

< X/Ku band internally matched power GaAs FET >

MGFK39V4045

14.0 – 14.5 GHz BAND / 8W

DESCRIPTION

The MGFK39V4045 is an internally impedance-matched GaAs power FET especially designed for use in 14.0 – 14.5 GHz band amplifiers. The hermetically sealed metal-ceramic package guarantees high reliability.

FEATURES

Internally matched to 50(ohm) system
Flip-chip mounted

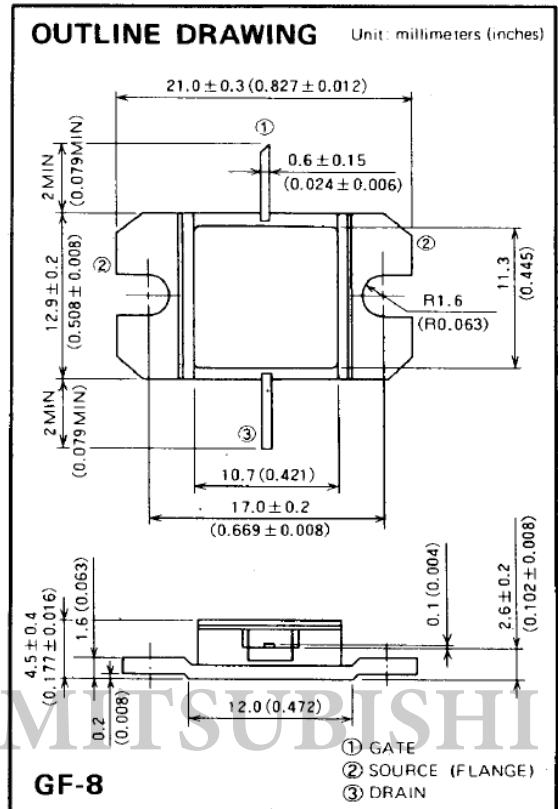
- High output power
P1dB=8W (TYP.) @f=14.0 – 14.5GHz
- High linear power gain
GLP=5.5dB (TYP.) @f=14.0 – 14.5GHz
- High power added efficiency
P.A.E.=20% (TYP.) @f=14.0 – 14.5GHz

APPLICATION

- 14.0 – 14.5 GHz band power amplifiers

QUALITY GRADE

- 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	6	A
IGR	Reverse gate current	-18	mA
IGF	Forward gate current	36	mA
PT *1	Total power dissipation	42.8	W
Tch	Channel temperature	175	°C
Tstg	Storage temperature	-65 to +175	°C

*1 : Tc=25°C

Electrical characteristics (Ta=25°C)

Symbol	Parameter	Test conditions	Limits			Unit
			Min.	Typ.	Max.	
IDSS	Saturated drain current	VDS=3V, VGS=0V	-	4	6	A
gm	Transconductance	VDS=3V, ID=2.4A	1.2	2	-	S
VGS(off)	Gate to source cut-off voltage	VDS=3V, ID=20mA	-2	-	-5	V
P1dB	Output power at 1dB gain compression	VDS=10V, ID(RF off)=2.4A	38.5	39	-	dBm
GLP	Linear Power Gain	f=14.0 – 14.5GHz	4.5	5.5	-	dB
PAE	Power added efficiency		-	20	-	%
Rth(ch-c) *2	Thermal resistance	delta Vf method	-	-	3.5	°C/W

*2 : Channel-case

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