

MITSUBISHI SEMICONDUCTOR <GaAs FET>

# MGF0953P

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

## DESCRIPTION

The MGF0953P GaAs FET with an N-channel schottky gate, is designed for use L & S band amplifiers.

## FEATURES

- High output power  
Po = 28.0dBm(TYP.) @f=2.15GHz, Pin=10dBm
- High linear power gain  
GLP = 16.5dB(TYP.) @f=2.15GHz
- High power added efficiency  
PAE = 40%(TYP.) @f=2.15GHz, Pin=10dBm
- Plastic Mold Lead less PKG

## APPLICATION

- For L & S band amplifiers

## QUALITY GRADE

- GG

## RECOMMENDED BIAS CONDITIONS

VDS = 10 (V)  
ID = 0.15 (A)  
RG = 1000 Ohm (MAX)

## PACKAGING

Tape & Reel (1.5K/Reel)

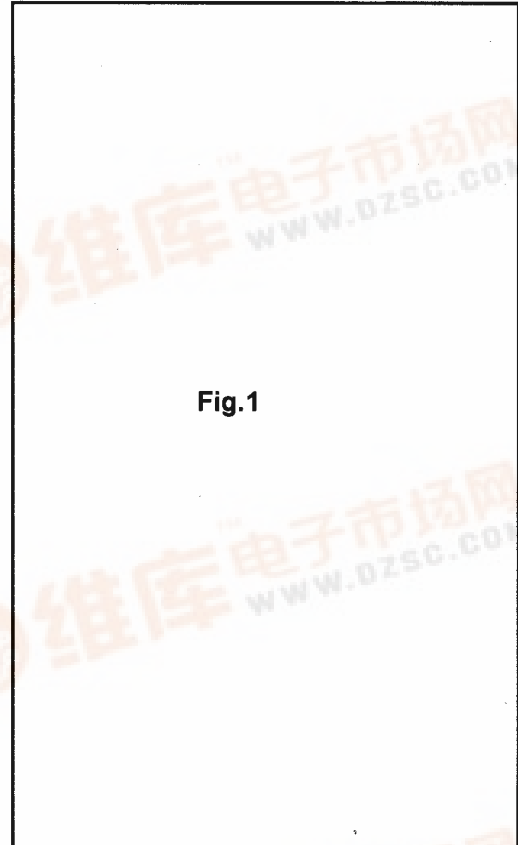


Fig.1

## ABSOLUTE MAXIMUM RATINGS

(Ta=25deg.C)

Symbol	Parameter	Ratings	Unit
VGDO	Gate to drain voltage	-15	V
VGSO	Gate to source voltage	-15	V
ID	Drain current	0.4	A
IGR	Reverse gate current	-1.25	mA
IGF	Forward gate current	5	mA
PT *1	Total power dissipation	6.25	W
Tch	Channel temperature	150	deg.C
Tstg	Storage temperature	-40 to +150	deg.C

\*1 : Tc=25deg.C

< Keep safety first in your circuit designs! >  
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## ELECTRICAL CHARACTERISTICS

(Ta=25deg.C)

Symbol	Parameter	Test conditions	Limits			Unit
			Min.	Typ.	Max.	
Vgs(off)	Gate to source cut-off voltage	VDS=3V, ID=0.1mA	-2.0	--	-5.0	V
Po *1	Output Power	VDS=10V, ID(Rf)ff=0.15A, f=2.15GHz	26	28	--	dBm
PAE *1	Power added Efficiency	*1 : Pin=10dBm	--	40	--	%
GLP *2	Linear power gain	*2 : Pin=0dBm	16.5	18.0	--	dB
Rth (Ch-C)	Thermal resistance	Channel to Case	--	14	20	deg.C/W

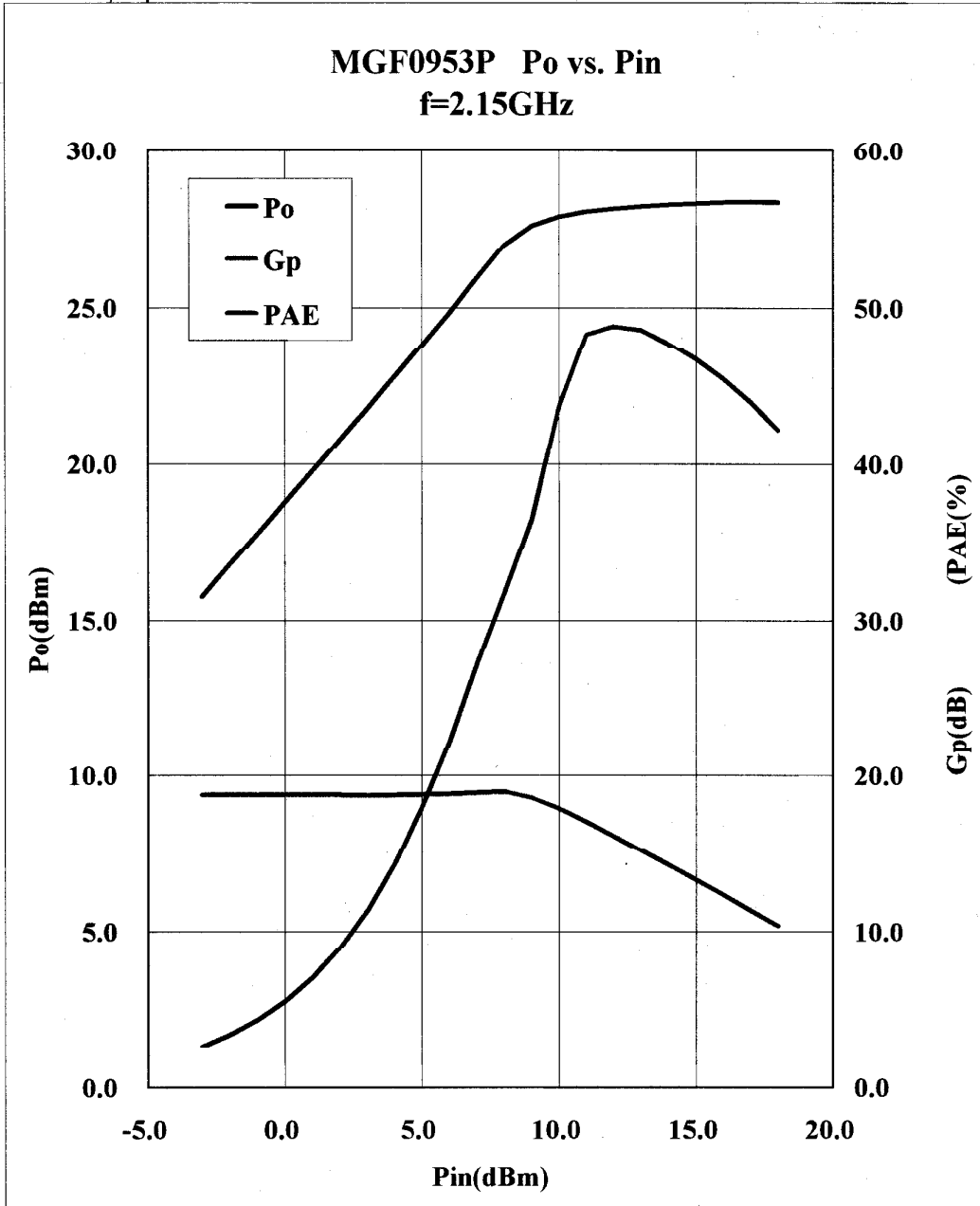


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TYPICAL CHARACTERISTICS

VD=10V, Idq=0.15A



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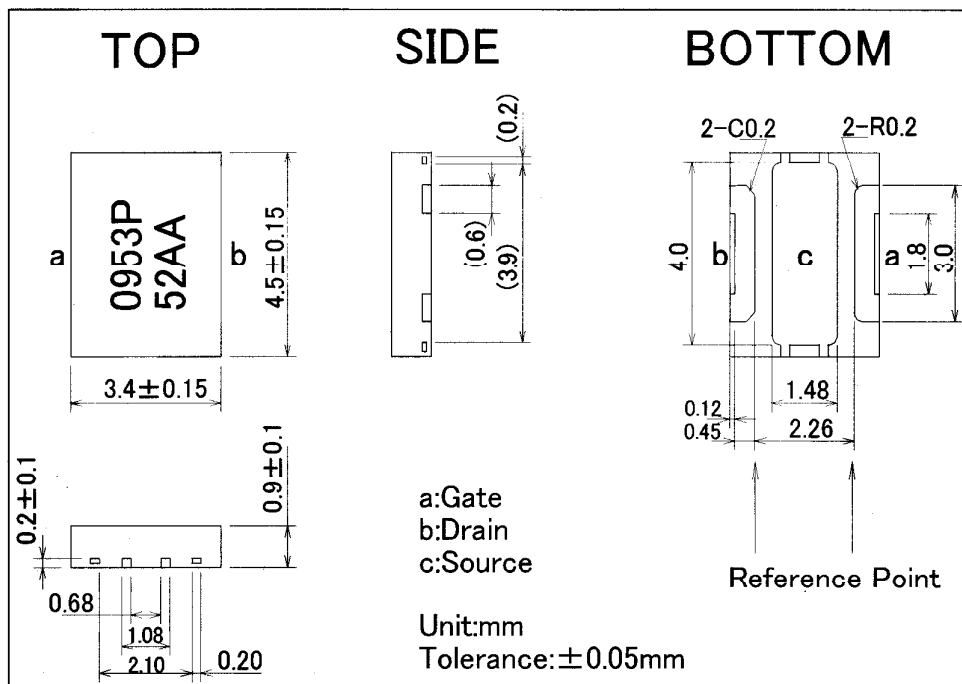
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## TYPICAL CHARACTERISTICS

S PARAMETERS (Ta=25deg.C, VDS=10V, ID=0.15A)

freq (GHz)	S11		S21		S12		S22		K	MSG/MAG (dB)
	(mag)	(ang)	(mag)	(ang)	(mag)	(ang)	(mag)	(ang)		
0.60	0.966	-52.1	6.046	143.4	0.031	55.5	0.266	-61.3	0.09	22.8
0.80	0.941	-66.3	5.525	133.3	0.038	47.3	0.290	-73.4	0.15	21.6
1.00	0.931	-77.5	5.068	124.9	0.043	40.5	0.314	-82.8	0.14	20.7
1.20	0.923	-87.8	4.650	117.3	0.047	33.7	0.331	-88.9	0.16	20.0
1.40	0.943	-95.7	4.306	111.1	0.051	28.6	0.350	-93.6	0.05	19.3
1.60	0.934	-103.0	4.031	104.4	0.052	22.6	0.377	-97.3	0.07	18.9
1.80	0.939	-110.0	3.751	98.1	0.055	17.7	0.393	-101.3	0.04	18.3
2.00	0.917	-115.3	3.446	93.4	0.056	13.6	0.404	-103.9	0.13	17.9
2.20	0.903	-120.1	3.221	89.3	0.057	10.3	0.413	-104.6	0.20	17.5
2.40	0.905	-127.8	2.952	83.3	0.056	5.7	0.417	-110.0	0.22	17.2
2.60	0.900	-131.8	2.816	79.3	0.058	2.8	0.435	-111.7	0.23	16.9
2.80	0.897	-135.3	2.666	75.7	0.059	-1.0	0.449	-113.1	0.25	16.6
3.00	0.882	-138.0	2.521	71.5	0.059	-4.4	0.460	-116.3	0.35	16.3
3.20	0.875	-141.2	2.424	67.6	0.059	-7.4	0.479	-117.9	0.38	16.1
3.40	0.871	-143.6	2.316	64.0	0.059	-10.4	0.493	-120.1	0.42	15.9
3.60	0.860	-147.2	2.221	60.0	0.060	-13.7	0.512	-122.6	0.47	15.7
3.80	0.857	-150.2	2.120	56.5	0.059	-17.6	0.518	-124.9	0.52	15.5
4.00	0.852	-152.5	2.031	53.3	0.059	-20.2	0.528	-127.1	0.57	15.3
4.20	0.856	-155.1	1.965	49.5	0.059	-23.4	0.547	-128.6	0.57	15.2
4.40	0.857	-157.3	1.896	46.3	0.059	-24.6	0.560	-130.2	0.57	15.1
4.60	0.851	-159.5	1.840	43.1	0.059	-26.8	0.574	-132.0	0.60	14.9
4.80	0.851	-161.5	1.793	40.0	0.060	-28.2	0.589	-132.9	0.60	14.7
5.00	0.843	-163.4	1.750	37.1	0.061	-30.1	0.598	-133.6	0.64	14.6



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