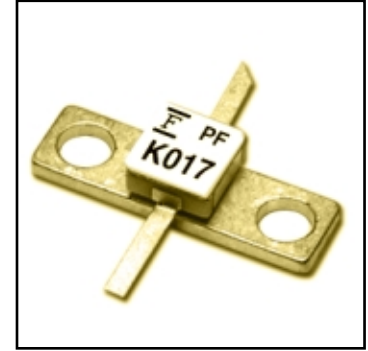


FEATURES

- High Output Power: $P_{1dB} = 20.5\text{dBm(Typ.)}$
- High Gain: $G_{1dB} = 7.5\text{dB(Typ.)}$
- High PAE: $\eta_{add} = 26\%\text{(Typ.)}$
- 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 Ω .
3. The operating channel temperature (T_{ch}) should not exceed 145 $^\circ\text{C}$.

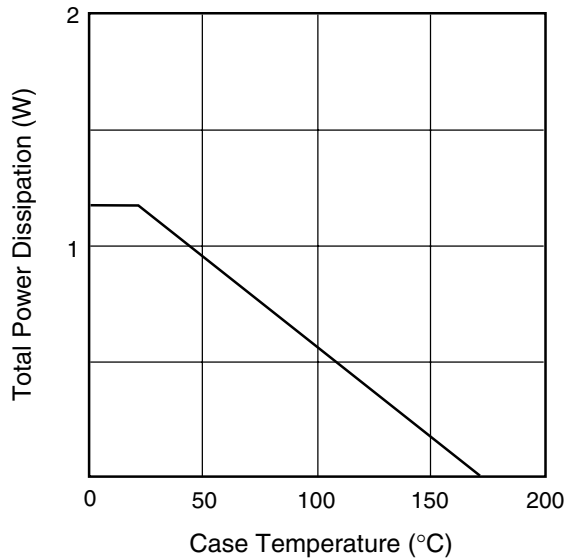
ELECTRICAL CHARACTERISTICS (Ambient Temperature $T_a=25^\circ\text{C}$)

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}	$V_{DS} = 10\text{V},$ $I_{DS} = 0.6 I_{DSS} \text{ (Typ.)},$ $f = 14.5 \text{ GHz}$	19.5	20.5	-	dBm
Power Gain at 1dB G.C.P.	G_{1dB}		6.0	7.5	-	dB
Power-added Efficiency	η_{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	$^\circ\text{C/W}$

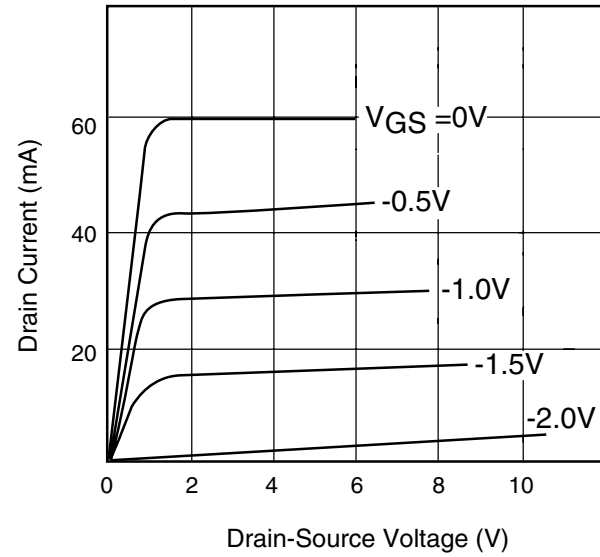
CASE STYLE: WF

G.C.P.: Gain Compression Point

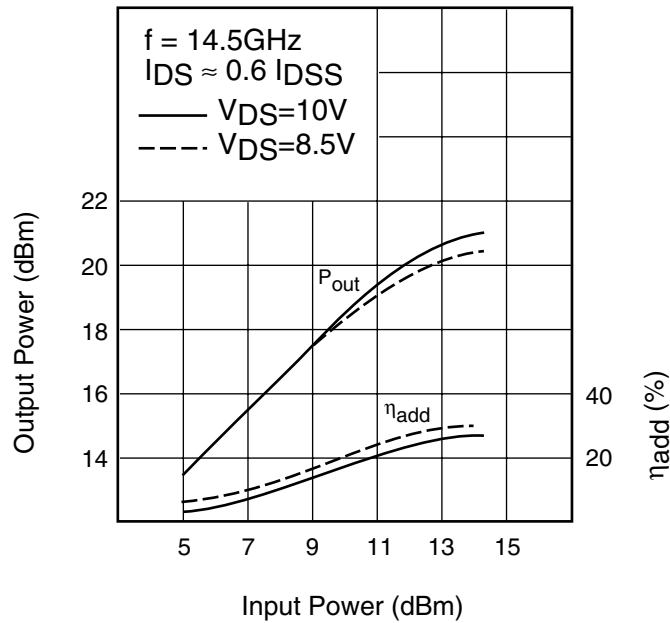
POWER DERATING CURVE



DRAIN CURRENT vs. DRAIN-SOURCE VOLTAGE

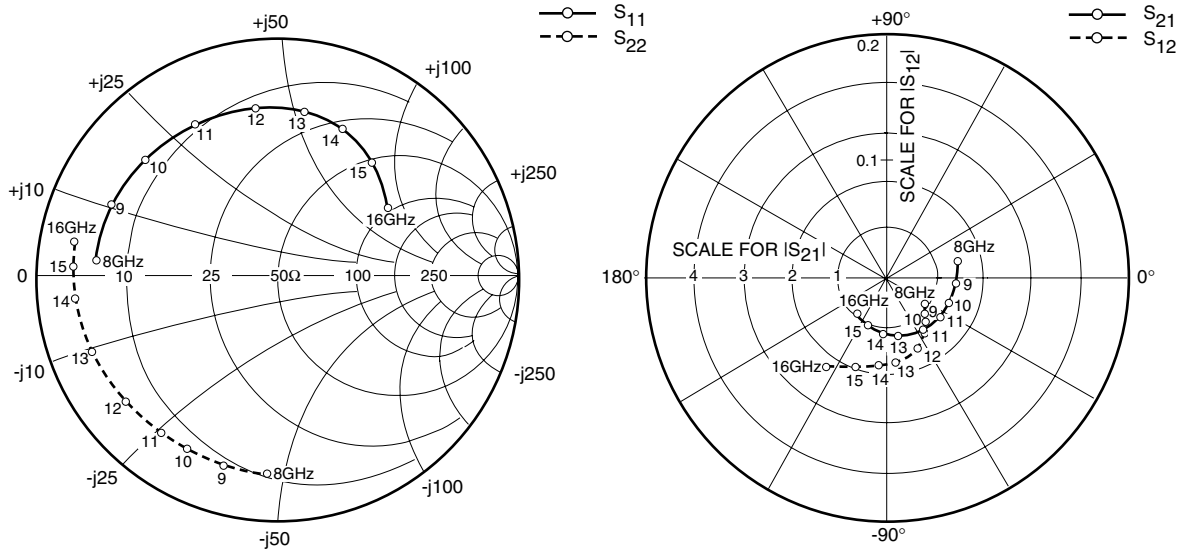


OUTPUT POWER vs. INPUT POWER



FLK017WF

X, Ku Band Power GaAs FET

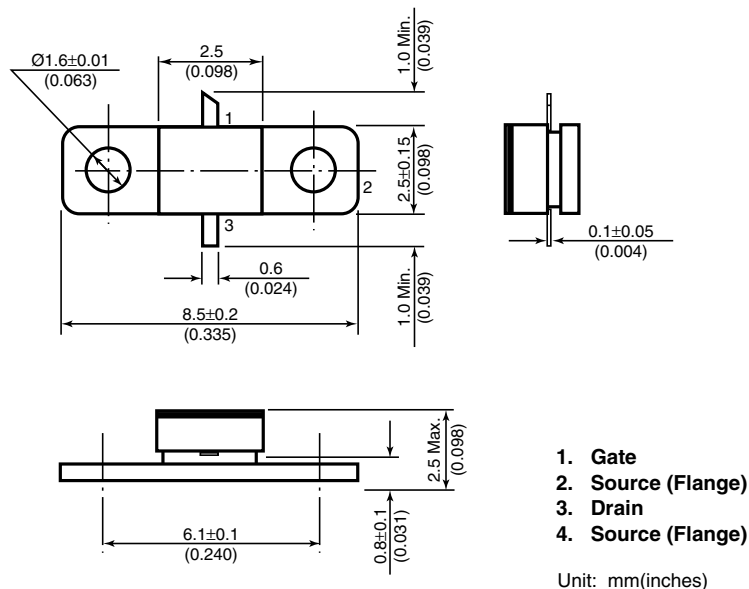


S-PARAMETERS

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

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

Case Style "WF" Metal-Ceramic Hermetic Package



For further information please contact:

FUJITSU COMPOUND SEMICONDUCTOR, INC.

2355 Zanker Rd.

San Jose, CA 95131-1138, U.S.A.

Phone: (408) 232-9500

FAX: (408) 428-9111

www.fcsi.fujitsu.com

FUJITSU MICROELECTRONICS EUROPE, GmbH

Quantum Devices Division

Network House

Norreys Drive

Maidenhead, Berkshire SL6 4FJ

Phone: +44 (0)1628 504800

FAX: +44 (0)1628 504888

CAUTION

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.

Fujitsu Limited reserves the right to change products and specifications without notice.
The information does not convey any license under rights of Fujitsu Limited or others.

© 1998 FUJITSU COMPOUND SEMICONDUCTOR, INC.

Printed in U.S.A. FCSI0598M200