

PRELIMINARY

MITSUBISHI SEMICONDUCTOR<GaAs FET>

MGF0952P**L & S BAND GaAs FET [Plastic Mold Lead-less PKG]****DESCRIPTION**

The MGF0952P GaAs FET with an N-channel schottky Gate, is designed for use L/S band amplifiers.

FEATURES

- High output power
Po=36.5dBm(TYP.) @f=2.15GHz, Pin=25dBm
- High power gain
Glp=13.5dB(TYP.) @f=2.15GHz
- High power added efficiency
ηadd=50%(TYP.) @f=2.15GHz, Pin=25dBm
- Plastic Mold Lead-less PKG

APPLICATION

- For L/S Band power amplifiers

QUALITY

- GG

RECOMMENDED BIAS CONDITIONS

- Vds=10V • Ids=800mA • Rg=100Ω

Delivery Tape & Reel(1.5K)

Absolute maximum ratings (Ta=25°C)

Symbol	Parameter	Ratings	Unit
VGSO	Gate to source breakdown voltage	-15	V
VGDO	Gate to drain breakdown voltage	-15	V
ID	Drain current	3.5	A
IGR	Reverse gate current	-10	mA
IGF	Forward gate current	21	mA
PT	Total power dissipation	20.0	W
Tch	Channel temperature	150	°C
Tstg	Storage temperature	-40 to +150	°C

Recommended maximum ratings (Ta=25°C)

Symbol	Parameter	Ratings	Unit
Tch	Channel temperature	150	°C

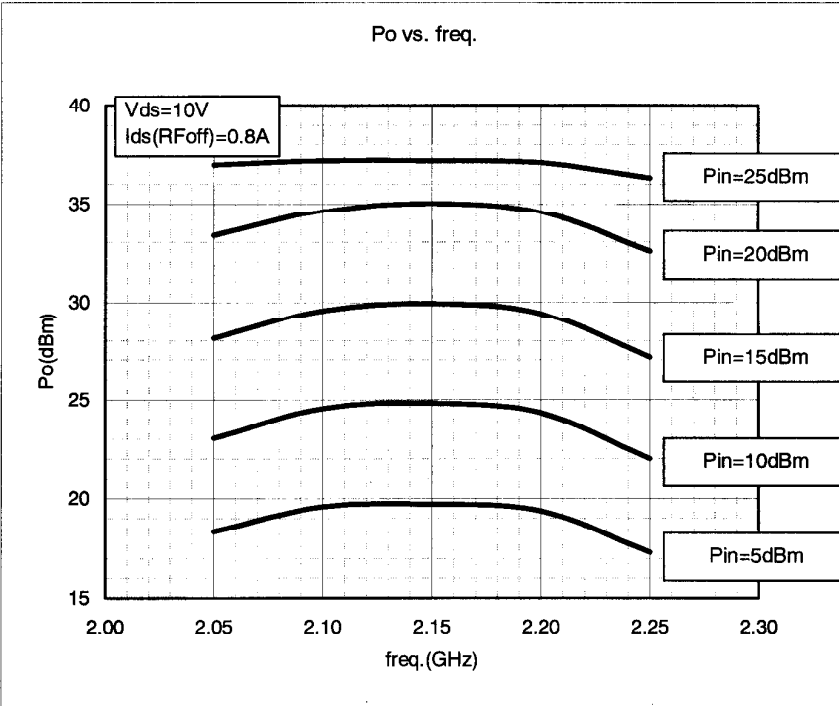
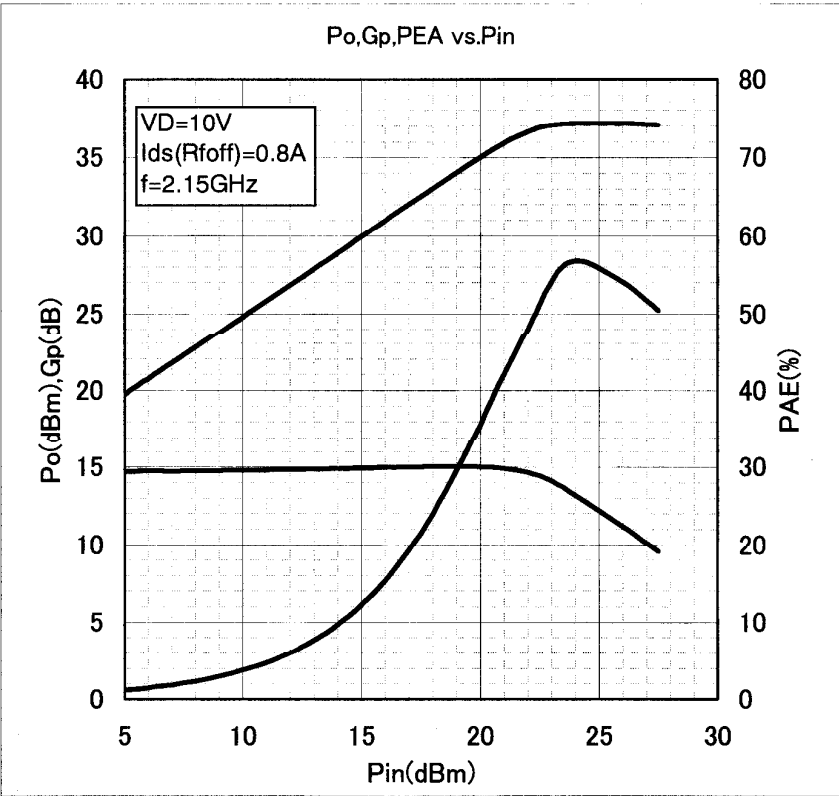
Electrical characteristics (Ta=25°C)

Symbol	Parameter	Test conditions	Limits			Unit
			Min.	Typ.	Max.	
VGS(off)	Gate to source cut-off voltage	VDS=3V, ID=12.6mA	-1	-3	-5	V
Po *1	Output power	VDS=10V, ID=800mA, f=2.15GHz	35.0	36.5	--	dBm
ηadd *1	Power added Efficiency	*1: Pin=25dBm, *2: Pin=15dBm	--	50	--	%
GLP *2	Linear Power Gain	*3: f1=2.15GHz, f2=2.16GHz	11	13.5	--	dB
IM3 *3	3 rd order Modulation Distortion	Po(SCL)=25dBm	--	-45	--	dBc
Rth(ch-c)	Thermal Resistance *1	ΔVf Method	--	5	6	°C/W

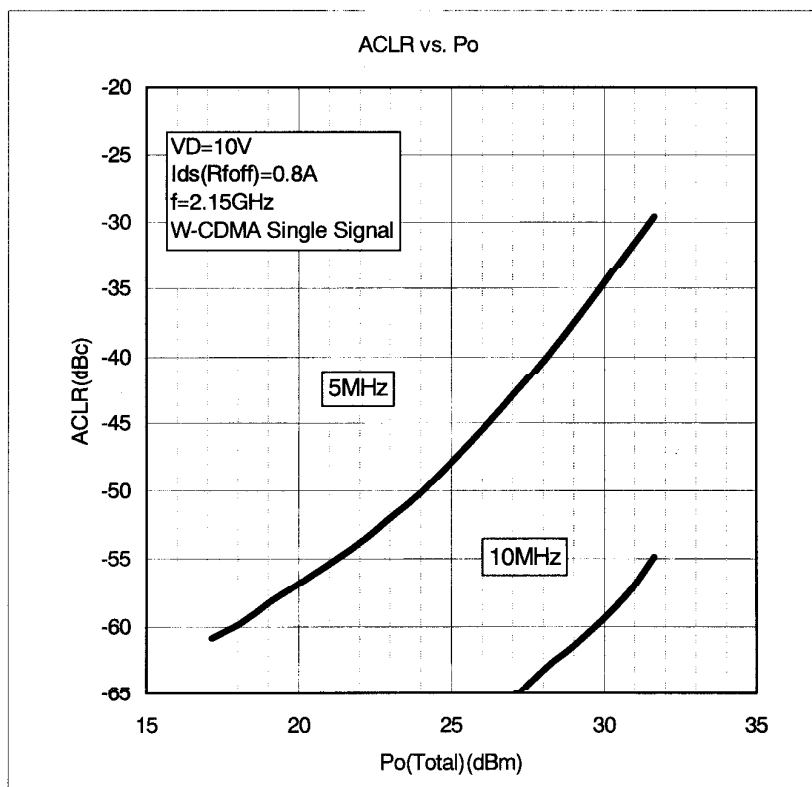
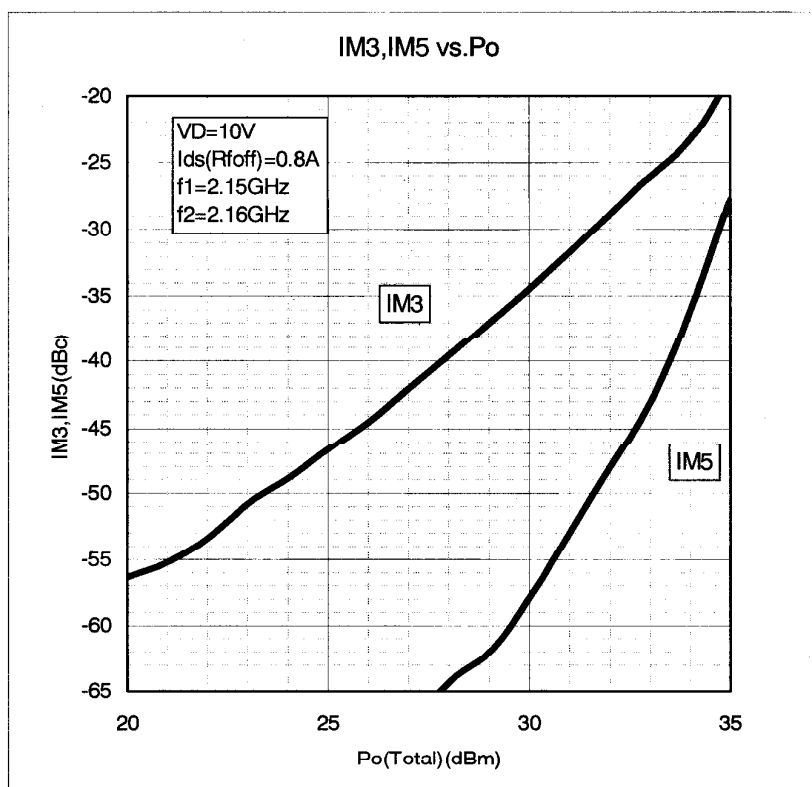
*1: Channel to case / Above parameters, ratings, limits are subject to change.

Fig.1

MGF0952P TYPICAL CHARACTERISTICS



MGF0952P TYPICAL CHARACTERISTICS



MGF0952P S PARAMETERS (Ta=25°C,VD=10V,ID=800mA)

f (GHz)	S Parameter(TYP.)								K	MSG/MAG (dB)
	S11		S21		S12		S22			
	Magn.	Angle(deg.)	Magn.	Angle(deg.)	Magn.	Angle(deg.)	Magn.	Angle(deg.)		
0.40	0.940	-140.4	4.840	104.5	0.017	22.6	0.763	191.5	0.156	24.4
0.60	0.941	-153.6	3.385	95.6	0.018	17.9	0.762	191.5	0.237	22.6
0.80	0.942	-169.0	2.602	89.5	0.019	14.7	0.762	191.4	0.396	21.3
1.00	0.943	-169.5	2.098	80.8	0.019	10.0	0.762	191.3	0.339	20.3
1.20	0.943	-169.3	1.764	77.2	0.019	10.0	0.762	191.1	0.390	19.6
1.40	0.944	-169.7	1.521	74.0	0.020	9.2	0.762	191.0	0.445	18.9
1.60	0.944	-170.0	1.341	70.2	0.020	10.2	0.763	190.8	0.500	18.3
1.80	0.945	-170.0	1.200	67.0	0.019	8.3	0.763	190.7	0.559	17.9
2.00	0.945	-170.0	1.084	64.3	0.019	9.9	0.764	190.5	0.637	17.5
2.20	0.946	-170.0	1.016	70.7	0.020	20.8	0.766	190.2	0.852	17.0
2.40	0.946	-170.1	0.945	68.6	0.020	21.0	0.767	190.0	0.882	16.7
2.60	0.946	-170.8	0.866	66.0	0.019	20.0	0.768	189.8	0.993	16.7
2.80	0.946	-171.2	0.839	63.9	0.020	20.5	0.770	189.5	0.965	16.2
3.00	0.946	-171.3	0.797	61.7	0.020	21.1	0.772	189.2	1.031	14.9
3.20	0.946	-172.1	0.757	59.6	0.020	20.4	0.774	188.9	1.085	14.1
3.40	0.946	-173.3	0.720	56.9	0.019	20.3	0.776	188.6	1.140	13.5
3.60	0.946	-174.5	0.692	53.8	0.019	22.5	0.779	188.3	1.277	12.6
3.80	0.946	-175.6	0.657	51.4	0.019	26.3	0.782	187.9	1.366	11.9
4.00	0.946	-177.1	0.626	48.6	0.019	26.8	0.785	187.5	1.417	11.4
4.20	0.945	-178.3	0.596	45.8	0.020	28.3	0.788	187.1	1.427	11.0
4.40	0.945	-178.7	0.565	43.6	0.020	29.6	0.791	186.7	1.473	10.5
4.60	0.945	-179.3	0.535	41.4	0.020	27.3	0.794	186.3	1.544	10.0
4.80	0.944	-179.7	0.509	39.3	0.020	28.0	0.796	185.9	1.598	9.5
5.00	0.944	-180.1	0.486	37.6	0.020	28.5	0.800	185.4	1.699	9.0
5.20	0.943	-180.7	0.466	36.5	0.020	29.1	0.803	184.9	1.748	8.6
5.40	0.942	-181.1	0.448	34.7	0.020	28.4	0.806	184.4	1.812	8.3
5.60	0.941	-182.0	0.435	33.5	0.020	28.9	0.809	183.9	1.901	7.9
5.80	0.941	-182.7	0.422	32.4	0.020	28.5	0.811	183.4	1.963	7.6
6.00	0.940	-182.8	0.413	31.1	0.021	31.7	0.814	182.9	1.975	7.4

