

## < X/Ku band internally matched power GaAs FET >

# MGFX39V0717

10.7 - 11.7 GHz BAND / 8W

#### **DESCRIPTION**

The MGFX39V0717 is an internally impedance-matched GaAs power FET especially designed for use in 10.7 – 11.7 GHz band amplifiers. The hermetically sealed metal-ceramic package guarantees high reliability.

#### **FEATURES**

Internally impedance matched

- High output power
  - P1dB=8.0W (TYP.) @f=10.7 11.7GHz
- High linear power gain
  - GLP=7.0dB (TYP.) @f=10.7 11.7GHz
- High power added efficiency
  - P.A.E.=26% (TYP.) @f=10.7 11.7GHz

### **APPLICATION**

• For use in 10.7 – 11.7 GHz band power amplifiers

### **QUALITY**

• IG

### RECOMMENDED BIAS CONDITIONS

• VDS=10V • ID=2.4A Refer to Bias Procedure

### **Absolute maximum ratings** (Ta=25°C)

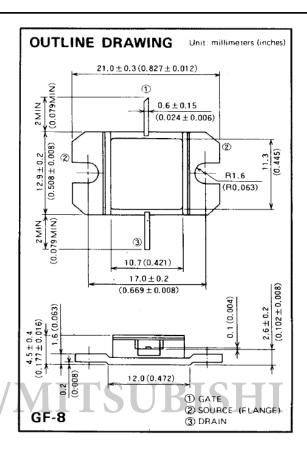
Symbol	Parameter	Ratings	Unit			
VGDO	Gate to drain breakdown voltage	-15	V			
VGSO	Gate to source breakdown voltage	-15	V			
ID	Drain current	5.6	Α			
IGR	Reverse gate current	-18	mA			
IGF	Forward gate current	36	mA			
PT *1	Total power dissipation	42.8	W			
Tch	Cannel temperature	175	°C			
Tstg	Storage temperature	-65 to +175	°C			
*4 . T- 0F00						

\*1 : Tc=25°C

# Electrical characteristics (Ta=25°C)

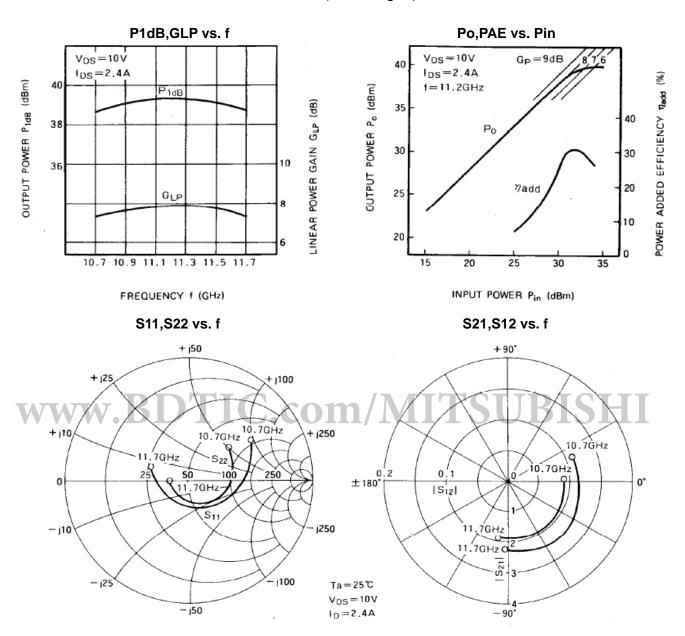
Symbol	Parameter	Test conditions	Limits			Unit
			Min.	Тур.	Max.	
IDSS	Saturated drain current	VDS=3V,VGS=0V	-	4	5.6	Α
gm	Transconductance	VDS=3V,ID=2.2A	-	2	-	S
VGS(off)	Gate to source cut-off voltage	VDS=3V,ID=20mA	-2	-3	-4	V
P1dB	Output power at 1dB gain compression	VDS=10V,ID(RF off)=2.4A	37.5	39	-	dBm
GLP	Linear Power Gain	f=10.7 – 11.7GHz	6	7	-	dB
P.A.E.	Power added efficiency		-	26	-	%
Rth(ch-c) *2	Thermal resistance		-	-	3.5	°C/W

<sup>\*2 :</sup>Channel-case



Keep Safety first in your circuit designs! Mitsubishi Electric Corporation puts the maximum effort into making semiconductor products better and more reliable, but there is always the possibility that trouble may occur with them. Trouble with semiconductors may lead to personal injury, fire or property damage. Remember to give due consideration to safety when making your circuit designs, with appropriate measure such as (I) placement of substitutive, auxiliary circuits, (ii) use of non-flammable material or (iii) prevention against any malfunction or mishap.

### MGFX39V0717 TYPICAL CHARACTERISTICS (Ta=25deg.C)



**MGFX39V0717 S-parameters**( Ta=25deg.C , VDS=10(V),IDS=2.4(A) )

f (GHz)	S Parameters(Typ.)							
	S11		S21		S12		S22	
	Magn.	Angle(deg.)	Magn.	Angle(deg.)	Magn.	Angle(deg.)	Magn.	Angle(deg.)
10.7	0.64	40	2.15	23	0.082	2	0.44	41
10.9	0.50	15	2.28	-4	0.085	-14	0.34	14
11.1	0.34	-15	2.38	-25	0.087	-34	0.24	-17
11.3	0.16	-71	2.45	-52	0.093	-57	0.14	-73
11.5	0.20	-168	2.30	-73	0.092	-79	0.16	-136
11.7	0.32	151	2.15	-93	0.087	-98	0.18	176

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