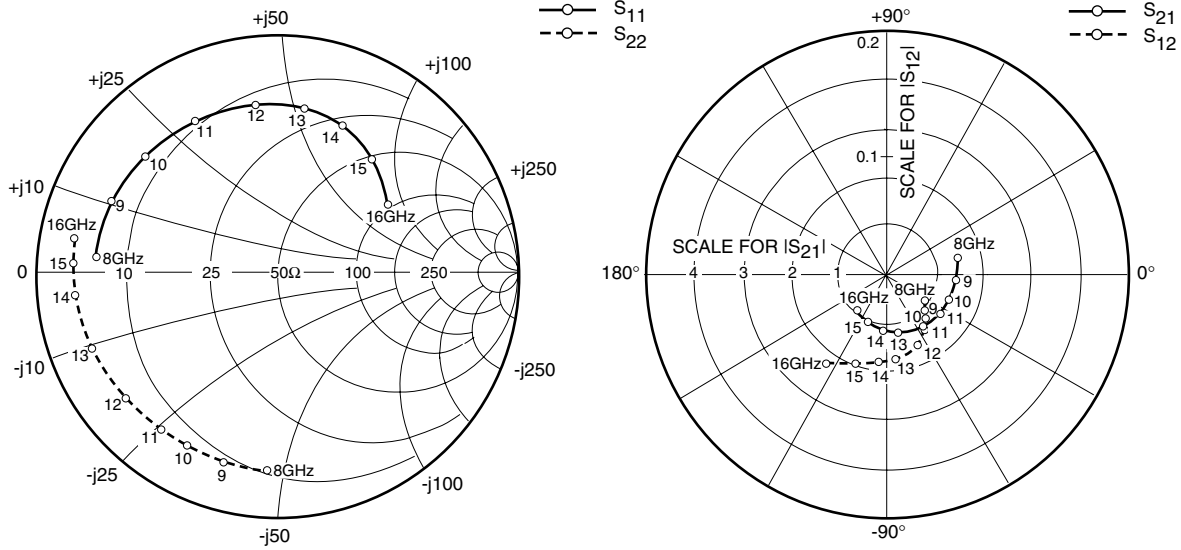


### OUTPUT POWER vs. INPUT POWER



# FLK017WF

## X, Ku Band Power GaAs FET



### S-PARAMETERS

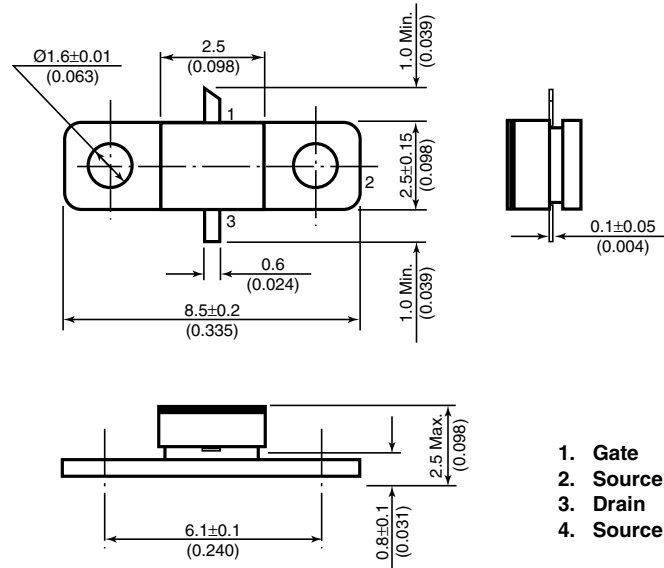
$V_{DS} = 10V, I_{DS} = 40mA$

FREQUENCY (MHZ)	S11		S21		S12		S22	
	MAG	ANG	MAG	ANG	MAG	ANG	MAG	ANG
500	.990	-15.9	2.892	166.0	.006	77.2	.852	-7.9
1000	.978	-31.4	2.836	152.3	.011	65.7	.850	-16.3
8000	.750	175.7	1.539	14.1	.038	-35.2	.818	-93.7
9000	.737	157.2	1.436	-3.8	.041	-39.2	.816	-106.0
10000	.727	139.7	1.367	-20.1	.047	-44.7	.812	-116.2
11000	.708	119.9	1.345	-37.4	.055	-53.8	.812	-126.5
12000	.689	98.4	1.307	-57.1	.064	-66.4	.817	-140.3
13000	.679	80.5	1.208	-76.9	.069	-82.5	.823	-157.4
14000	.656	66.3	1.088	-95.4	.071	-96.0	.840	-173.1
15000	.606	50.8	1.003	-112.1	.076	-109.7	.852	177.7
16000	.526	32.0	.976	-129.4	.088	-126.8	.848	170.7

# FLK017WF

X, Ku Band Power GaAs FET

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



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Fujitsu Compound Semiconductor Products contain **gallium arsenide (GaAs)** which can be hazardous to the human body and the environment. For safety, observe the following procedures:

- Do not put these products into the mouth.
- 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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