

DESCRIPTION

The MGF4951A super-low-noise HEMT (High Electron Mobility Transistor) is designed for use in C to K band amplifiers.

The lead-less ceramic package assures minimum parasitic losses.

FEATURES

- Low noise figure @ $f=12\text{GHz}$
NFmin. = 0.45dB (TYP.)
- High associated gain @ $f=12\text{GHz}$
Gs = 13.0dB (TYP.)

APPLICATION

C to K band low noise amplifiers.

QUALITY GRADE

GG

RECOMMENDED BIAS CONDITIONS

$V_{DS}=2\text{V}$, $I_D=10\text{mA}$

Outline Drawing

Fig.1

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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 measures such as (i) placement of substitutive, auxiliary circuits, (ii) use of non-flammable material or (iii) prevention against any malfunction or mishap.

ABSOLUTE MAXIMUM RATINGS ($T_a=25^\circ\text{C}$)

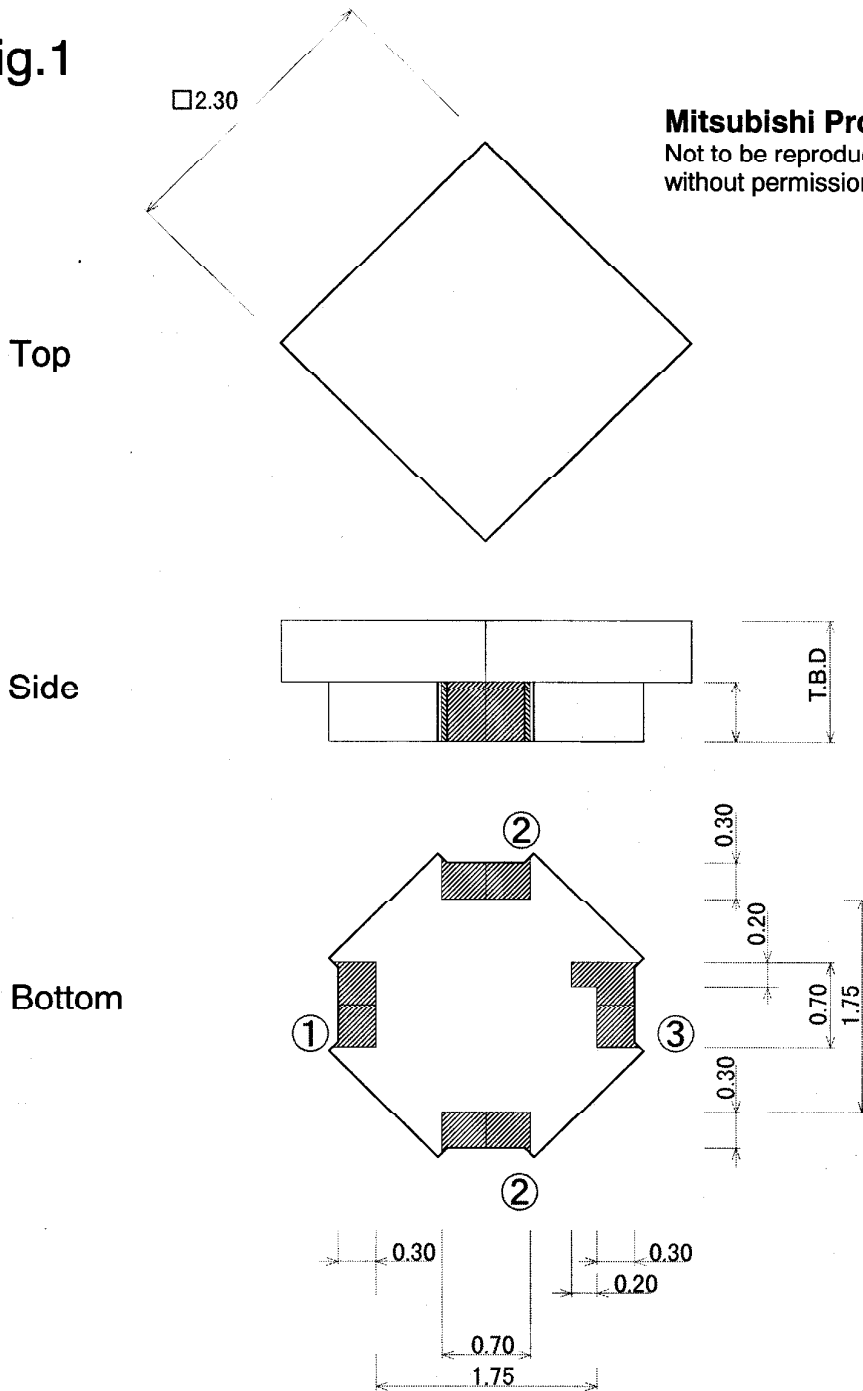
Symbol	Parameter	Ratings	Unit
V_{GDO}	Gate to drain voltage	-4	V
V_{GSO}	Gate to source voltage	-4	V
I_D	Drain current	60	mA
PT	Total power dissipation	50	mW
T_{ch}	Channel temperature	125	$^\circ\text{C}$
T_{stg}	Storage temperature	-65~+125	$^\circ\text{C}$

ELECTRICAL CHARACTERISTICS ($T_a=25^\circ\text{C}$)

Symbol	Parameter	Test conditions	Limits			Unit
			MIN.	TYP.	MAX.	
$V_{(BR)GDO}$	Gate to drain breakdown voltage	$I_G=-10\mu\text{A}$	-3	--	--	V
I_{GSS}	Gate to source leakage current	$V_{GS}=-2\text{V}, V_{DS}=0\text{V}$	--	--	50	μA
I_{DSS}	Saturated drain current	$V_{GS}=0\text{V}, V_{DS}=2\text{V}$	--	35	--	mA
$V_{GS(off)}$	Gate to source cut-off voltage	$V_{DS}=2\text{V}, I_D=500\mu\text{A}$	-0.1	--	-1.5	V
gm	Transconductance	$V_{DS}=2\text{V}, I_D=10\text{mA}$	--	75	--	mS
Gs	Associated gain	$V_{DS}=2\text{V}, I_D=10\text{mA}$	TBD	13.0	--	dB
NFmin.	Minimum noise figure	$f=12\text{GHz}$	--	0.45	TBD	dB

Preliminary

Fig.1



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Top

Side

Bottom

unit : mm

- ① Gate
- ② Source
- ③ Drain