

SILICON POWER MOS FIELD EFFECT TRANSISTOR
2SK2597

N-CHANNEL SILICON POWER MOSFET
FOR BASE STATION OF 900 MHz BAND CELLULAR PHONE
POWER AMPLIFICATION

FEATURES

- High output, high gain
 $P_o = 100\text{ W}$, $G_L = 13\text{ dB}$ (TYP.) ($f = 900\text{ MHz}$)
 $P_o = 90\text{ W}$, $G_L = 12\text{ dB}$ (TYP.) ($f = 960\text{ MHz}$)
- Low intermodulation distortion
- Covers all base station frequencies such as 800-MHz PDC and GSM
- High-reliability gold electrodes
- Hermetic sealed package
- Internal matching circuit
- Push-pull structure

ABSOLUTE MAXIMUM RATINGS (TA = 25 °C)

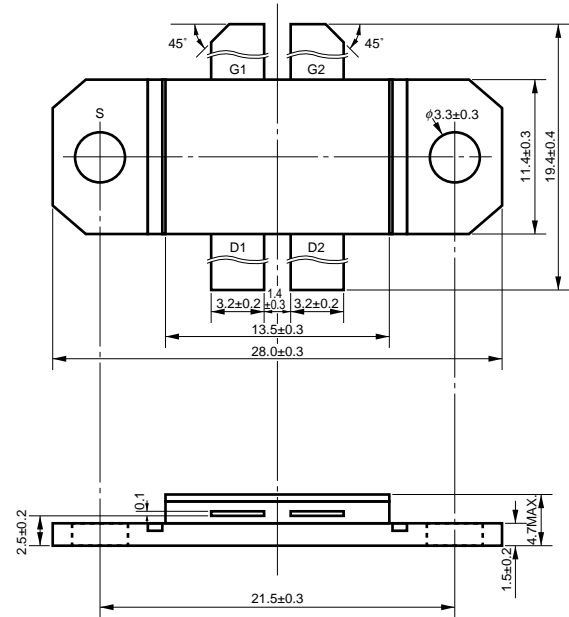
Parameter	Symbol	Ratings	Unit
Drain-source voltage	V_{DS}	60	V
Gate-source voltage	V_{GS}	7	V
Drain current (D.C.)	I_D	15 ^{Note}	A
Total power dissipation	P_T	290	W
Thermal resistance	R_{th}	0.6	°C/W
Channel temperature	T_{ch}	200	°C
Storage temperature	T_{stg}	-65 to +150	°C

Note Per side

ELECTRICAL CHARACTERISTICS (TA = 25 °C)

Parameter	Symbol	Condition	MIN.	TYP.	MAX.	Unit
Gate leakage current	I_{GSS}	$V_{GS} = 7\text{ V}$			1	μA
Cut-off voltage	$V_{GS(off)}$	$V_{DS} = 5\text{ V}$, $I_D = 50\text{ mA}$	1.5		4	V
Drain current	I_{DSS}	$V_{DS} = 60\text{ V}$			2	mA
Mutual conductance	g_m	$V_{DS} = 5\text{ V}$, $I_D = 3\text{ A}$, $\Delta I_D = 100\text{ mA}$	2.0			S
Output power	P_o	$f = 960\text{ MHz}$, $V_{DD} = 30\text{ V}$	80	90		W
Drain efficiency	η_D	$I_{DQ} = 200\text{ mA} \times 2$, $P_{in} = 40\text{ dBm}$	35	40		%
Linear gain	G_L	$f = 960\text{ MHz}$, $V_{DD} = 30\text{ V}$ $I_{DQ} = 200\text{ mA} \times 2$, $P_{in} = 30\text{ dBm}$	11	12		dB
Third intermodulation distortion	IM_3	$f = 900\text{ MHz}$, $\Delta f = 0.1\text{ MHz}$, $V_{DD} = 30\text{ V}$ $I_{DQ} = 200\text{ mA} \times 2$, $P_o = 42\text{ dBm}$		-38		dBc

PACKAGE DRAWING (Unit: mm)

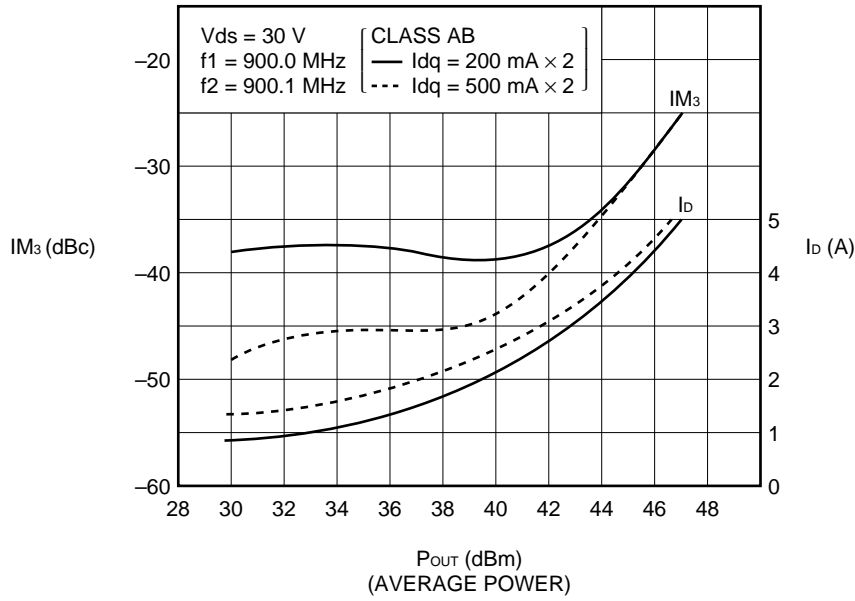


G1, G2: gate
 D1, D2: drain
 S : source
 Flange is connected to the source.

The information in this document is subject to change without notice.

2SK2597 供应商 CHARACTERISTICS

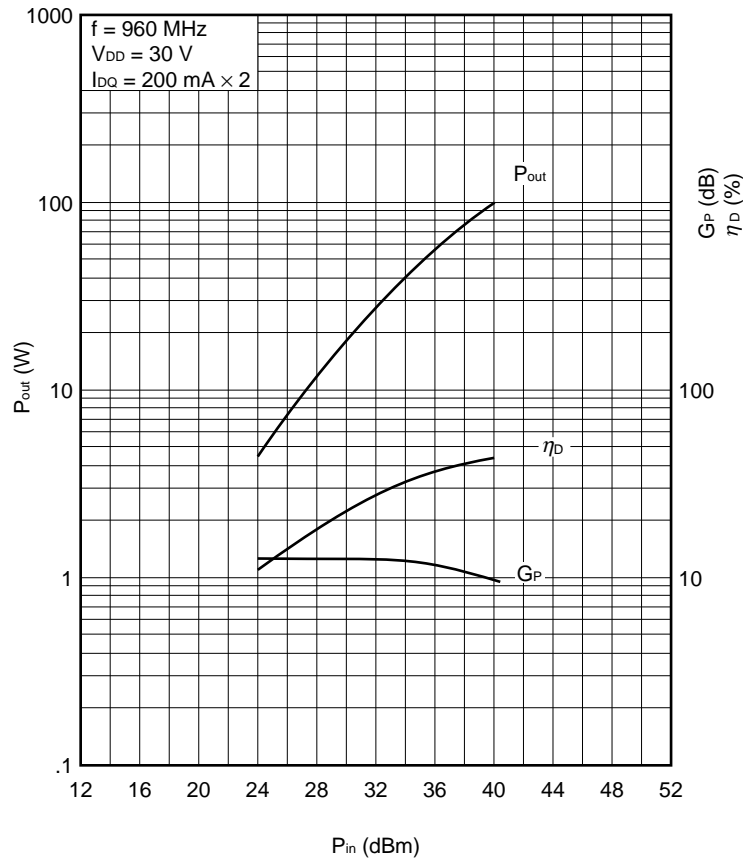
THIRD ORDER INTERMODULATION DISTORTION / DRAIN CURRENT v.s. OUTPUT POWER



INPUT v.s. OUTPUT, POWER GAIN, EFFICIENCY

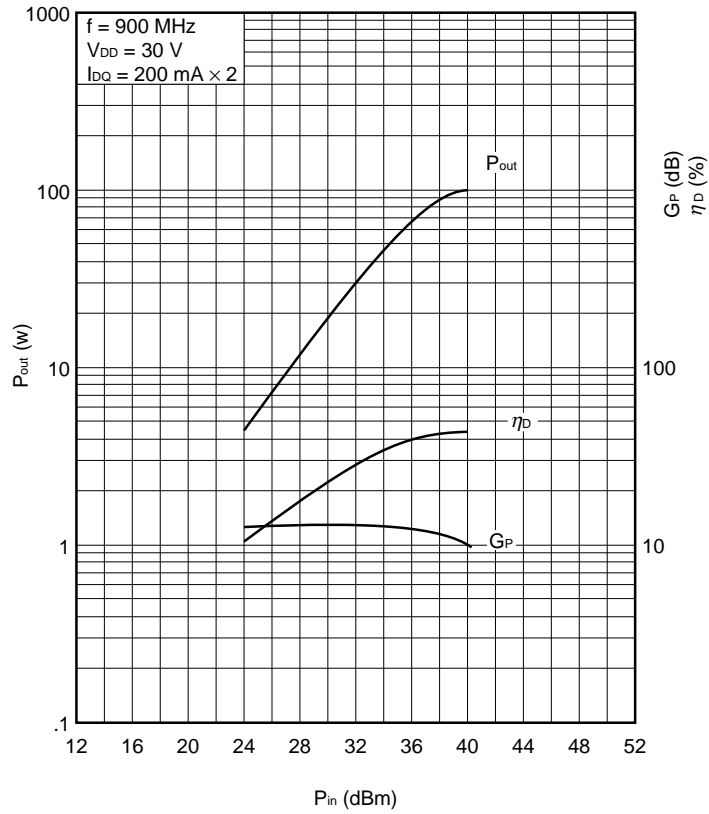
(1) f = 960 MHz

OUTPUT POWER / DRAIN EFFICIENCY / POWER GAIN vs. INPUT POWER



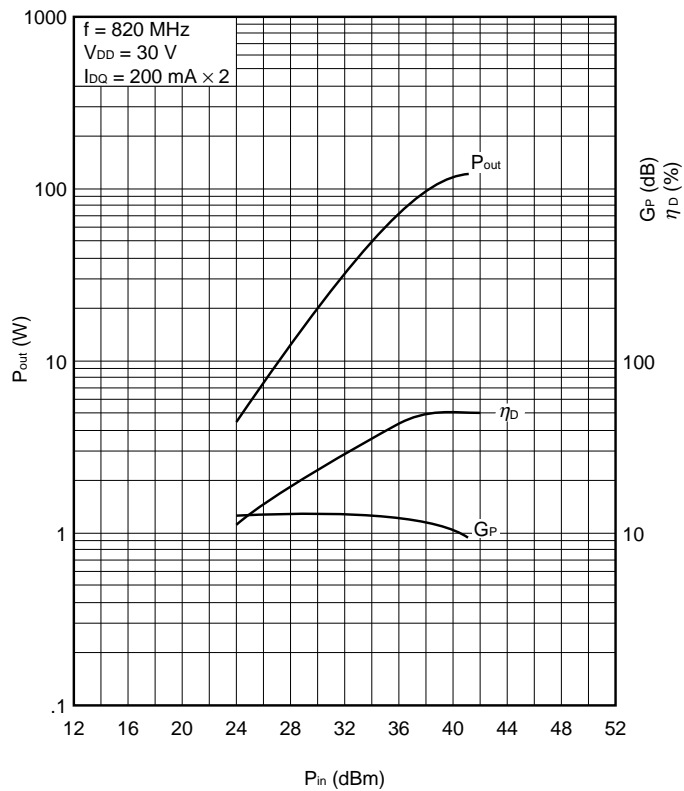
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OUTPUT POWER / DRAIN EFFICIENCY /
POWER GAIN vs. INPUT POWER

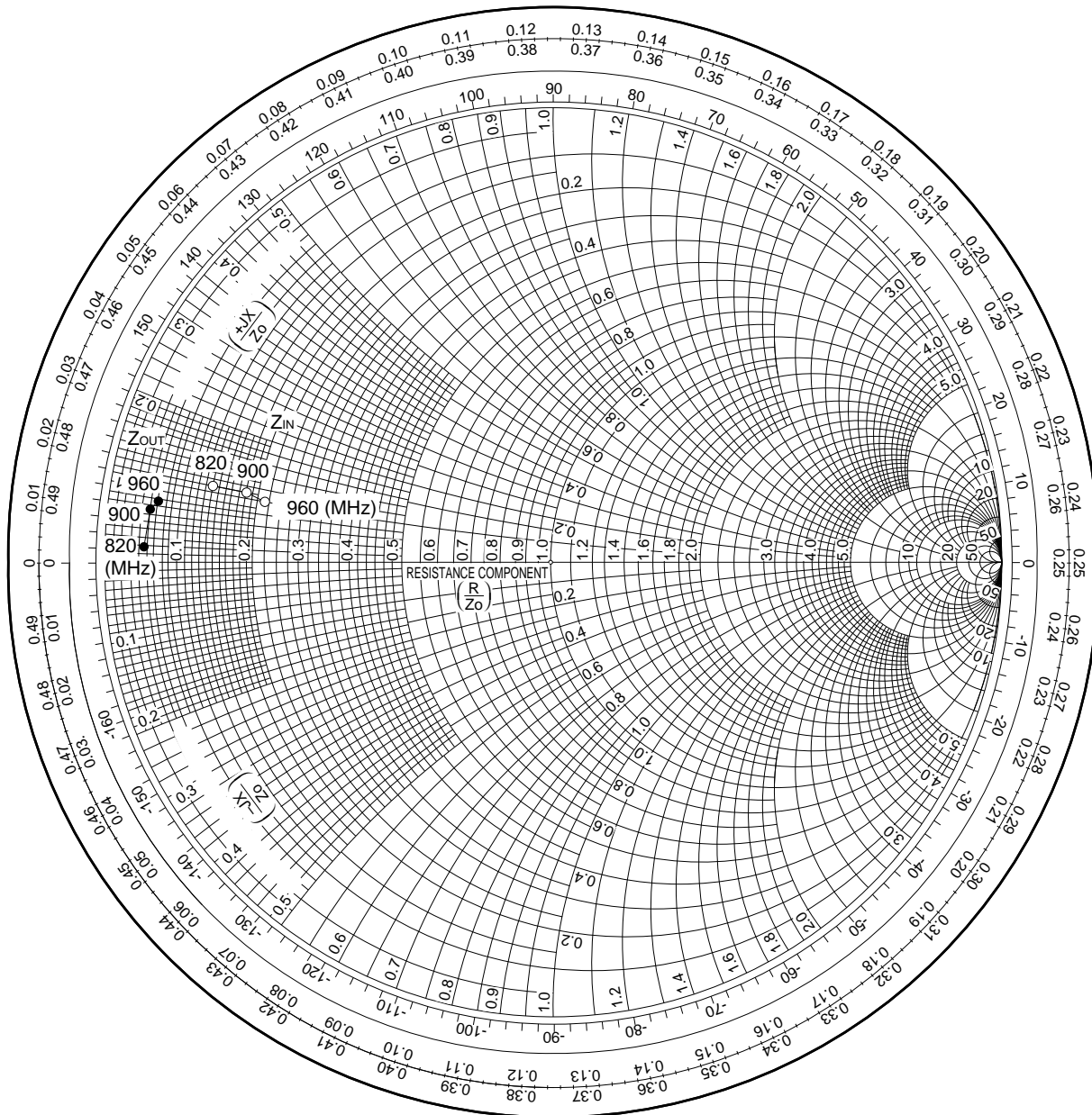


(3) $f = 820 \text{ MHz}$

OUTPUT POWER / DRAIN EFFICIENCY /
POWER GAIN vs. INPUT POWER



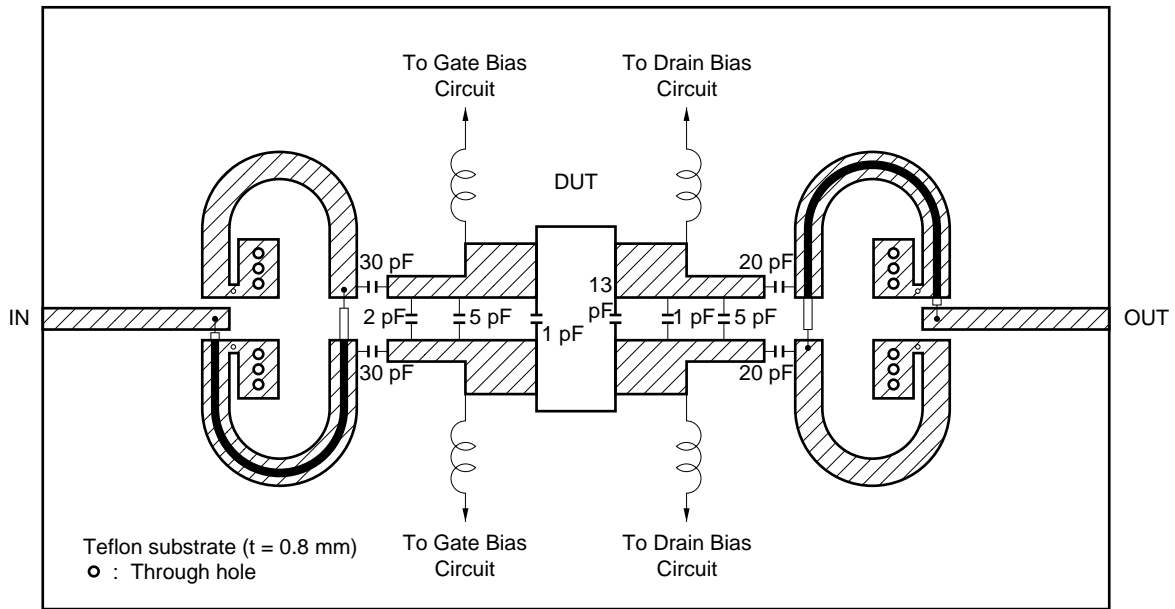
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$V_{DD} = 30\text{ V}$, $I_{DQ} = 200\text{ mA} \times 2$, $P_{in} = 40\text{ dBm}$

f (MHz)	$Z_{IN} (\Omega)$	$Z_{OUT} (\Omega)$
820	$6.52 + j5.52$	$2.34 + j0.91$
900	$8.86 + j5.49$	$2.78 + j3.23$
960	$10.36 + j4.79$	$2.95 + j3.37$

查询"2SK2597"供应商 APPLICATION CIRCUIT EXAMPLE (f = 960 MHz)



Notes on Handling

This product internally uses beryllie porcelain (beryllium oxide). If powder or vapor of beryllium oxide enters your respiratory organs, you will have a difficulty in breathing, which is dangerous. Therefore, do no disassemble or chemically process the product.

Be sure to abolish the product separately from general industrial wastes or garbage.

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