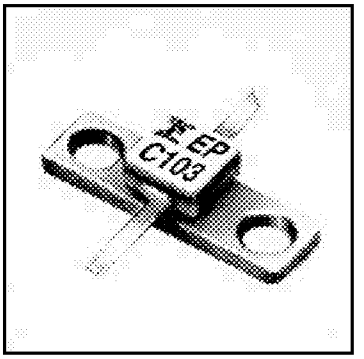
FLC103WG
C-Band Power GaAs FETs

FUJITSU

FEATURES



- High Output Power: P_{1dB} = 30.0dBm(Typ.)
- High Gain: G_{1dB} = 8.0dB(Typ.)
- High PAE: η_{add} = 36%(Typ.)
- Proven Reliability
- Hermetic Metal/Ceramic Package

DESCRIPTION

The FLC103WG is a power GaAs FET that is designed for general purpose applications in the C-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	7.5	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 +2.0 and -0.5 mA respectively with gate resistance of 500Ω.

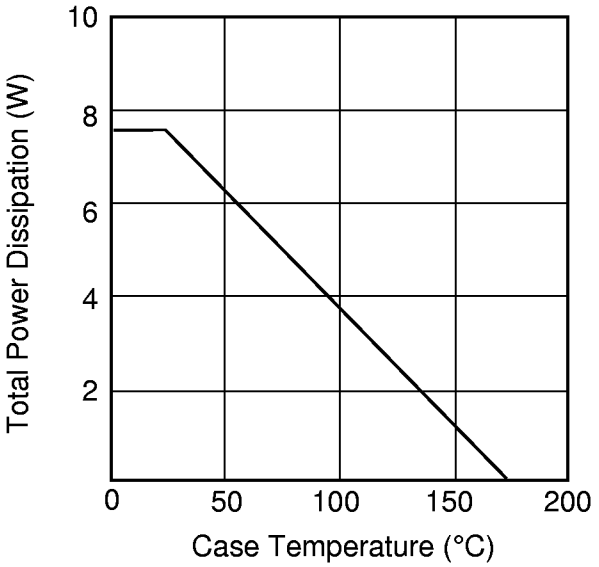
ELECTRICAL CHARACTERISTICS (Ambient Temperature Ta=25°C)

Item	Symbol	Test Conditions	Limit			Unit
			Min.	Typ.	Max.	
Saturated Drain Current	I_{DSS}	V_{DS} = 5V, V_{GS} = 0V	-	400	600	mA
Transconductance	g_m	V_{DS} = 5V, I_{DS} = 250mA	-	200	-	mS
Pinch-off Voltage	V_p	V_{DS} = 5V, I_{DS} =20mA	-1.0	-2.0	-3.5	V
Gate Source Breakdown Voltage	V_{GSO}	I_{GS} = -20μA	-5	-	-	V
Output Power at 1dB G.C.P.	P_{1dB}	V_{DS} = 10V, I_{DS} = 0.6 I_{DSS} (Typ.), f = 8 GHz	28.5	30.0	-	dBm
Power Gain at 1dB G.C.P.	G_{1dB}		7.0	8.0	-	dB
Power-added Efficiency	η_{add}		-	36	-	%
Thermal Resistance	R_{th}	Channel to Case	-	16	20	°C/W

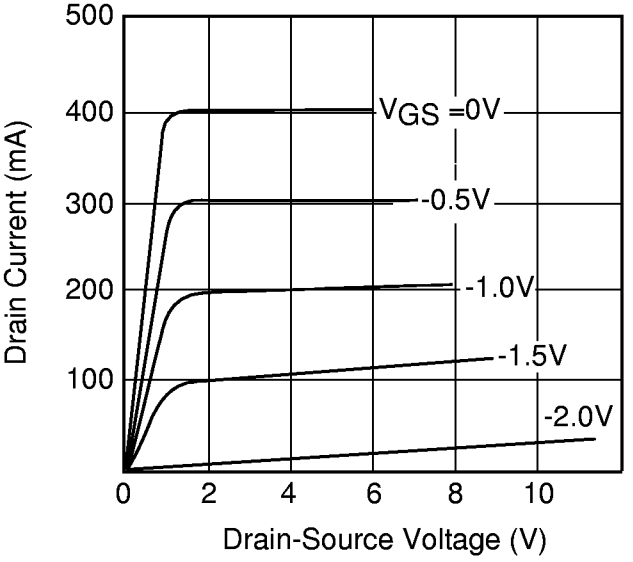
CASE STYLE: WG

G.C.P.: Gain Compression Point

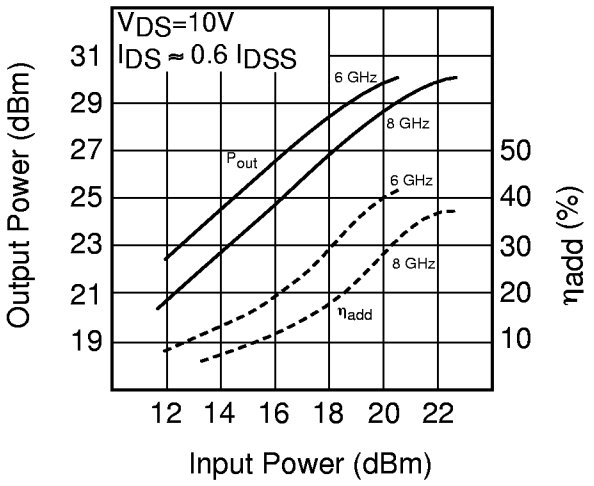
POWER DERATING CURVE



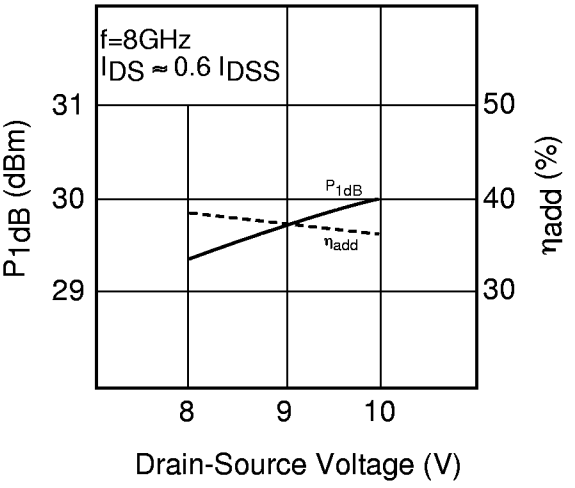
DRAIN CURRENT vs. DRAIN-SOURCE VOLTAGE

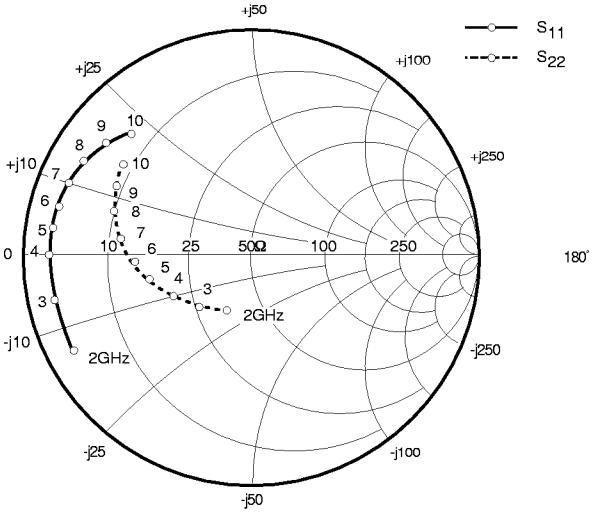


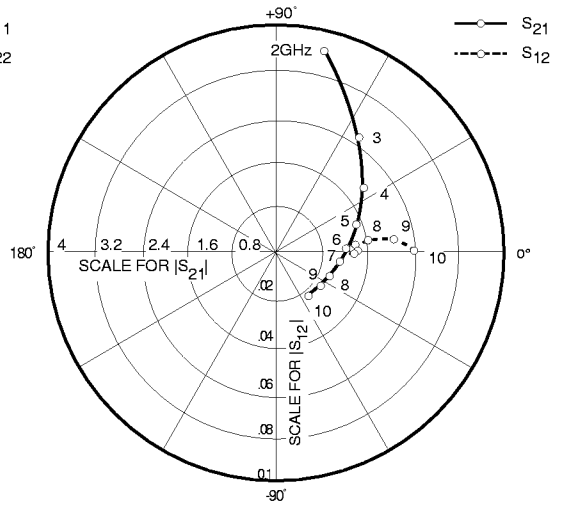
OUTPUT POWER vs. INPUT POWER



P1dB & ηadd vs. VDS





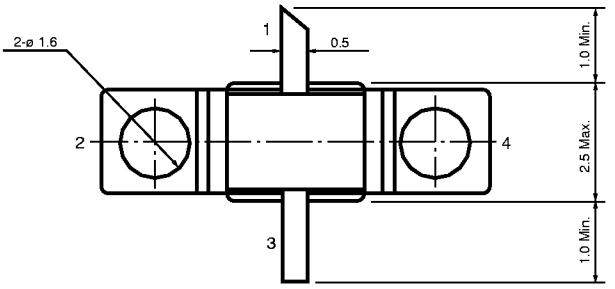


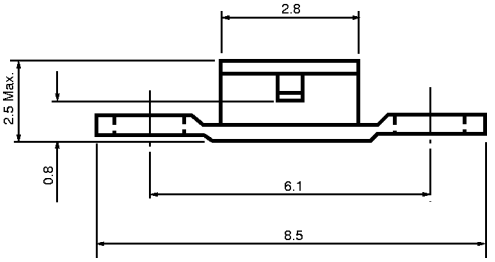
S-PARAMETERS

V_{DS} = 10V, I_{DS} = 250mA

FREQUENCY	S11		S21		S12		S22	
(MHZ)	MAG	ANG	MAG	ANG	MAG	ANG	MAG	ANG
500	.875	-70.1	8.887	137.4	.023	46.0	.200	-63.5
1000	.882	-112.2	6.397	109.3	.033	27.3	.223	-97.5
2000	.884	-150.2	3.714	76.2	.037	8.8	.285	-126.2
3000	.879	-167.4	2.535	54.6	.036	.3	.359	-141.4
4000	.871	-179.6	1.898	35.5	.034	-2.5	.435	-155.4
5000	.865	171.4	1.508	19.1	.033	-1.8	.506	-167.9
6000	.862	163.7	1.258	4.2	.034	1.4	.572	-179.2
7000	.857	157.5	1.096	-9.2	.037	3.6	.626	171.4
8000	.852	151.0	.996	-22.7	.042	8.0	.676	163.1
9000	.827	142.9	.924	-36.9	.051	5.7	.713	154.3
10000	.782	133.8	.887	-50.7	.061	-.1	.731	145.9

Case Style "WG"
Metal-Ceramic Hermetic Package





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

Unit: mm (inches)