



ELECTROSTATIC SENSITIVE DEVICE
OBSERVE HANDLING PRECAUTIONS

MITSUBISHI RF POWER MOS FET

RD00HHS1

RoHS Compliance, Silicon MOSFET Power Transistor 30MHz,0.3W

DESCRIPTION

RD00HHS1 is a MOS FET type transistor specifically designed for HF RF amplifiers applications.

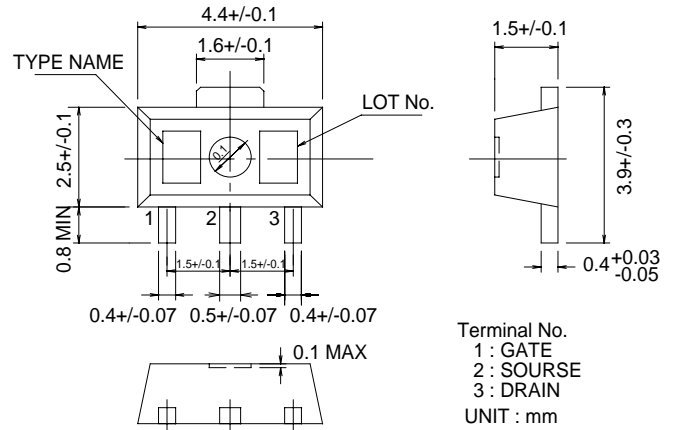
FEATURES

High power gain
Pout>0.3W, Gp>19dB @ Vdd=12.5V, f=30MHz

APPLICATION

For output stage of high power amplifiers in HF Band mobile radio sets.

OUTLINE DRAWING



RoHS COMPLIANT

RD00HHS1-101,T113 is a RoHS compliant products.

This product include the lead in high melting temperature type solders.

How ever,it applicable to the following exceptions of RoHS Directions.

- 1.Lead in high melting temperature type solders(i.e.tin-lead solder alloys containing more than85% lead.)

ABSOLUTE MAXIMUM RATINGS

(Tc=25°C UNLESS OTHERWISE NOTED)

SYMBOL	PARAMETER	CONDITIONS	RATINGS	UNIT
Vdss	Drain to source voltage	Vgs=0V	30	V
Vgss	Gate to source voltage	Vds=0V	±10	V
Pch	Channel dissipation	Tc=25°C	3.1	W
Pin	Input power	Zg=Zl=50Ω	10	mW
ID	Drain current	-	200	mA
Tch	Channel Temperature	-	150	°C
Tstg	Storage temperature	-	-40 to +125	°C
Rth j-c	Thermal resistance	Junction to case	40	°C/W

Note 1: Above parameters are guaranteed independently.

ELECTRICAL CHARACTERISTICS

(Tc=25°C, UNLESS OTHERWISE NOTED)

SYMBOL	PARAMETER	CONDITIONS	LIMITS			UNIT
			MIN	TYP	MAX.	
Idss	Zero gate voltage drain current	VDS=17V, VGS=0V	-	-	25	uA
Igss	Gate to source leak current	VGS=10V, VDS=0V	-	-	1	uA
Vth	Gate threshold Voltage	VDS=12V, Ids=1mA	1	2	3	V
Pout	Output power	VDD=12.5V, Pin=4mW,	0.3	0.7	-	W
ηD	Drain efficiency	f=30MHz, Idq=50mA	55	65	-	%

Note : Above parameters , ratings , limits and conditions are subject to change.



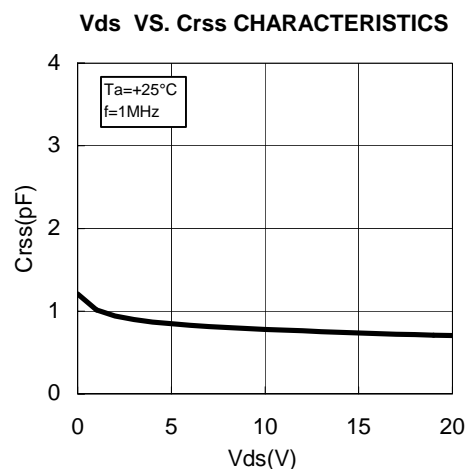
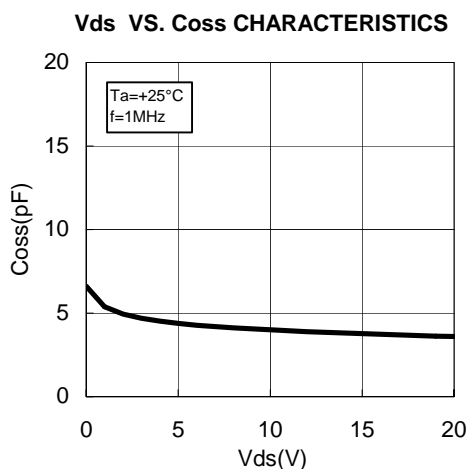
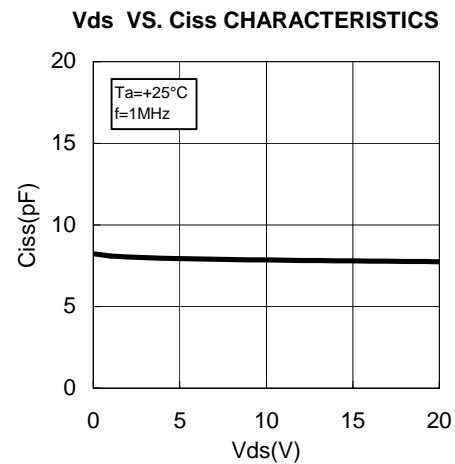
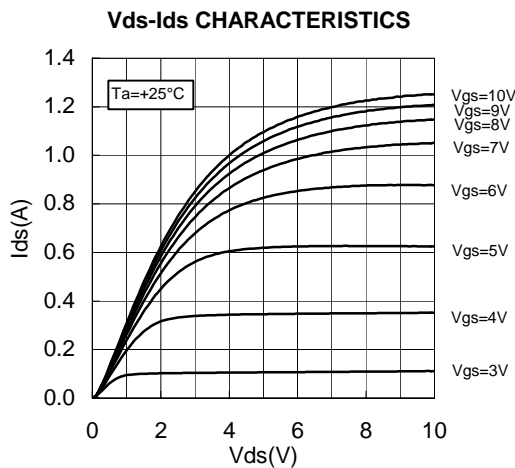
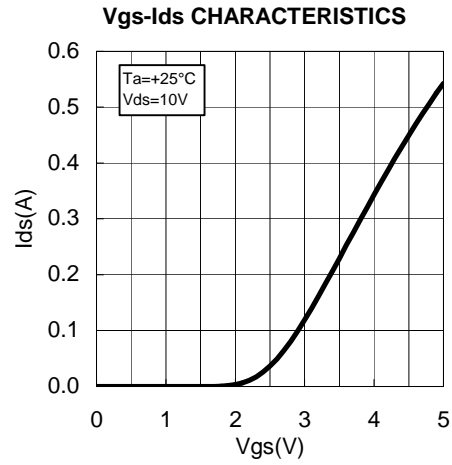
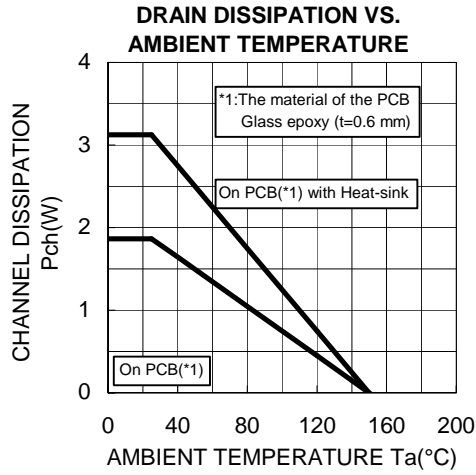
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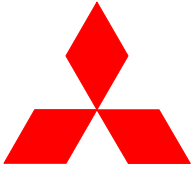
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TYPICAL CHARACTERISTICS





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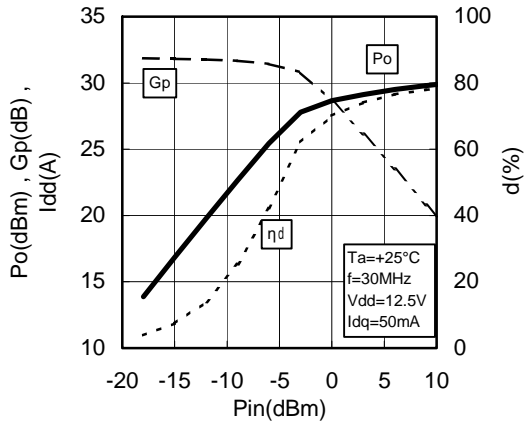
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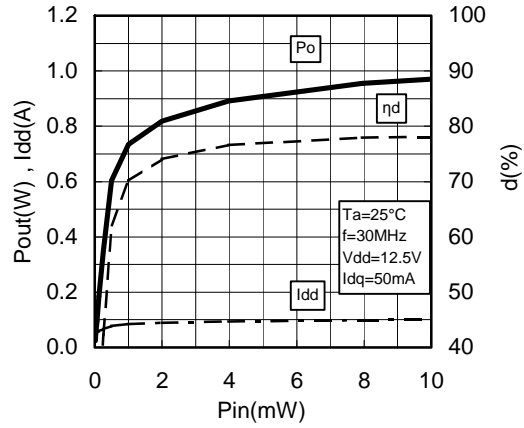
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TYPICAL CHARACTERISTICS

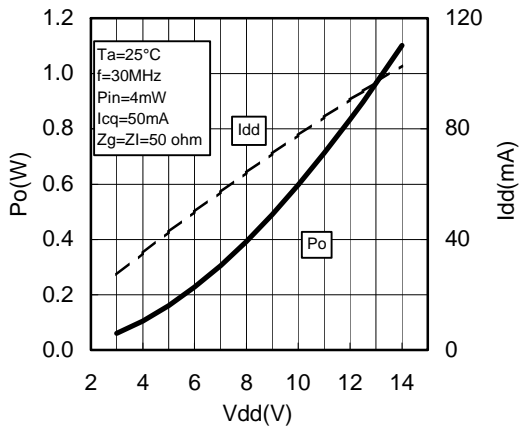
Pin-Po CHARACTERISTICS



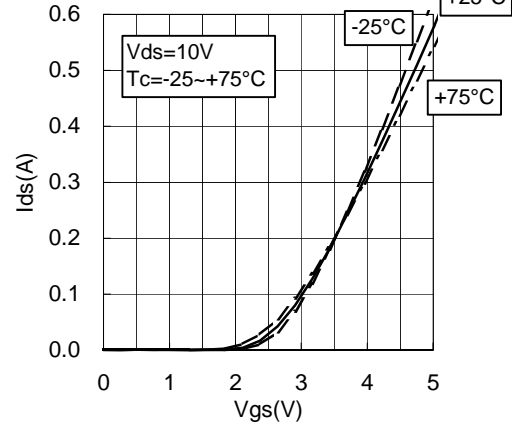
Pin-Po CHARACTERISTICS



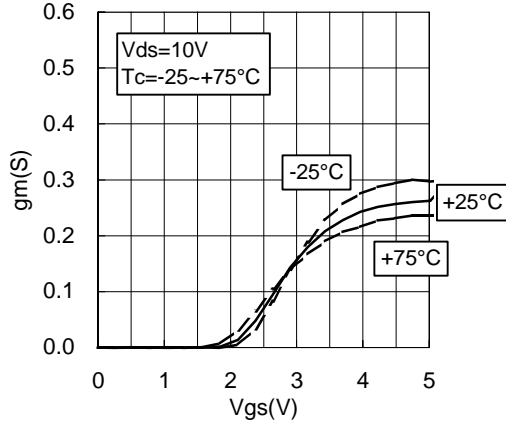
Vdd-Po CHARACTERISTICS

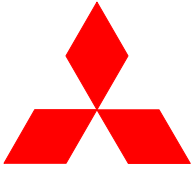


Vgs-Ids CHARACTERISTICS 2



Vgs-gm CHARACTERISTICS





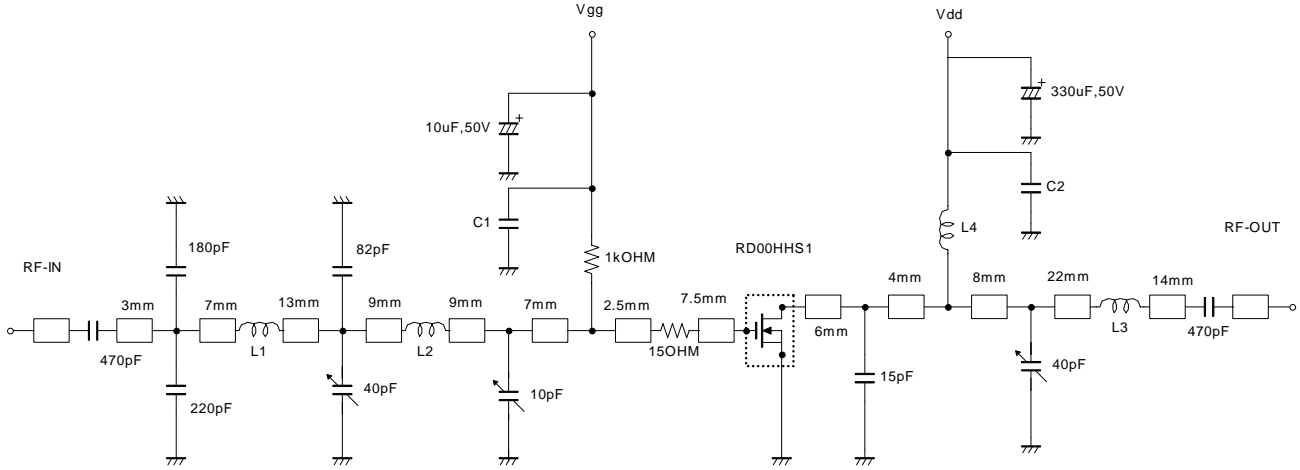
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TEST CIRCUIT(f=30MHz)



L1:LAL04NAR27(0.27mH)

L2:LAL04NAR39(0.39uH)

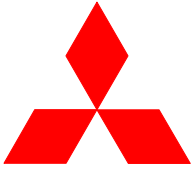
L3:LAL04NAR39(0.39uH)

L4:LAL04NA1R0(1uH)

C1,C2:100pF,0.022uF,0.1uF in parallel

Note:Board material-glass epoxy substrate

Micro strip line width=1.0mm/50OHM,er:4.8,t=0.6mm



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RD00HHS1 S-PARAMETER DATA (@Vdd=12.5V, Id=50mA)

Freq. [MHz]	S11		S21		S12		S22	
	(mag)	(ang)	(mag)	(ang)	(mag)	(ang)	(mag)	(ang)
10	1.002	-3.6	12.533	178.3	0.003	90.3	0.920	-2.7
30	1.003	-9.9	12.631	174.6	0.008	82.8	0.919	-6.9
50	1.005	-16.8	12.784	170.6	0.013	79.5	0.918	-11.2
100	1.007	-33.5	12.820	159.1	0.025	67.4	0.898	-22.4
150	0.989	-49.8	12.355	147.5	0.035	56.5	0.866	-32.8
200	0.963	-64.0	11.571	136.8	0.042	47.5	0.824	-42.2
250	0.936	-76.9	10.697	127.3	0.048	38.2	0.781	-50.4
300	0.911	-87.9	9.791	119.1	0.053	30.6	0.745	-57.9
350	0.892	-97.7	8.972	111.4	0.055	24.6	0.711	-64.6
400	0.872	-106.2	8.202	104.9	0.057	18.5	0.685	-70.2
450	0.857	-113.7	7.533	98.9	0.058	13.1	0.665	-75.5
500	0.846	-120.1	6.921	93.4	0.058	8.7	0.649	-80.5
550	0.834	-126.0	6.386	88.4	0.059	4.7	0.640	-85.2
600	0.830	-131.0	5.894	83.7	0.058	0.2	0.630	-89.2
650	0.826	-135.9	5.484	79.3	0.057	-2.8	0.625	-93.3
700	0.821	-140.2	5.097	75.1	0.056	-6.9	0.623	-97.1
750	0.815	-144.0	4.749	71.0	0.055	-9.8	0.623	-100.7
800	0.812	-147.5	4.443	67.3	0.053	-13.0	0.623	-104.3
850	0.814	-151.0	4.167	63.8	0.051	-15.0	0.627	-107.7
900	0.816	-153.9	3.904	60.1	0.049	-17.6	0.630	-110.9
950	0.811	-156.8	3.670	56.8	0.048	-20.8	0.634	-113.9
1000	0.814	-159.5	3.471	53.7	0.046	-22.2	0.640	-117.1