MITSUBISHI SEMICONDUCTOR <GaAs FET>

MGF1952A

Microwave Power MES FET (Leadless Ceramic Package)

DESCRIPTION

The MGF1952A 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=7.0dB , P1dB=17dBm (Typ.) @ f=12GHz

APPLICATION

S to Ku band power Amplifiers

QUALITY GRADE

GG

ORDERING INFORMATION

Tape & reel 3000pcs./reel

Outline Drawing

Fig.1

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.

ABSOLUTE MAXIMUM RATINGS (Ta=25°C)

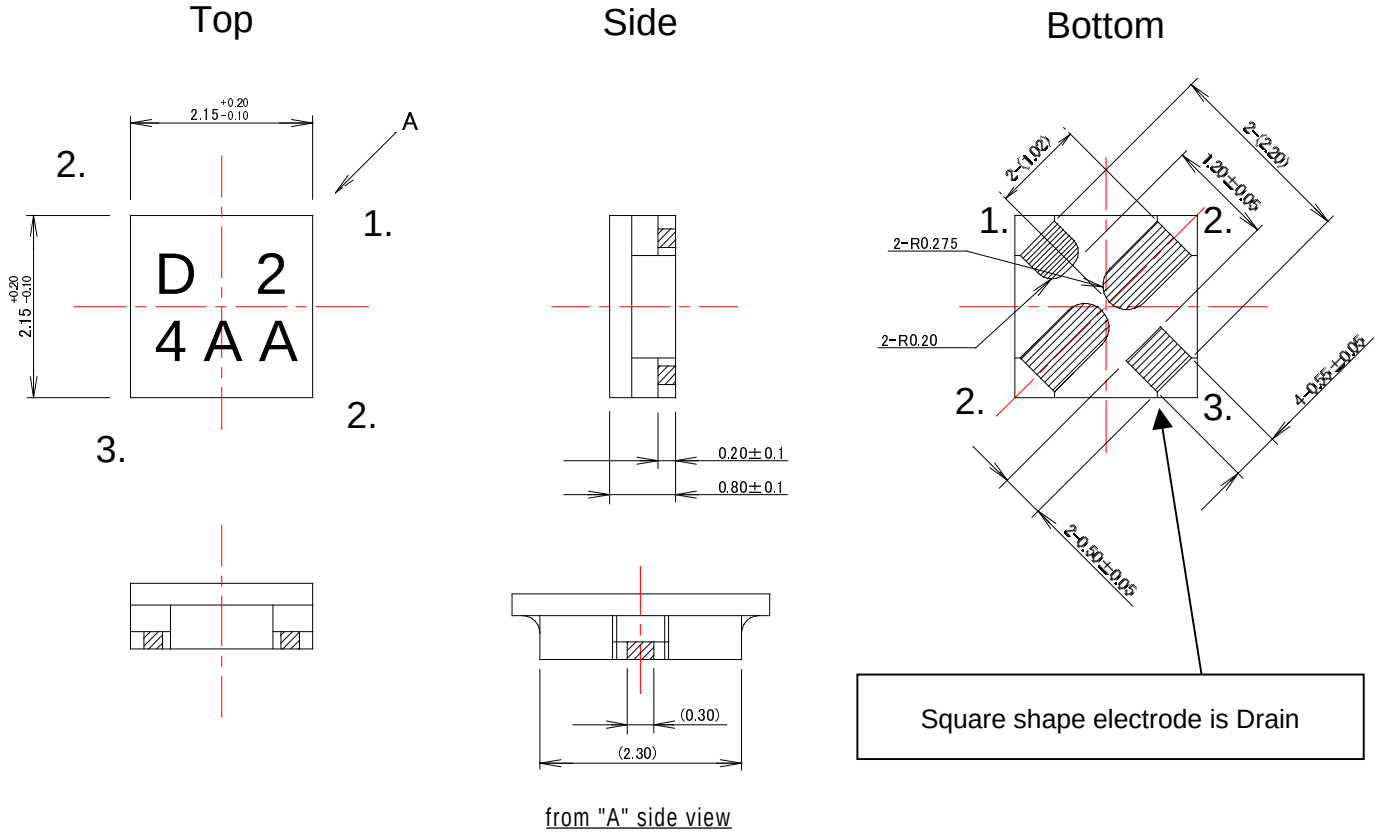
Symbol	Parameter	Ratings	Unit
V_{GDO}	Gate to drain voltage	-8	V
V_{GSO}	Gate to source voltage	-8	V
I_D	Drain current	240	mA
PT	Total power dissipation	600	mW
T_{ch}	Channel temperature	125	°C
T_{stg}	Storage temperature	-65 to +125	°C

ELECTRICAL CHARACTERISTICS (Ta=25°C)

Synbol	Parameter	Test conditions	Limits			Unit
			MIN.	TYP.	MAX	
$V_{(BR)GDO}$	Gate to drain breakdown voltage	Ig=-60μA	-8	-15	--	V
I_{DSS}	Saturated drain current	V_{GS}=0V,V_{DS}=3V	65	120	240	mA
$V_{GS(off)}$	Gate to source cut-off voltage	V_{DS}=3V,I_D=600μA	-0.3	-1.4	-3.5	V
P1dB	Output Power at 1dB gain Compression	V_{DS}=3V,ID=60mA f=12GHz	15	17	--	dBm
Glp	Linear Power Gain	V_{DS}=3V,ID=60mA f=12GHz,Pin=-5dBm	5	7	--	dB

Fig.1

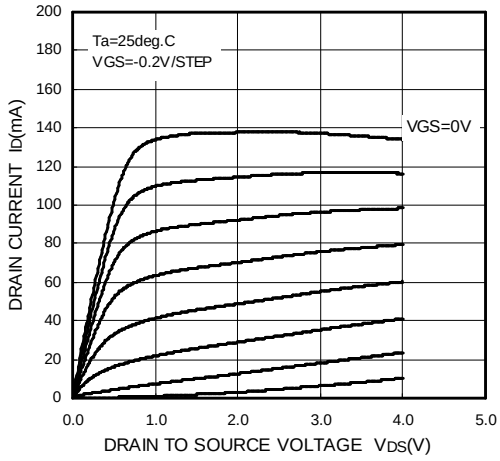
Unit : mm



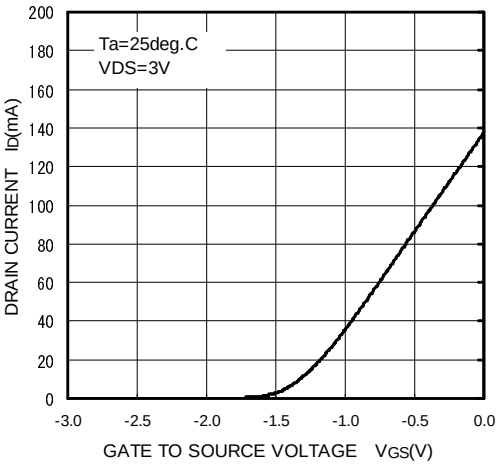
1. Gate
2. Source
3. Drain

TYPICAL CHARACTERISTICS (Ta=25°C)

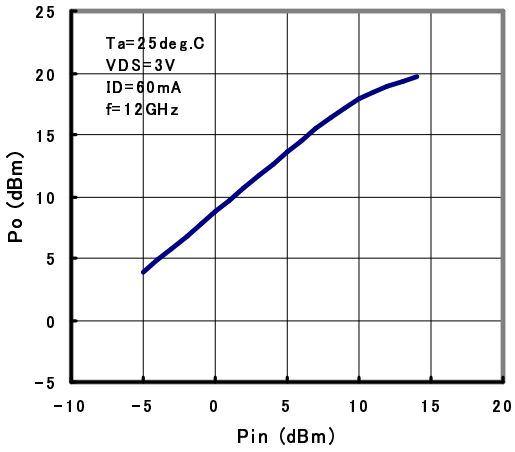
I_D vs. V_{DS}



I_D vs. V_{GS}



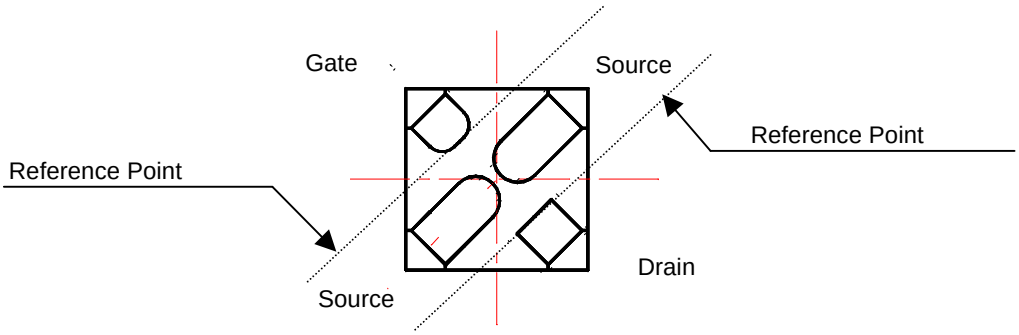
Po vs. Pin



S PARAMETERS

(Conditions : VDS=3V,ID=60mA,Ta=25deg.C)

f	S11		S21		S12		S22		K	MAG/MSG
(GHz)	Mag.	Angle	Mag.	Angle	Mag.	Angle	Mag.	Angle		(dB)
1	0.963	-32.6	6.695	154.5	0.024	72.0	0.314	-24.7	0.21	24.4
2	0.888	-66.5	6.024	128.4	0.043	52.3	0.297	-51.3	0.38	21.4
3	0.822	-89.7	5.294	110.6	0.056	42.0	0.281	-66.0	0.51	19.7
4	0.764	-114.3	4.599	93.5	0.065	32.3	0.259	-83.0	0.64	18.5
5	0.720	-132.8	4.030	79.6	0.071	24.2	0.254	-94.1	0.77	17.5
6	0.685	-149.2	3.591	67.1	0.075	19.2	0.250	-100.0	0.90	16.8
7	0.660	-165.2	3.243	54.4	0.079	14.0	0.247	-104.2	1.01	15.5
8	0.643	-179.8	2.993	42.2	0.082	9.4	0.243	-108.3	1.10	13.7
9	0.629	165.3	2.785	30.5	0.088	4.4	0.232	-111.5	1.15	12.6
10	0.624	150.0	2.614	18.5	0.095	-0.8	0.214	-115.4	1.17	11.9
11	0.618	133.3	2.460	6.4	0.099	-8.3	0.179	-119.8	1.25	11.0
12	0.620	115.8	2.310	-6.9	0.104	-14.8	0.137	-125.6	1.29	10.2
13	0.639	98.6	2.163	-19.8	0.107	-21.6	0.085	-134.3	13.27	9.6
14	0.670	81.9	2.017	-33.9	0.111	-30.5	0.025	-176.9	1.32	9.2
15	0.709	66.3	1.846	-47.2	0.113	-39.4	0.063	61.7	1.33	8.7
16	0.765	52.1	1.700	-60.1	0.113	-48.6	0.145	47.0	1.25	8.8
17	0.815	37.9	1.537	-73.9	0.112	-57.5	0.237	37.8	1.18	8.8
18	0.850	25.1	1.353	-88.1	0.109	-67.0	0.328	29.2	1.16	8.5



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