

< High-power GaAs FET (small signal gain stage) >

# MGF1801BT

S to X BAND / 0.2W

non - matched

## DESCRIPTION

The MGF1801BT, medium-power GaAs FET with an N-channel Schottky gate, is designed for use in S to X band amplifiers and oscillators. The hermetically sealed metalceramic package assures minimum parasitic losses, and has a configuration suitable for microstrip circuits. The MGF1801BT is mounted in the super 24 tape.

## FEATURES

- High linear power gain  
G<sub>lp</sub>=9.0dB @f=8GHz
- High P1dB  
P1dB=23dBm(TYP.) @f=8GHz
- High reliability and stability

## APPLICATION

- S to X Band medium-power amplifiers and oscillators

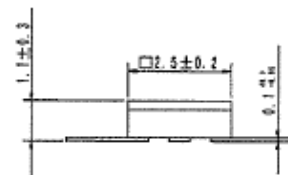
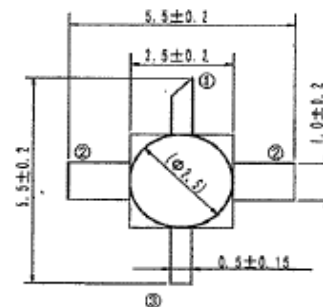
## QUALITY

- IG

## RECOMMENDED BIAS CONDITION

- V<sub>DS</sub>=6V, I<sub>D</sub>=100mA

## OUTLINE DRAWING Unit: millimeters



① Gate  
② Source  
③ Drain

GD-24

### Keep Safety first in your circuit designs!

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## Absolute maximum ratings (Ta=25°C)

Symbol	Parameter	Ratings	Unit
V <sub>GDO</sub>	Gate to drain breakdown voltage	-8	V
V <sub>GSO</sub>	Gate to source breakdown voltage	-8	V
I <sub>D</sub>	Drain current	250	mA
I <sub>GR</sub>	Reverse gate current	-0.6	mA
I <sub>GF</sub>	Forward gate current	1.5	mA
P <sub>T</sub>	Total power dissipation	1.2	W
T <sub>ch</sub>	Channel temperature	175	°C
T <sub>stg</sub>	Storage temperature	-65 to +175	°C

## Electrical characteristics (Ta=25°C)

Symbol	Parameter	Test conditions	Limits			Unit
			Min.	Typ.	Max.	
V <sub>(BR)GDO</sub>	Gate to drain breakdown voltage	I <sub>g</sub> =200μA	-8	-	-	V
V <sub>(BR)GSO</sub>	Gate to source breakdown voltage	I <sub>g</sub> =200μA	-8	-	-	V
I <sub>GSS</sub>	Gate to source leakage current	V <sub>DS</sub> =0V, V <sub>GS</sub> =-3V	-	-	20	μA
I <sub>DSS</sub>	Saturated drain current	V <sub>DS</sub> =3V, V <sub>GS</sub> =0V	150	200	250	mA
V <sub>GS(off)</sub>	Gate to source cut-off voltage	V <sub>DS</sub> =3V, I <sub>D</sub> =100μA	-1.5	-	-4.5	V
gm	Transconductance	V <sub>DS</sub> =3V, I <sub>D</sub> =100mA	70	90	-	mS
GLP	Linear Power Gain	V <sub>DS</sub> =6V, I <sub>D</sub> =100mA, f=12GHz	7	9	-	dB
P1dB	Output power at 1dB gain compression	V <sub>DS</sub> =6V, I <sub>D</sub> =100mA, f=12GHz	21.8	23	-	dBm

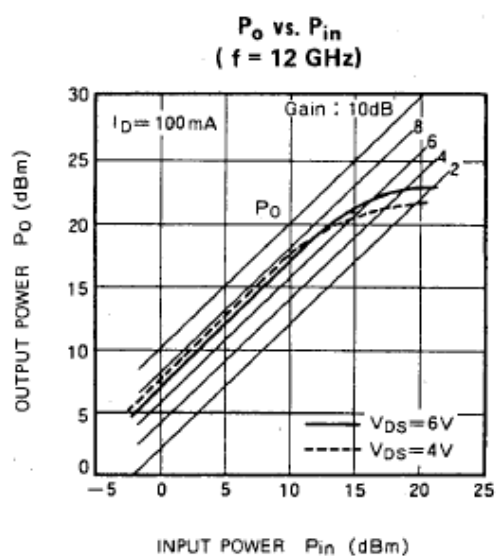
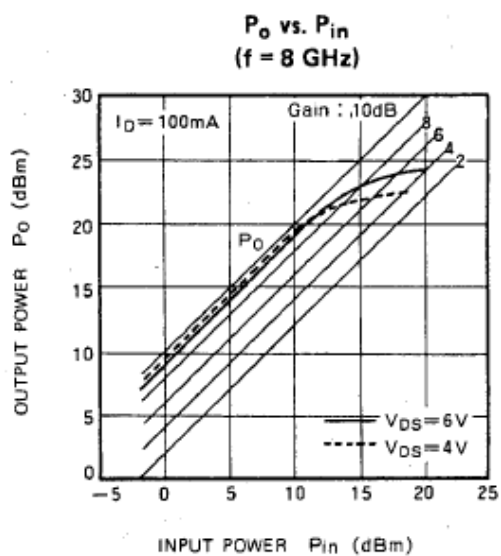
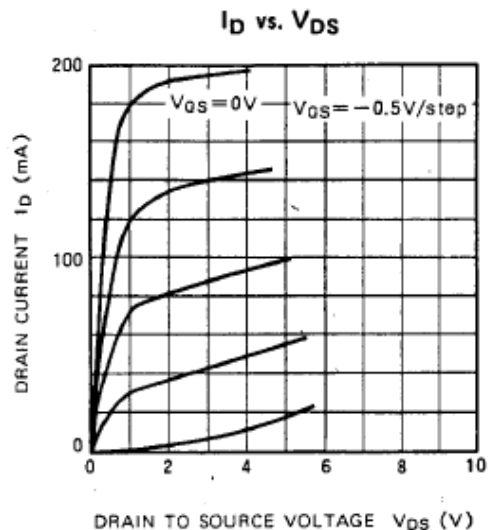
\*1: Channel to ambient

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## MGF1801BT TYPICAL CHARACTERISTICS (Ta=25°C)



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