

< Power GaAs FET >

MGF1951A

Leadless ceramic package

DESCRIPTION

The MGF1951A power MES FET is designed for use in S to Ku band power amplifiers.

The lead-less ceramic package assures minimum parasitic losses.

FEATURES

High gain and High P1dB

Glp=9.0dB , P1dB=13dBm (Typ.) @ f=12GHz

APPLICATION

S to Ku band low noise amplifiers

QUALITY GRADE

GG

RECOMMENDED BIAS CONDITIONS

VDS=3V , ID=30mA

ORDERING INFORMATION

Tape & reel 3,000pcs/reel

RoHS COMPLIANT

MGF1951A is a RoHS compliant product. RoHS compliance is indicated by the letter "G" after the Lot Marking.

ABSOLUTE MAXIMUM RATINGS (Ta=25°C)

Symbol	Parameter	Ratings	Unit
VGDO	Gate to drain voltage	-8	V
VGSO	Gate to source voltage	-8	V
ID	Drain current	120	mA
PT	Total power dissipation	300	mW
Tch	Channel temperature	125	°C
Tstg	Storage temperature	-65 to +125	°C

ELECTRICAL CHARACTERISTICS (Ta=25°C)

Symbol	Parameter	Test conditions	Limits			Unit
			MIN.	TYP.	MAX	
V(BR)GDO	Gate to drain breakdown voltage	IG=-30μA	-8	-15	--	V
IDSS	Saturated drain current	VGS=0V, VDS=3V	35	60	120	mA
VGS(off)	Gate to source cut-off voltage	VDS=3V, ID=300μA	-0.3	-1.4	-3.5	V
P1dB	Output power at 1dB gain compression	VDS=3V, ID=30mA, f=12GHz	11	13	--	dBm
Glp	Linear power gain	VDS=3V, ID=30mA, f=12GHz, Pin=-5dBm	7	9	--	dB

Note: P1B and Glp are tested with sampling inspection.

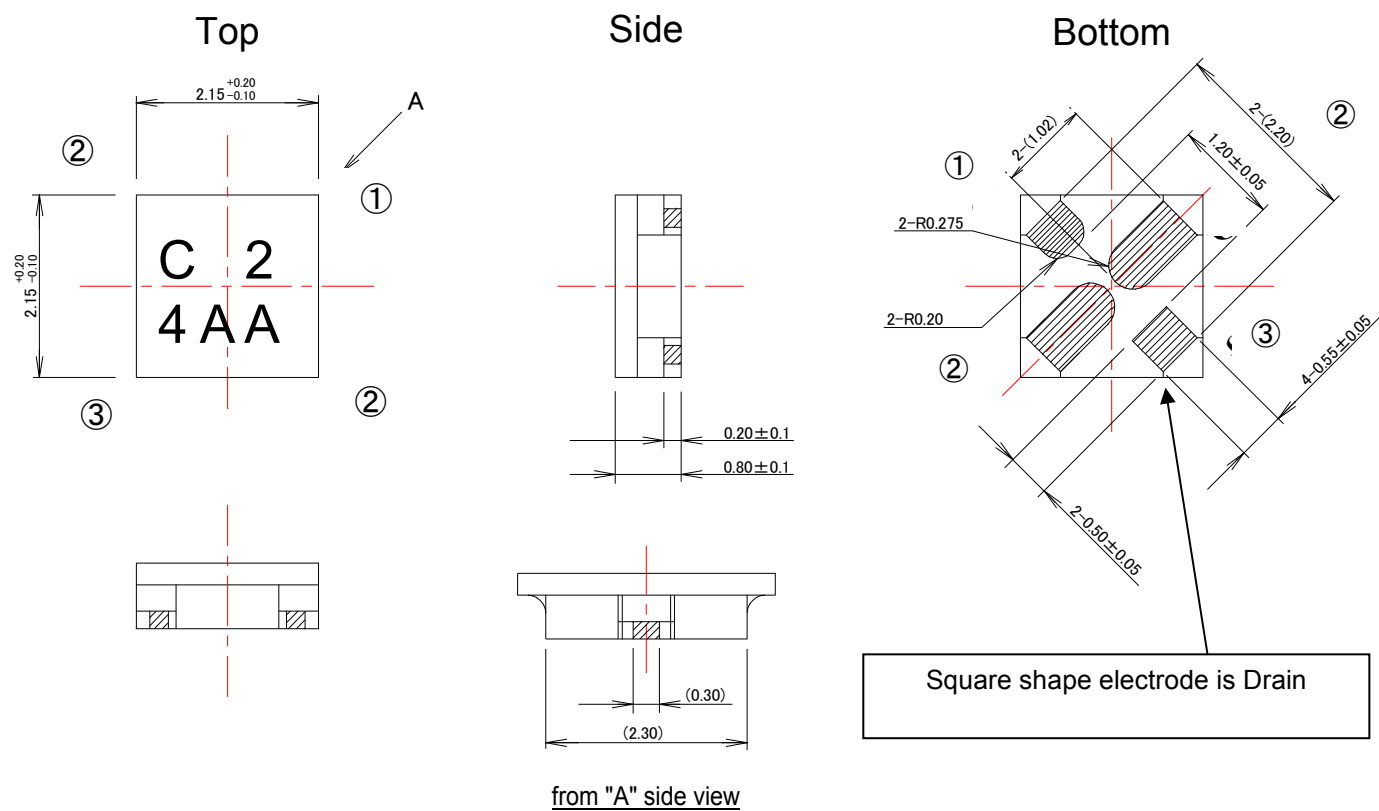
Outline Drawing

Fig.1

MITSUBISHI Proprietary

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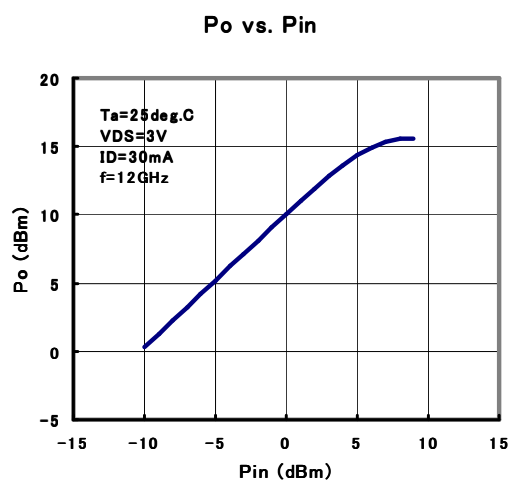
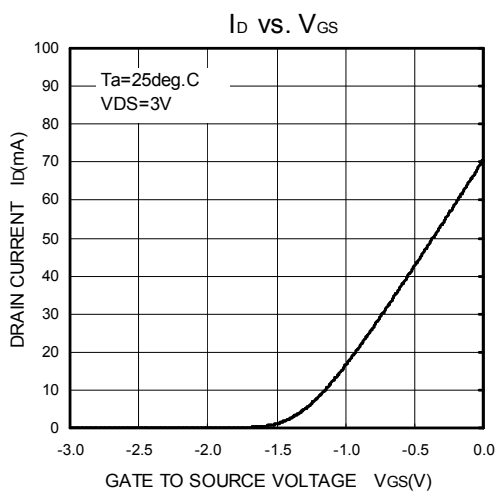
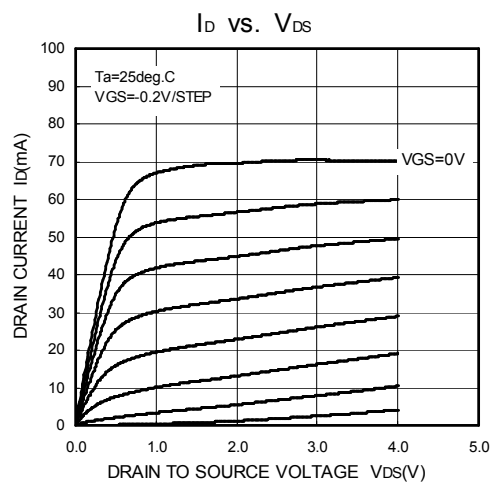
Fig.1



Unit: mm

- ① Gate
- ② Source
- ③ Drain

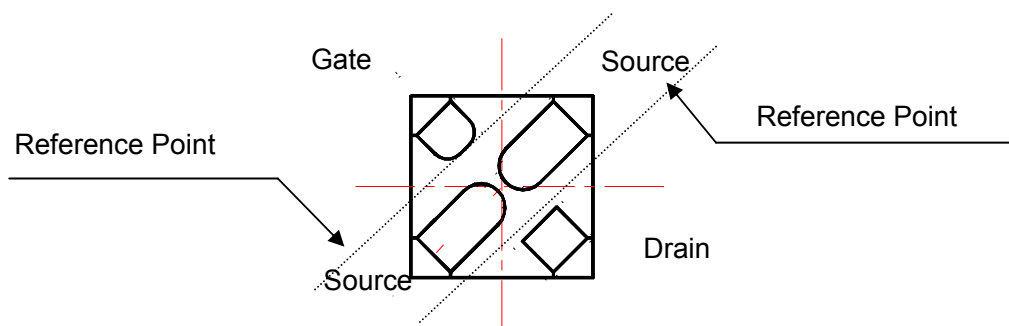
TYPICAL CHARACTERISTICS (Ta=25°C)



S PARAMETERS

(Conditions : $V_{DS}=3V, I_D=30mA, T_a=25deg.C$)

f (GHz)	S11		S21		S12		S22		K	MAG/MSG (dB)
	Mag.	Angle	Mag.	Angle	Mag.	Angle	Mag.	Angle		
1	0.984	-17.7	4.239	163.2	0.016	78.2	0.581	-11.3	0.18	24.3
2	0.946	-38.6	4.103	144.3	0.031	64.3	0.565	-26.2	0.32	21.3
3	0.906	-52.5	3.914	131.2	0.043	54.3	0.548	-34.3	0.43	19.6
4	0.857	-71.1	3.710	115.9	0.054	44.2	0.518	-45.5	0.53	18.4
5	0.811	-85.3	3.445	103.3	0.061	35.6	0.509	-54.9	0.64	17.5
6	0.771	-97.4	3.197	92.5	0.065	29.6	0.500	-61.4	0.76	16.9
7	0.736	-109.8	2.984	81.7	0.069	23.7	0.502	-66.9	0.86	16.4
8	0.710	-121.6	2.847	70.7	0.071	19.0	0.507	-72.1	0.93	16.0
9	0.679	-133.6	2.737	60.4	0.075	15.1	0.509	-75.9	0.99	15.6
10	0.645	-146.3	2.659	20.1	0.083	11.3	0.513	-79.6	0.99	15.1
11	0.594	-159.8	2.600	39.5	0.089	2.6	0.496	-84.2	1.09	12.8
12	0.549	-175.7	2.570	28.4	0.091	-2.7	0.472	-87.2	1.19	11.9
13	0.508	165.8	2.532	16.2	0.095	-9.0	0.443	-91.4	1.27	11.1
14	0.481	142.3	2.480	2.5	0.100	-18.0	0.399	-96.7	1.34	10.5
15	0.472	116.9	2.378	-10.9	0.101	-26.7	0.342	-101.7	1.45	9.7
16	0.508	92.7	2.289	-23.8	0.103	-34.7	0.279	-107.6	1.47	9.4
17	0.573	70.4	2.160	-37.5	0.105	-42.9	0.211	-112.1	1.44	9.2
18	0.646	52.2	1.975	-51.6	0.103	-50.4	0.135	-115.3	1.44	8.9



Note:

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