

ELECTROSTATIC SENSITIVE DEVICE
OBSERVE HANDLING PRECAUTIONS

MITSUBISHI RF POWER MOS FET

RD01MUS1

Silicon MOSFET Power Transistor 520MHz,1W

DESCRIPTION

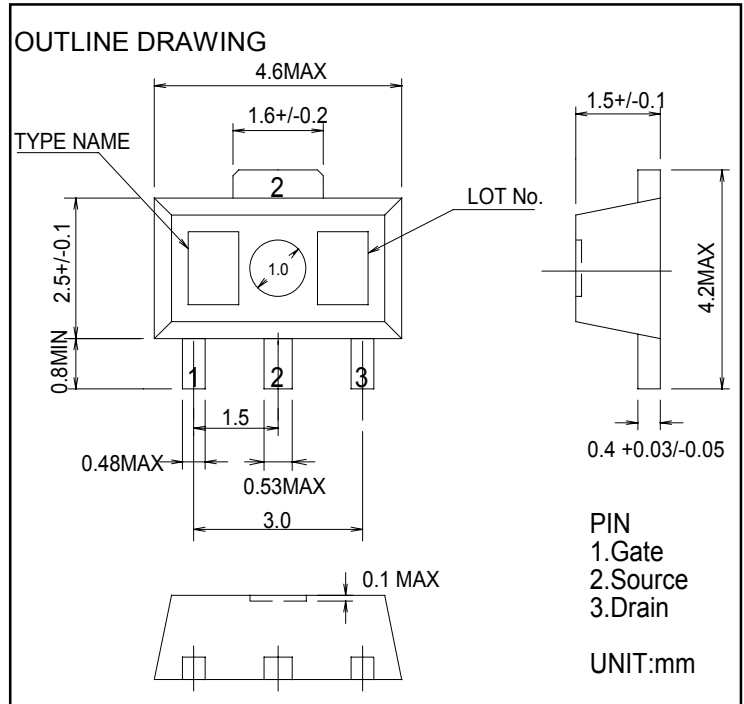
RD01MUS1 is a MOS FET type transistor specifically designed for VHF/UHF RF amplifiers applications.

FEATURES

- High power gain:
Pout>0.8W, Gp>14dB @Vdd=7.2V,f=520MHz
- High Efficiency: 65%typ.

APPLICATION

For output stage of high power amplifiers in VHF/UHF Band mobile radio sets.



ABSOLUTE MAXIMUM RATINGS

(Tc=25°C UNLESS OTHERWISE NOTED)

SYMBOL	PARAMETER	CONDITIONS	RATINGS	UNIT
VDSS	Drain to source voltage		30	V
VGSS	Gate to source voltage		+/-10	V
Pch	Channel dissipation	Tc=25°C	3.6	W
Tj	Junction Temperature		150	°C
Tstg	Storage temperature		-40 to +125	°C
Rth-c	Thermal resistance	Junction to case	34.5	°C/W

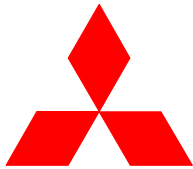
Note 1: Above parameters are guaranteed independently.

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	-	-	50	uA
Igss	Gate to source leak current	VGS=10V, VDS=0V	-	-	1	uA
Vth	Gate threshold Voltage	VDS=12V, Ids=1mA	1	1.8	3	V
Pout	Output power	VDD=7.2V, Pin=30mW	0.8	1.4	-	W
ηD	Drain efficiency	f=520MHz, Idq=100mA	50	65	-	%

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



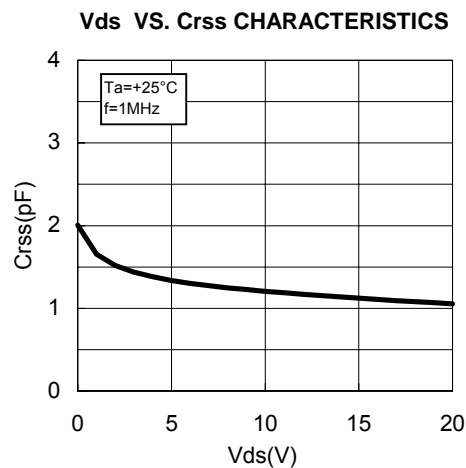
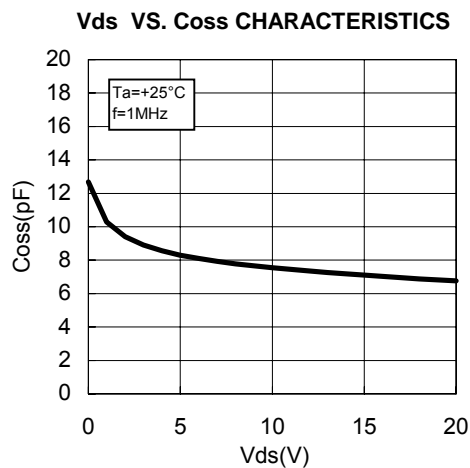
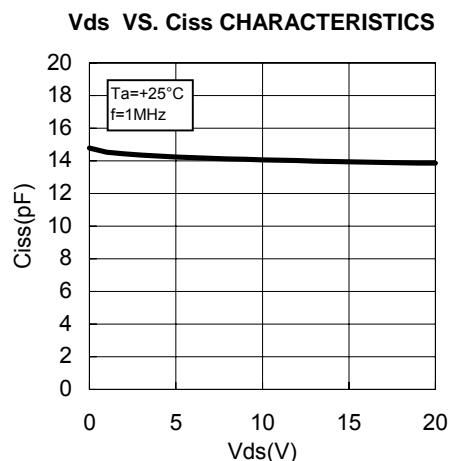
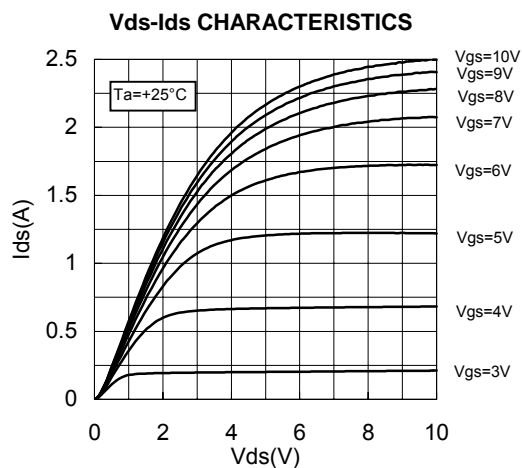
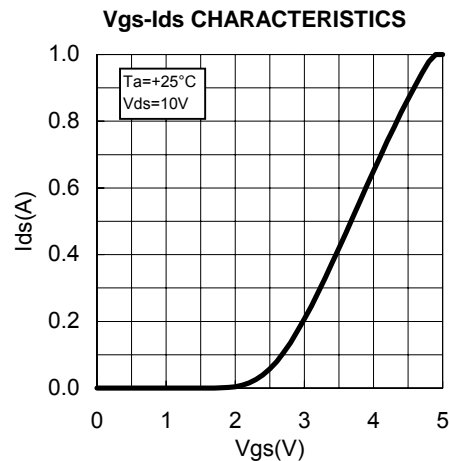
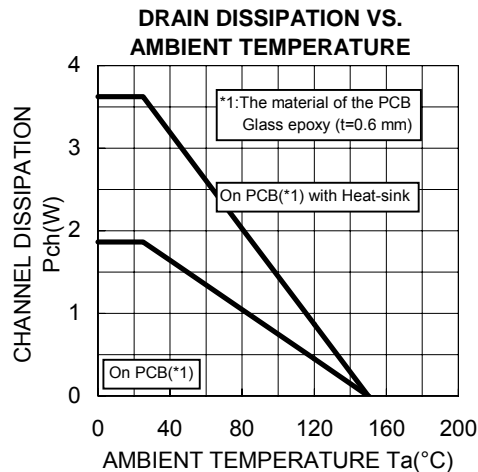
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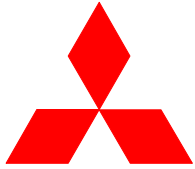
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TYPICAL CHARACTERISTICS





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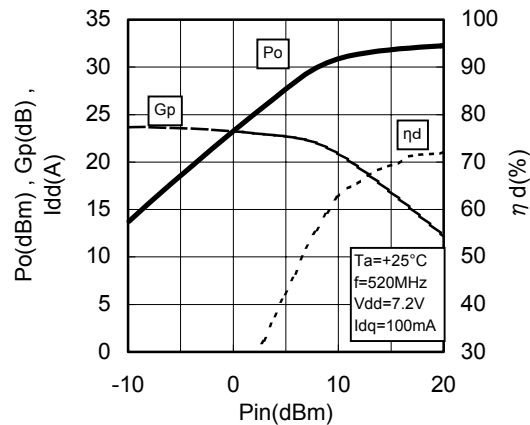
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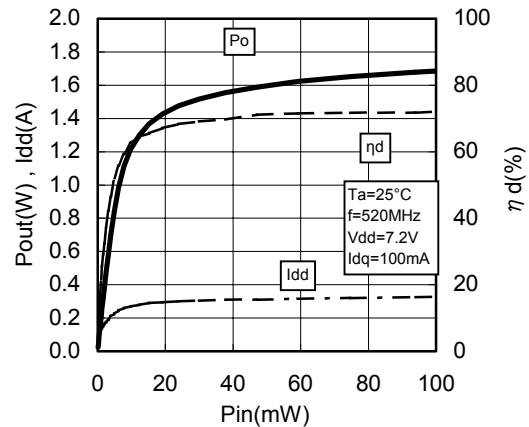
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TYPICAL CHARACTERISTICS

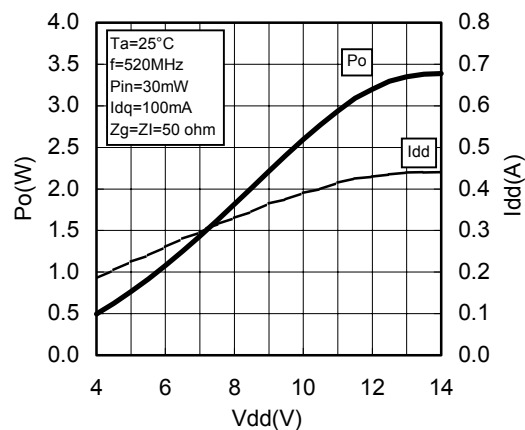
Pin-Po CHARACTERISTICS

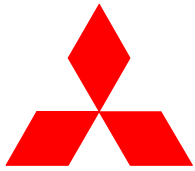


Pin-Po CHARACTERISTICS



Vdd-Po CHARACTERISTICS





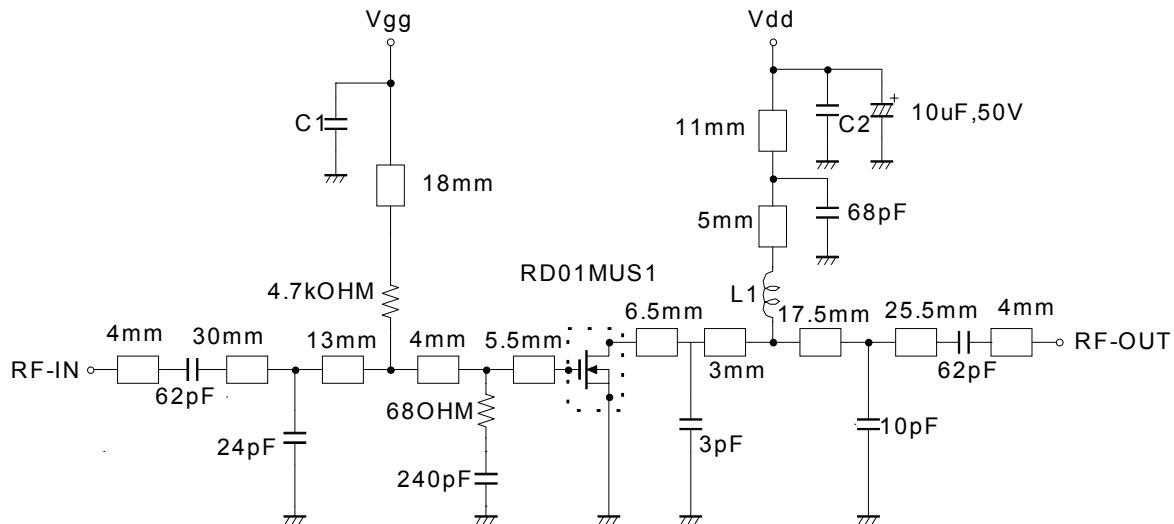
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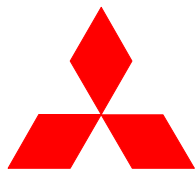
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EQUIVALENT CIRCUIT(f=520MHz)



L1: Enameled wire 5Turns,D:0.43mm,2.46mmO.D
C1,C2: 1000pF,0.022uF in parallel

Note:Board material-glass epoxi substrate
Micro strip line width=1.0mm/50OHM,er:4.8,t=0.6mm



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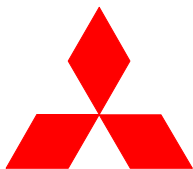
Silicon MOSFET Power Transistor 520MHz,1W

RD01MSU1 S-PARAMETER DATA (@Vdd=7.2V, Id=100mA)

Freq. [MHz]	S11		S21		S12		S22	
	(mag)	(ang)	(mag)	(ang)	(mag)	(ang)	(mag)	(ang)
100	0.945	-72.3	0.039	44.5	19.517	135.2	0.742	-57.4
150	0.896	-96.7	0.046	29.2	15.937	119.5	0.665	-76.6
200	0.856	-113.9	0.049	18.5	13.050	107.7	0.612	-90.6
250	0.833	-126.2	0.050	11.2	10.830	98.6	0.581	-100.4
300	0.819	-135.1	0.050	5.0	9.194	91.6	0.568	-107.8
350	0.810	-141.9	0.049	-0.3	7.890	85.3	0.565	-113.8
400	0.806	-147.7	0.047	-4.2	6.868	80.1	0.571	-118.5
450	0.804	-152.2	0.046	-7.7	6.084	75.3	0.580	-122.3
500	0.808	-156.4	0.044	-11.0	5.382	70.7	0.591	-126.1
520	0.809	-157.8	0.044	-12.4	5.139	69.1	0.596	-127.5
550	0.812	-159.9	0.042	-13.7	4.831	66.7	0.605	-129.4
600	0.813	-163.0	0.040	-16.2	4.356	62.7	0.618	-132.2
650	0.819	-166.0	0.038	-18.7	3.931	59.3	0.633	-135.1
700	0.824	-168.6	0.036	-20.8	3.597	56.0	0.649	-137.6
750	0.827	-171.0	0.034	-22.3	3.283	52.4	0.664	-140.1
800	0.834	-173.3	0.031	-23.7	2.991	49.8	0.678	-142.5
850	0.841	-175.5	0.029	-24.6	2.779	47.1	0.695	-144.5
900	0.845	-177.4	0.026	-25.9	2.554	43.8	0.708	-146.7
950	0.852	-179.4	0.024	-25.4	2.350	41.9	0.720	-148.9
1000	0.857	-178.6	0.022	-24.3	2.209	39.4	0.736	-150.7
1050	0.864	-176.9	0.019	-23.5	2.035	36.3	0.747	-152.4
1100	0.868	-175.0	0.017	-20.1	1.889	34.8	0.759	-154.6

RD01MSU1 S-PARAMETER DATA (@Vdd=12.5V, Id=100mA)

Freq. [MHz]	S11		S21		S12		S22	
	(mag)	(ang)	(mag)	(ang)	(mag)	(ang)	(mag)	(ang)
100	0.945	-72.3	0.039	44.5	19.517	135.2	0.742	-57.4
150	0.896	-96.7	0.046	29.2	15.937	119.5	0.665	-76.6
200	0.856	-113.9	0.049	18.5	13.050	107.7	0.612	-90.6
250	0.833	-126.2	0.050	11.2	10.830	98.6	0.581	-100.4
300	0.819	-135.1	0.050	5.0	9.194	91.6	0.568	-107.8
350	0.810	-141.9	0.049	-0.3	7.890	85.3	0.565	-113.8
400	0.806	-147.7	0.047	-4.2	6.868	80.1	0.571	-118.5
450	0.804	-152.2	0.046	-7.7	6.084	75.3	0.580	-122.3
500	0.808	-156.4	0.044	-11.0	5.382	70.7	0.591	-126.1
520	0.809	-157.8	0.044	-12.4	5.139	69.1	0.596	-127.5
550	0.812	-159.9	0.042	-13.7	4.831	66.7	0.605	-129.4
600	0.813	-163.0	0.040	-16.2	4.356	62.7	0.618	-132.2
650	0.819	-166.0	0.038	-18.7	3.931	59.3	0.633	-135.1
700	0.824	-168.6	0.036	-20.8	3.597	56.0	0.649	-137.6
750	0.827	-171.0	0.034	-22.3	3.283	52.4	0.664	-140.1
800	0.834	-173.3	0.031	-23.7	2.991	49.8	0.678	-142.5
850	0.841	-175.5	0.029	-24.6	2.779	47.1	0.695	-144.5
900	0.845	-177.4	0.026	-25.9	2.554	43.8	0.708	-146.7
950	0.852	-179.4	0.024	-25.4	2.350	41.9	0.720	-148.9
1000	0.857	-178.6	0.022	-24.3	2.209	39.4	0.736	-150.7
1050	0.864	-176.9	0.019	-23.5	2.035	36.3	0.747	-152.4
1100	0.868	-175.0	0.017	-20.1	1.889	34.8	0.759	-154.6



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—————Keep safety first in your circuit designs! —————

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