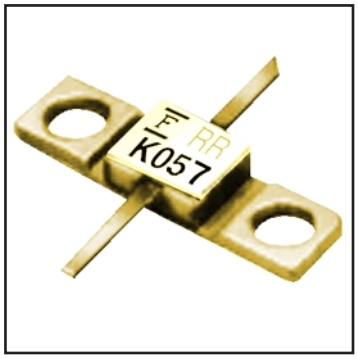
FLK057WG

X, Ku Band Power GaAs FET

FEATURES

- High Output Power: P_{1dB} = 27.0dBm(Typ.)
- High Gain: G_{1dB} = 7.0dB(Typ.)
- High PAE: η_{add} = 32%(Typ.)
- Proven Reliability
- Hermetic Metal/Ceramic Package



DESCRIPTION

The FLK057WG 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	3.75	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 4.4 and -0.25 mA respectively with gate resistance of 1000Ω.
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	-	200	300	mA
Transconductance	g_m	V_{DS} = 5V, I_{DS} =125mA	-	100	-	mS
Pinch-off Voltage	V_p	V_{DS} = 5V, I_{DS} =10mA	-1.0	-2.0	-3.5	V
Gate Source Breakdown Voltage	V_{GSO}	I_{GS} = -10μA	-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	26.0	27.0	-	dBm
Power Gain at 1dB G.C.P.	G_{1dB}		6.0	7.0	-	dB
Power-added Efficiency	η_{add}		-	32	-	%
Output Power at 1dB G.C.P.	P_{1dB}	V_{DS} = 10V, I_{DS} = 0.6 I_{DSS} (Typ.), f = 12 GHz	-	27	-	dBm
Power Gain at 1dB G.C.P.	G_{1dB}		-	8	-	dB
Power-added Efficiency	η_{add}		-	34	-	%
Thermal Resistance	R_{th}	Channel to Case	-	20	40	°C/W

CASE STYLE: WG

G.C.P.: Gain Compression Point

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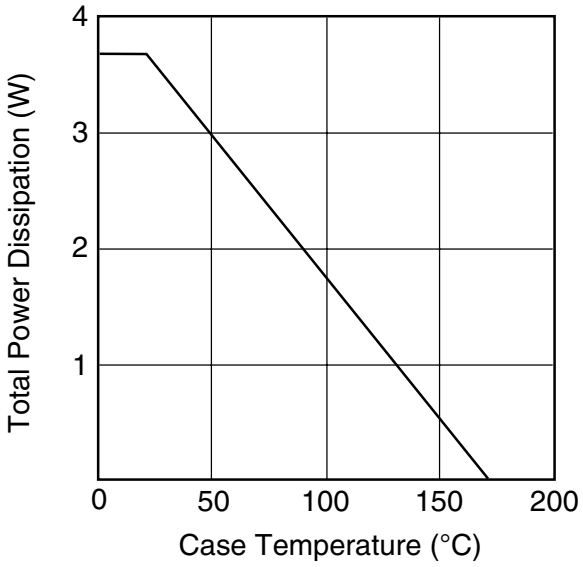
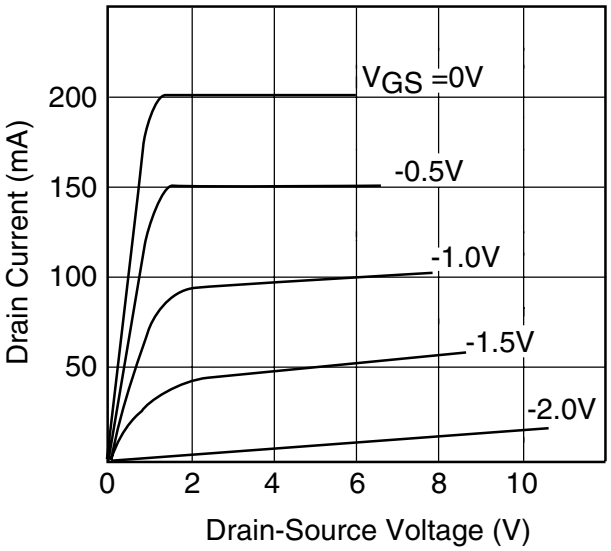
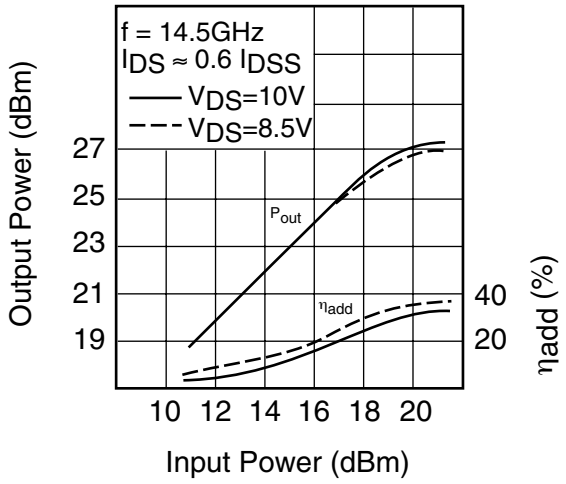
POWER DERATING CURVE



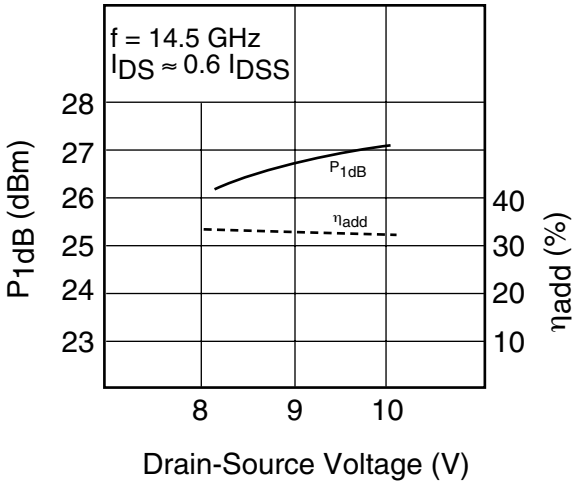
DRAIN CURRENT vs. DRAIN-SOURCE VOLTAGE

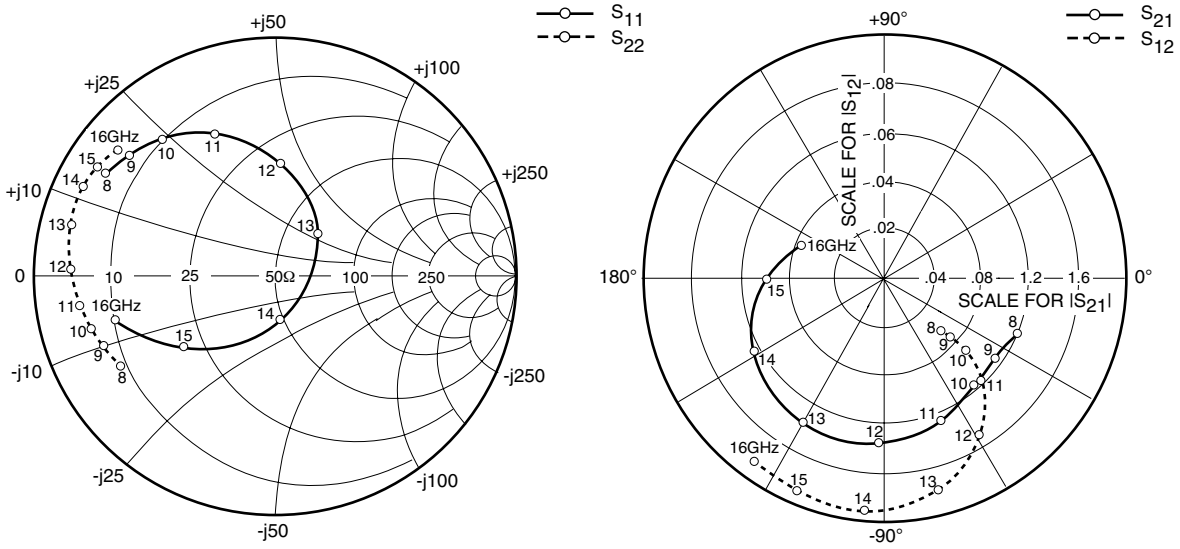


OUTPUT POWER vs. INPUT POWER



P_{1dB} & η_{add} vs. V_{DS}





S-PARAMETERS

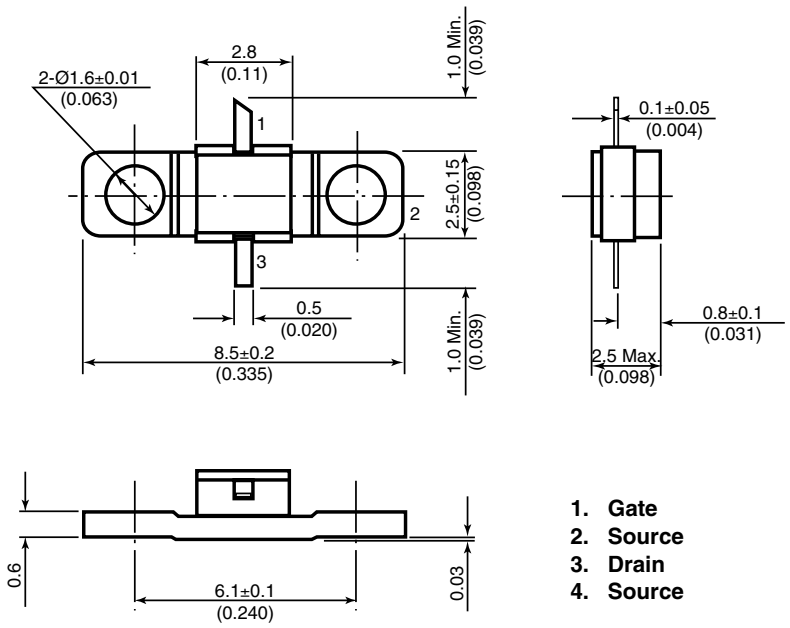
V_{DS} = 10V, I_{DS} = 120mA

FREQUENCY	S11		S21		S12		S22	
(MHZ)	MAG	ANG	MAG	ANG	MAG	ANG	MAG	ANG
500	.973	-47.8	7.249	147.9	.016	60.6	.545	-20.3
1000	.941	-85.1	5.946	121.8	.026	38.1	.519	-38.1
8000	.816	148.5	1.199	-21.6	.033	-41.3	.745	-149.2
9000	.787	139.7	1.125	-35.4	.037	-40.9	.773	-157.3
10000	.740	129.3	1.149	-49.4	.045	-40.5	.796	-163.0
11000	.642	112.7	1.251	-67.7	.058	-46.2	.819	-170.6
12000	.474	86.4	1.346	-91.6	.075	-58.5	.845	178.7
13000	.249	43.8	1.351	-119.6	.089	-75.4	.868	166.3
14000	.189	-83.7	1.227	-150.6	.095	-95.0	.878	155.2
15000	.480	-140.8	.980	-179.3	.093	-112.5	.868	148.7
16000	.689	-163.9	.752	158.6	.092	-125.9	.840	141.4

Download S-Parameters, click here

Case Style "WG"

Metal-Ceramic Hermetic Package



1. **Gate**
2. **Source**
3. **Drain**
4. **Source**

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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