
2SK410

Silicon N-Channel MOS FET

HITACHI

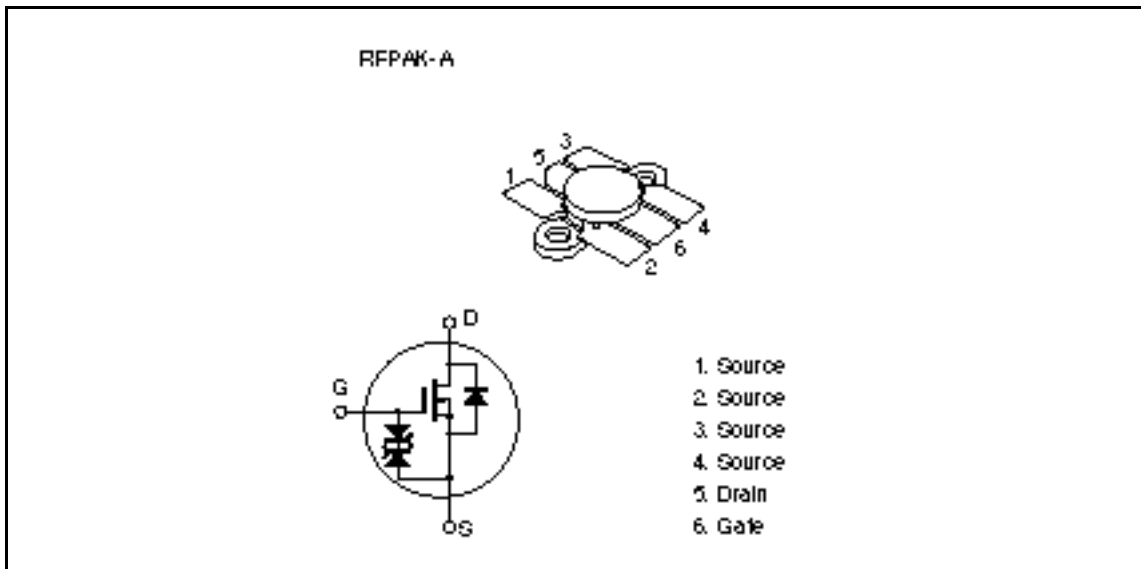
Application

HF/VHF power amplifier

Features

- High breakdown voltage
- You can decrease handling current.
- Included gate protection diode
- No secondary-breakdown
- Wide area of safe operation
- Simple bias circuitry
- No thermal runaway

Outline



2SK410

Absolute Maximum Ratings (Ta = 25°C)

Item	Symbol	Ratings	Unit
Drain to source voltage	V _{DSS}	180	V
Gate to source voltage	V _{GSS}	±20	V
Drain current	I _D	8	A
Channel dissipation	P _{ch} *1	120	W
Channel temperature	T _{ch}	150	°C
Storage temperature	T _{stg}	-55 to +150	°C

Note: 1. Value at T_c = 25°C

Electrical Characteristics (Ta = 25°C)

Item	Symbol	Min	Typ	Max	Unit	Test conditions
Power output	P _O	140	180	—	W	V _{DD} = 80 V, f = 28 MHz,
Drain efficiency		—	80	—	%	I _{DQ} = 0.1 A, P _{in} = 5 W
Drain to source breakdown voltage	V _{(BR)DSS}	180	—	—	V	I _D = 10 mA, V _{GS} = 0
Gate to source breakdown voltage	V _{(BR)GSS}	±20	—	—	V	I _G = ±100 µA, V _{DS} = 0
Gate to source cutoff voltage	V _{GS(off)}	0.5	—	3.0	V	I _D = 1 mA, V _{DS} = 10 V*1
Drain current	I _{DSS}	—	—	1.0	mA	V _{DS} = 140 V, V _{GS} = 0
Drain to source saturation voltage	V _{DS(on)}	—	3.8	6.0	V	I _D = 4 A, V _{GS} = 10 V*1
Forward transfer admittance	y _{fs}	0.9	1.25	—	S	I _D = 3 A, V _{DS} = 20 V*1
Input capacitance	C _{iss}	—	440	—	pF	V _{GS} = 5 V, V _{DS} = 0, f = 1 MHz
Output capacitance	C _{oss}	—	75	—	pF	V _{GS} = -5 V, V _{DS} = 50 V, f = 1 MHz
Reverse transfer capacitance	C _{rss}	—	0.5	—	pF	V _{GD} = -50 V, f = 1 MHz
Power output	P _O	—	100	—	W _{PEP}	V _{DD} = 80 V, f = 28 MHz,
Power gain	PG	—	17	—	dB	f = 20 kHz, IMD -30 dB

Note: 1. Pulse Test

CAUTION: OPERATING HAZARDS

Beryllium Oxide Ceramics have been employed in these products.

Since dust or fume of the material is highly poison to the human body, please do not treat them mechanically or chemically in the manner which might expose them to the air. And it should never be thrown out with general industrial or domestic waste.

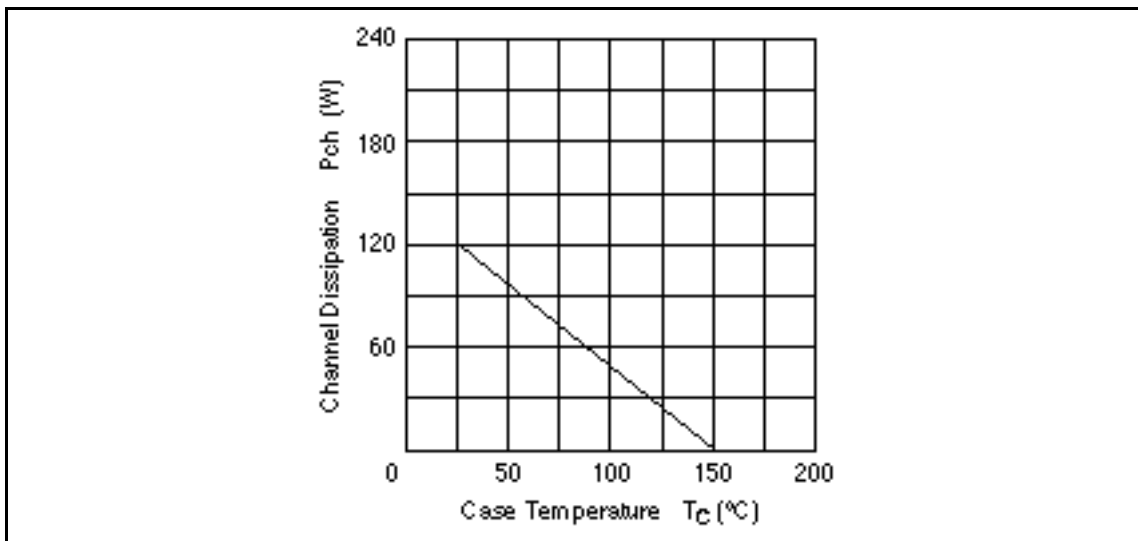


Figure 1 Power vs. Temperature Derating

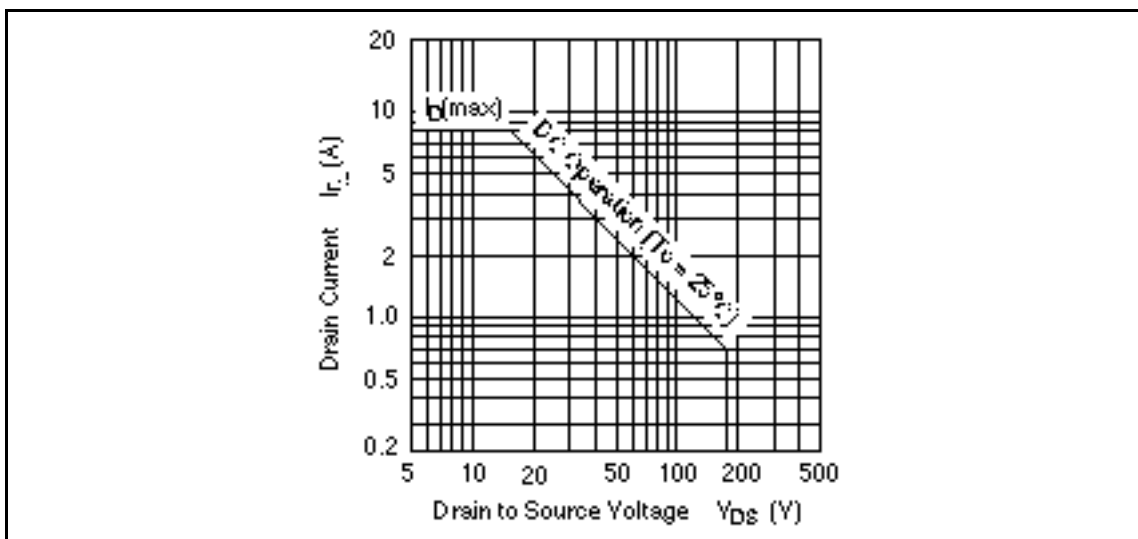


Figure 2 Maximum Safe Operation Area

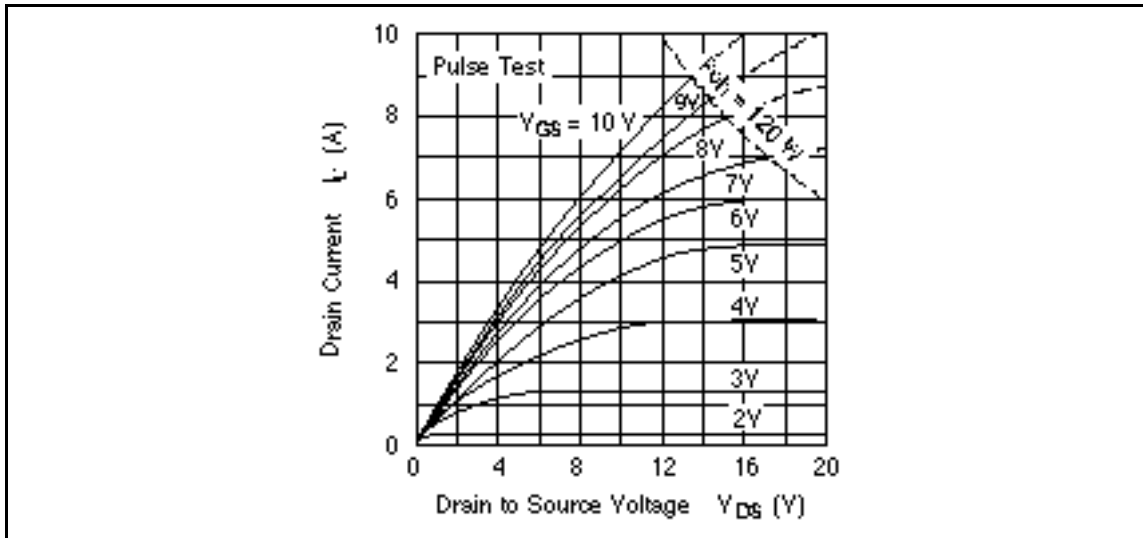


Figure 3 Typical Output Characteristics

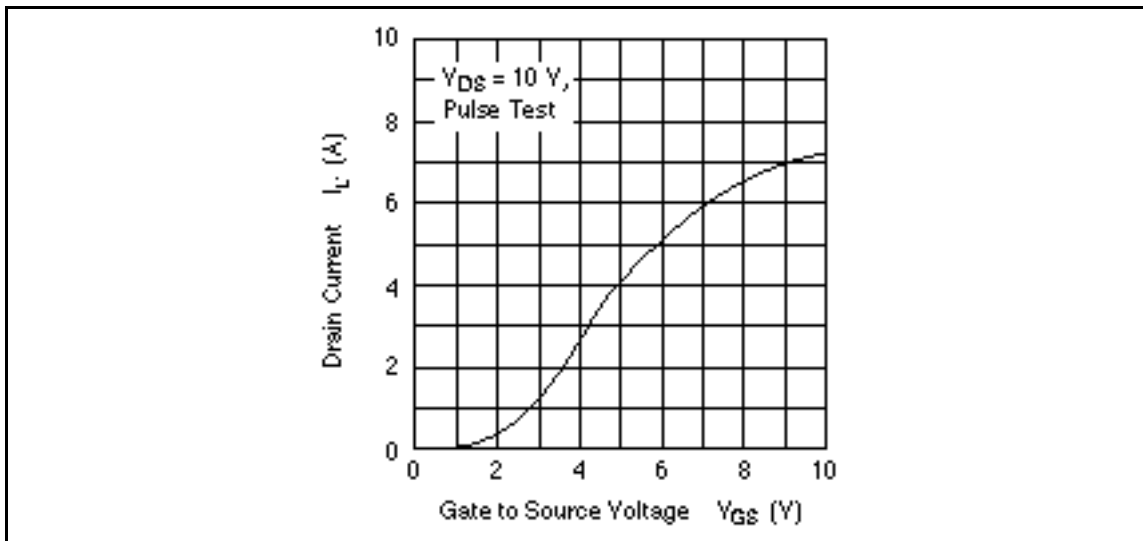


Figure 4 Typical Transfer Characteristics

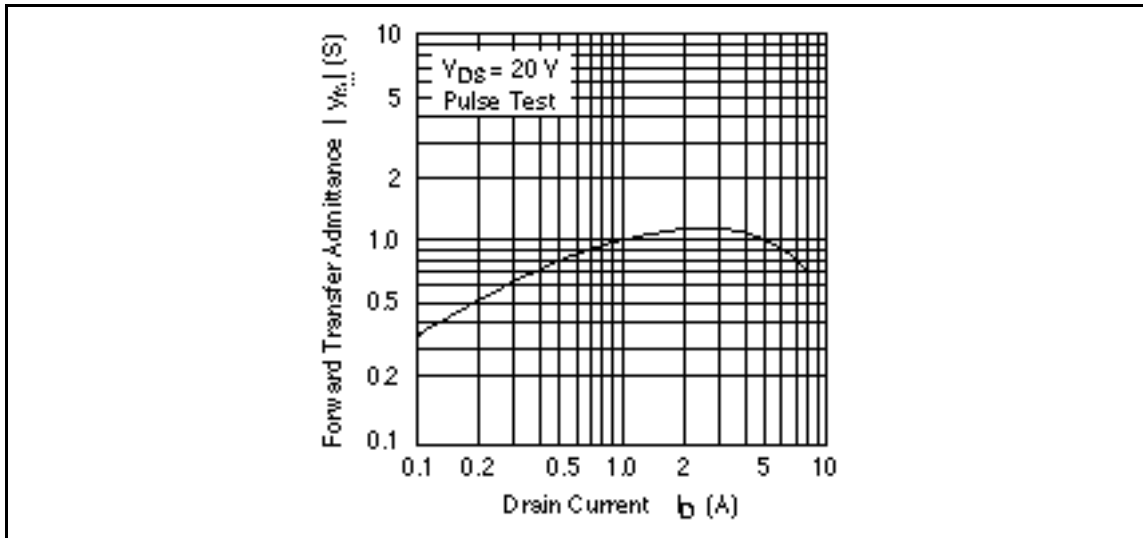


Figure 5 Forward Transfer Admittance vs. Drain Current

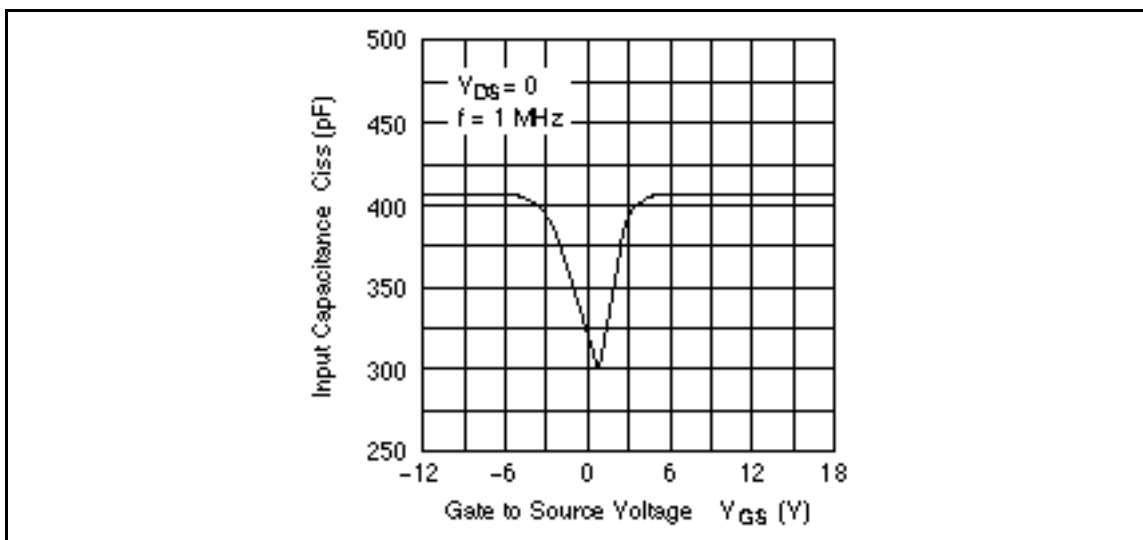


Figure 6 Input Capacitance vs. Gate to Source Voltage

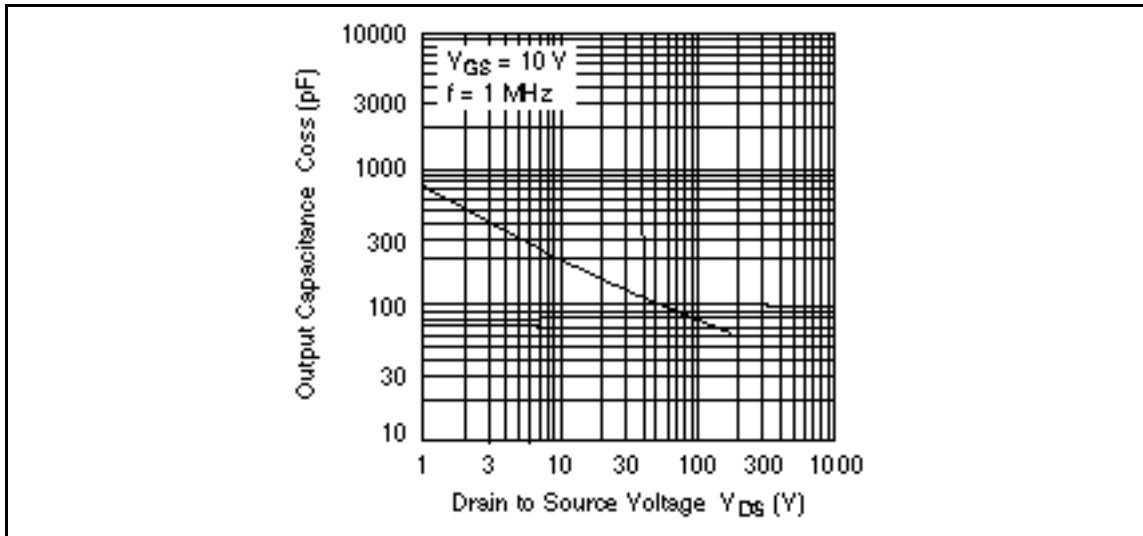


Figure 7 Output Capacitance vs. Drain to Source Voltage

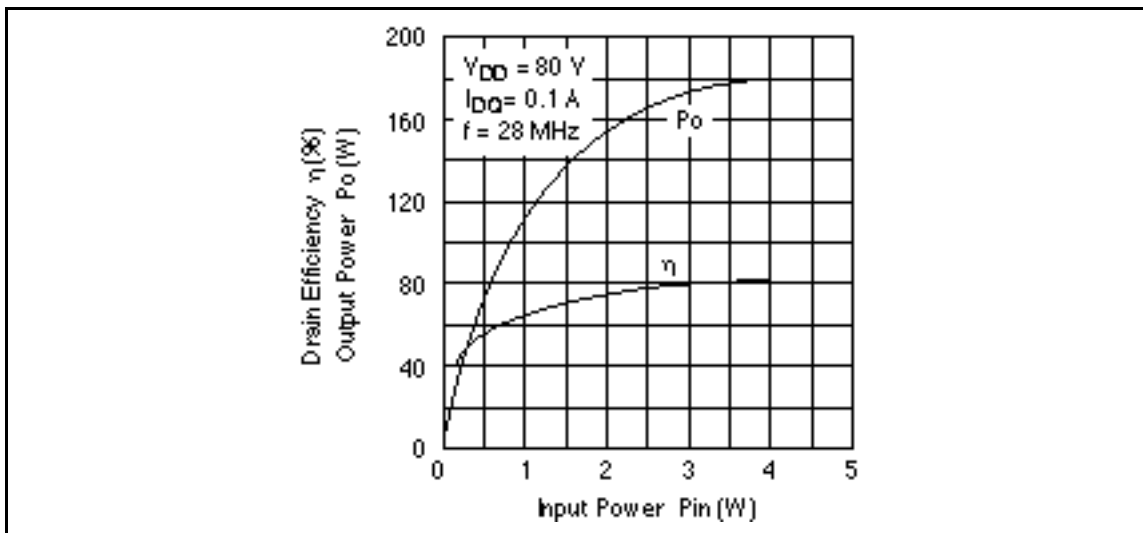


Figure 8 Output Power, Drain Efficiency vs. Input Power

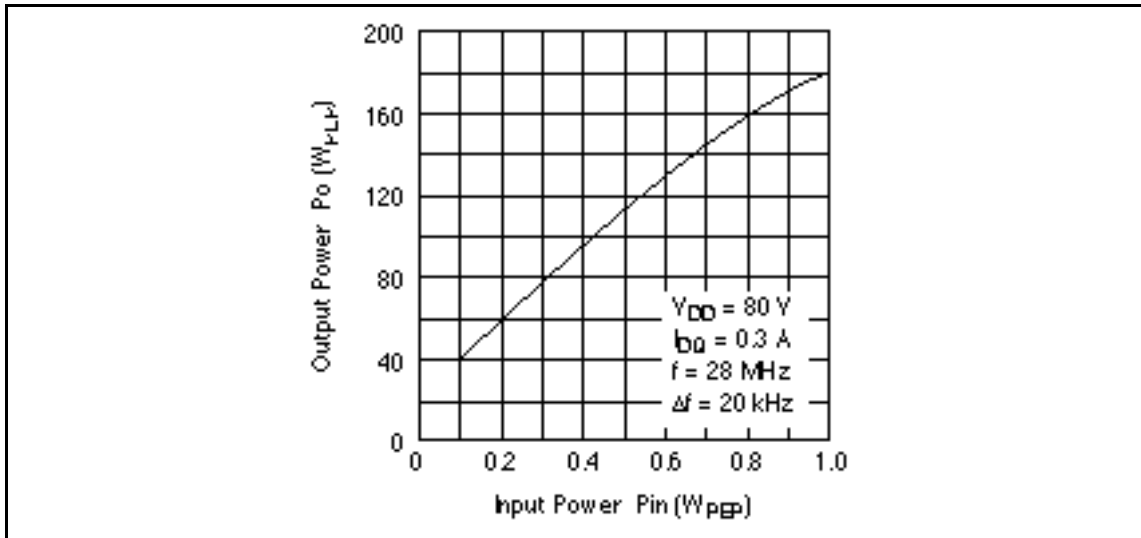


Figure 9 Output Power vs. Input Power (2 Tones)

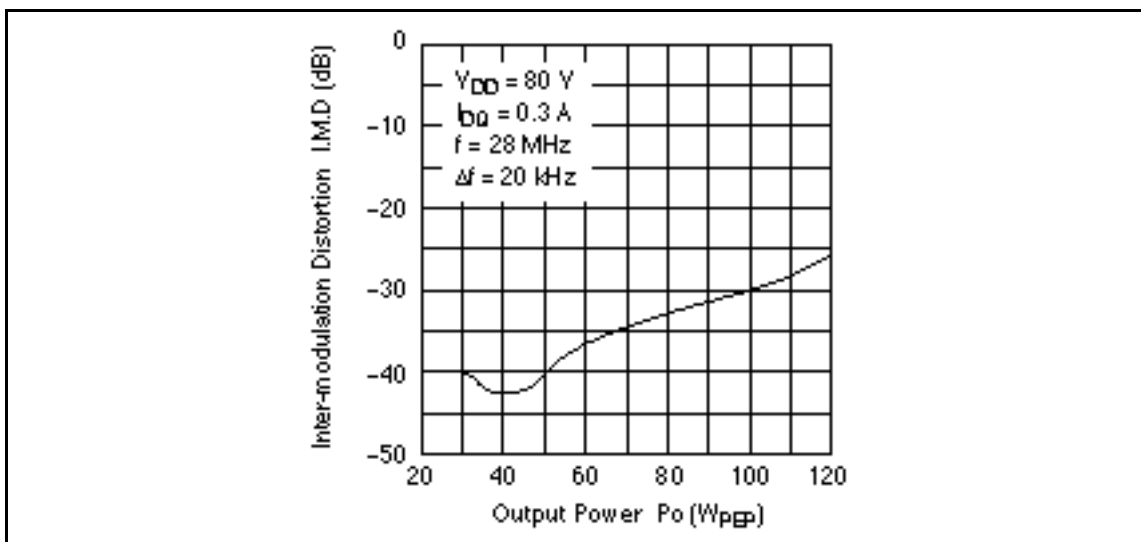


Figure 10 Inter-Modulation Distortion vs. Output Power

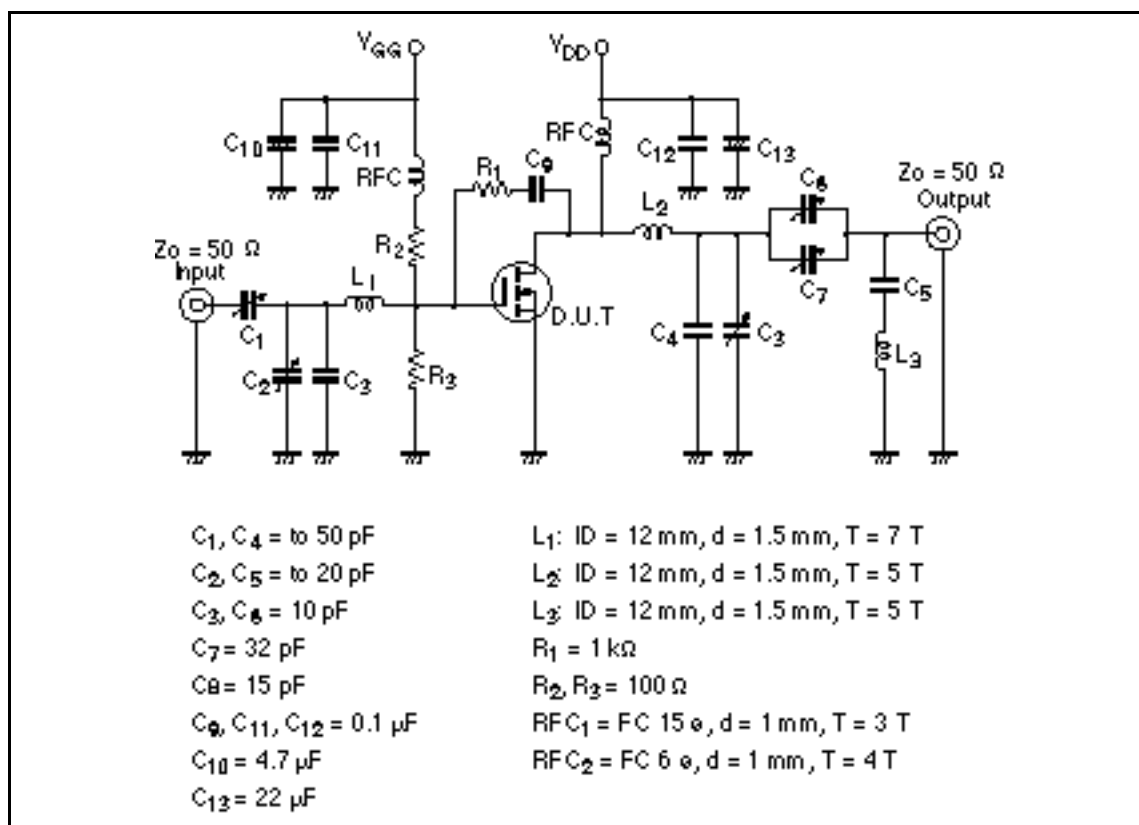
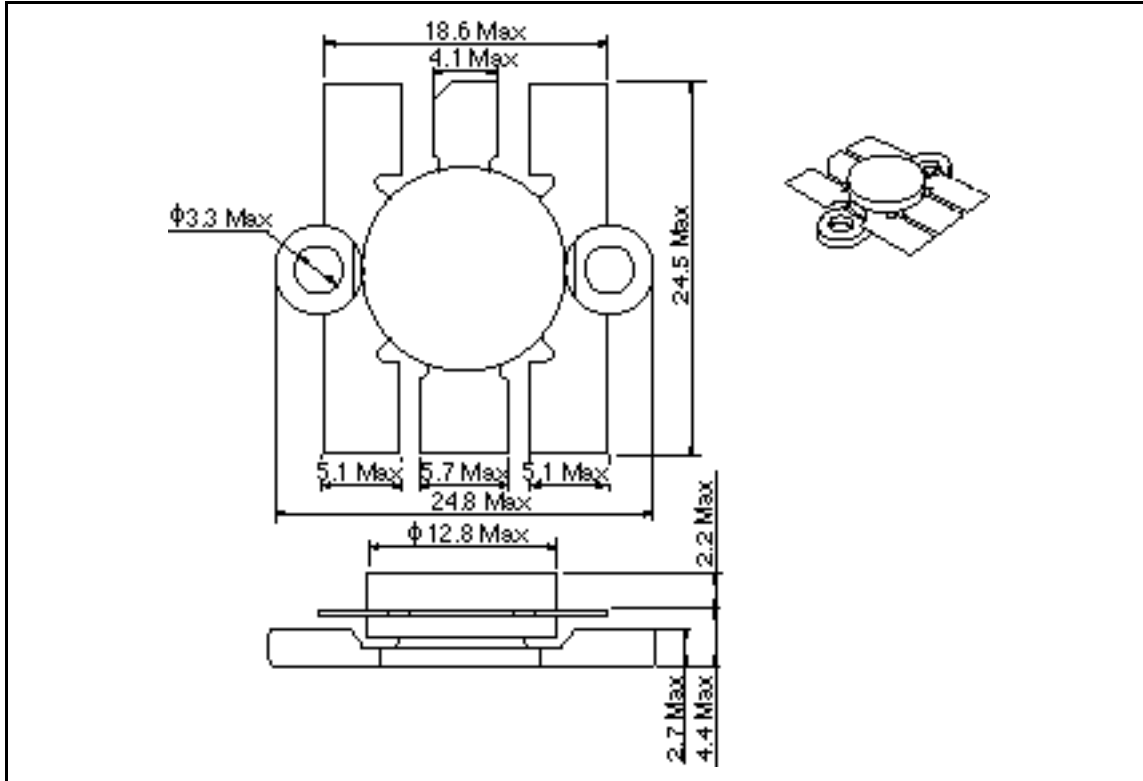


Figure 11 28 MHz Pout Test Circuit

Package Dimensions

Unit: mm



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HITACHI

Hitachi, Ltd.

Semiconductor & IC Div.

Nippon Bldg., 2-5-2, Ohite-machi, Chiyoda-ku, Tokyo 100, Japan

Tel: Tokyo (03) 3270-2111

Fax: (03) 3270-5109

For further information write to:

Hitachi America, Ltd.
Semiconductor & IC Div.
2000 Sierra Point Parkway
Brisbane, CA 94005-4835
U.S.A.
Tel: 415-589-8000
Fax: 415-589-4207

Hitachi Europe GmbH
Electronic Components Group
Continental Europe
Dornacher Straße 3
D-85622 Feldkirchen
München
Tel: 089-9 94 80-0
Fax: 089-9 29 30 00

Hitachi Europe Ltd.
Electronic Components Div.
Northern Europe Headquarters
Whitebrook Park
Lower Cookham Road
Maidenhead
Berkshire SL6 8YA
United Kingdom
Tel: 0628-585000
Fax: 0628-778322

Hitachi Asia Pte. Ltd.
45 Collyer Quay #20-00
Hitachi Tower
Singapore 0104
Tel: 535-2100
Fax: 535-1533

Hitachi Asia (Hong Kong) Ltd.
Unit 705, North Tower,
World Finance Centre
Harbour City, Canton Road
Tsim Sha Tsui, Kowloon
Hong Kong
Tel: 27359218
Fax: 27308074

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