X, Ku Band Power GaAs FET

FEATURES

- High Output Power: P_{1dB} = 20.5dBm(Typ.)
- High Gain: G_{1dB} = 7.5dB(Typ.)
- High PAE: η_{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 Ta=25°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°C	1.15	W
Storage Temperature	T_{stg}		-65 to +175	°C
Channel Temperature	T_{ch}		175	°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 3000Ω.
3. The operating channel temperature (T_{ch}) should not exceed 145°C.

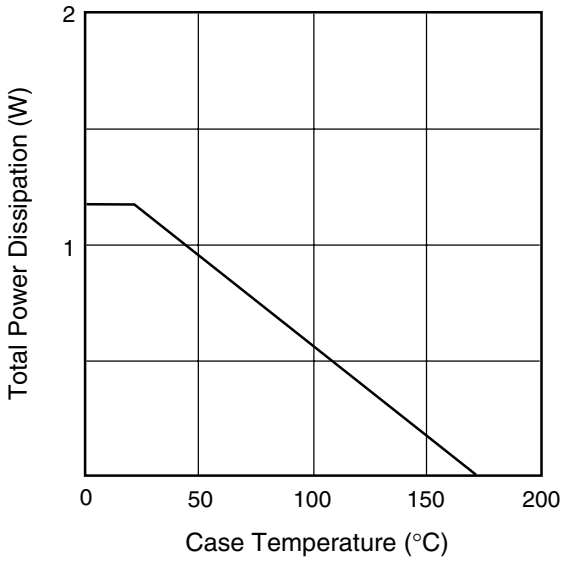
ELECTRICAL CHARACTERISTICS (Ambient Temperature Ta=25°C)

Item	Symbol	Test Conditions	Limit			Unit
			Min.	Typ.	Max.	
Saturated Drain Current	I_{DSS}	V_{DS} = 5V, V_{GS} = 0V	-	60	90	mA
Transconductance	g_m	V_{DS} = 5V, I_{DS} = 40mA	-	30	-	mS
Pinch-off Voltage	V_p	V_{DS} = 5V, I_{DS} = 3mA	-1.0	-2.0	-3.5	V
Gate Source Breakdown Voltage	V_{GSO}	I_{GS} = -3μA	-5	-	-	V
Output Power at 1dB G.C.P.	P_{1dB}	V_{DS} = 10V, I_{DS} = 0.6 I_{DSS} (Typ.), f = 14.5 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} = 3V, I_{DS} = 20mA (Typ.), f = 12 GHz	-	2.5	-	dB
Associated Gain	Gas		-	7	-	dB
Thermal Resistance	R_{th}	Channel to Case	-	65	130	°C/W

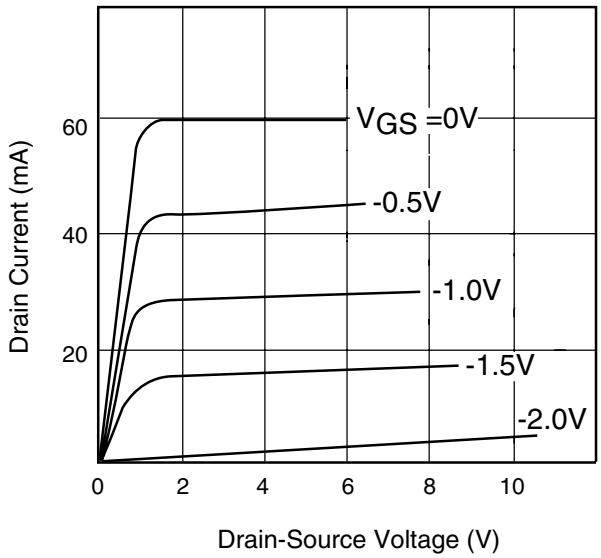
CASE STYLE: WF

G.C.P.: Gain Compression Point

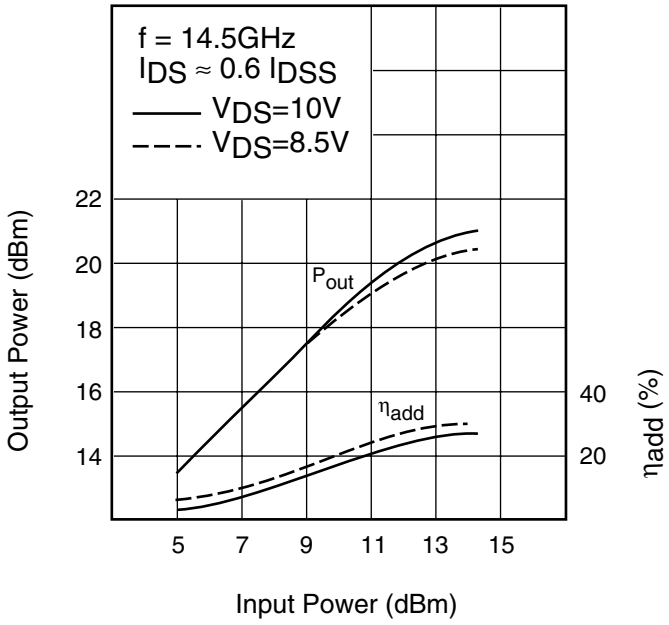
POWER DERATING CURVE

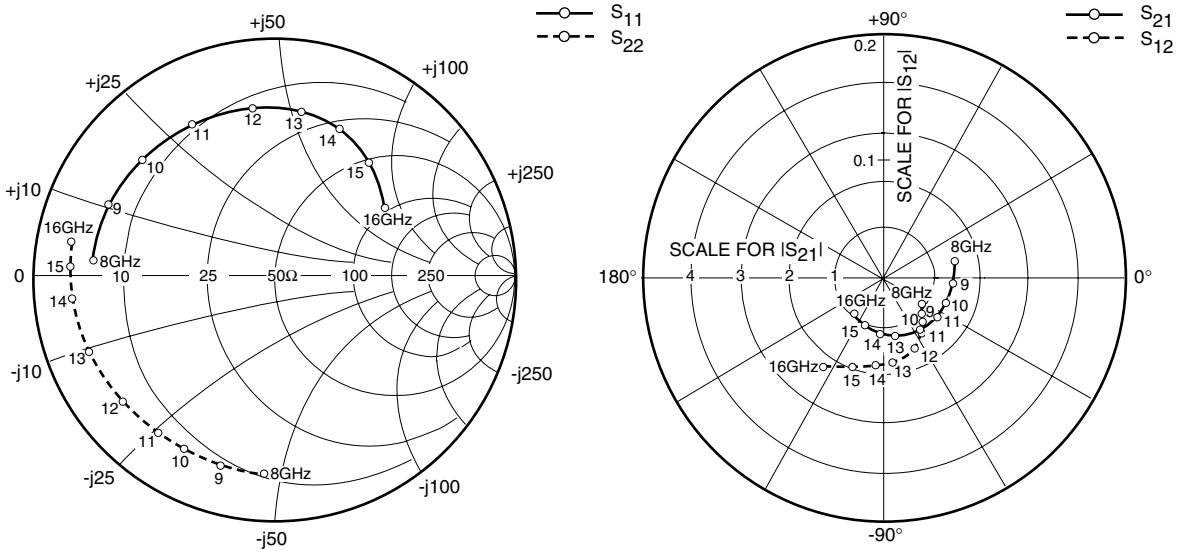


DRAIN CURRENT vs. DRAIN-SOURCE VOLTAGE



OUTPUT POWER vs. INPUT POWER





S-PARAMETERS

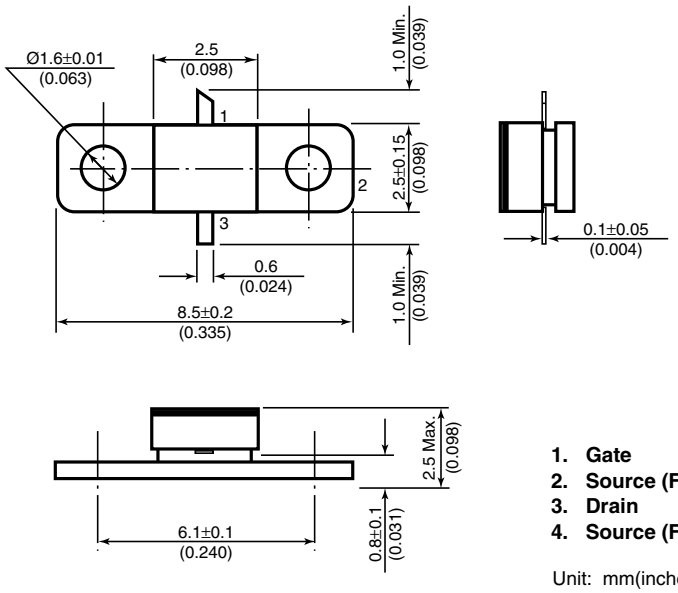
V_{DS} = 10V, I_{DS} = 40mA

FREQUENCY	S11		S21		S12		S22	
(MHZ)	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

Download S-Parameters, click here

Case Style "WF"

Metal-Ceramic Hermetic Package



1. **Gate**
2. **Source (Flange)**
3. **Drain**
4. **Source (Flange)**

Unit: mm(inches)

For further information please contact:

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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.**

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