TOSHIBA FIELD EFFECT TRANSISTOR SILICON N CHANNEL MOS TYPE

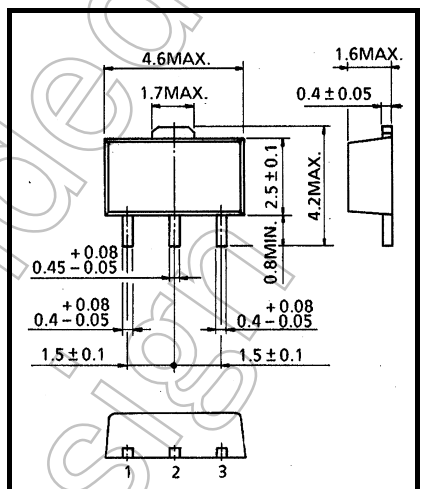
2SK3074

RF POWER MOSFET
FOR VHF−AND UHF-BAND POWER AMPLIFIER

(Note)The TOSHIBA products listed in this document are intended for high frequency Power Amplifier of telecommunications equipment.These TOSHIBA products are neither intended nor warranted for any other use.Do not use these TOSHIBA products listed in this document except for high frequency Power Amplifier of telecommunications equipment.

- Output Power : $P_O \geq 630mW$
- Power Gain : $G_P \geq 14.9dB$
- Drain Efficiency : $\eta_D \geq 45\%$

Unit: mm



1. GATE
2. SOURCE
3. DRAIN

JEDEC	—
JEITA	SC−62
TOSHIBA	2−5K1D

Weight: 0.05 g (typ.)

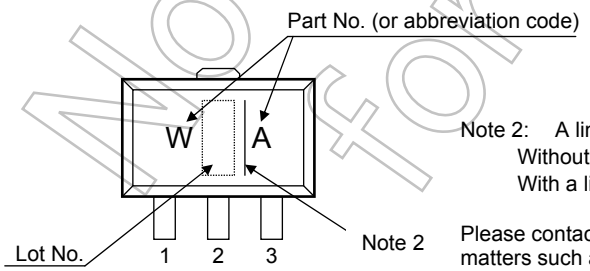
ABSOLUTE MAXIMUM RATINGS (Ta = 25°C)

Characteristics	Symbol	Rating	Unit
Drain-Source Voltage	V_{DSS}	30	V
Gate-Source Voltage	V_{GSS}	25	V
Drain Current	I_D	1	A
Drain Power Dissipation	P_D (Note 1)	3	W
Channel Temperature	T_{ch}	150	°C
Storage Temperature Range	T_{stg}	−45 to 150	°C

Note: Using continuously under heavy loads (e.g. the application of high temperature/current/voltage and the significant change in temperature, etc.) may cause this product to decrease in the reliability significantly even if the operating conditions (i.e. operating temperature/current/voltage, etc.) are within the absolute maximum ratings.
Please design the appropriate reliability upon reviewing the Toshiba Semiconductor Reliability Handbook (“Handling Precautions”/“Derating Concept and Methods”) and individual reliability data (i.e. reliability test report and estimated failure rate, etc).

Note 1: Tc = 25°C When mounted on a 1.6mm glass epoxy PCB

MARKING



1. Gate
2. Source
3. Drain

Note 2: A line beside a Lot No. identifies the indication of product Labels.
Without a line: [[Pb]]/INCLUDES > MCV
With a line: [[G]]/RoHS COMPATIBLE or [[G]]/RoHS [[Pb]]

Please contact your TOSHIBA sales representative for details as to environmental matters such as the RoHS compatibility of Product. The RoHS is the Directive 2011/65/EU of the European Parliament and of the Council of 8 June 2011 on the restriction of the use of certain hazardous substances in electrical and electronic equipment.

Caution: This device is sensitive to electrostatic discharge.
Please make enough tool and equipment earthed when you handle.

Start of commercial production
1998-06

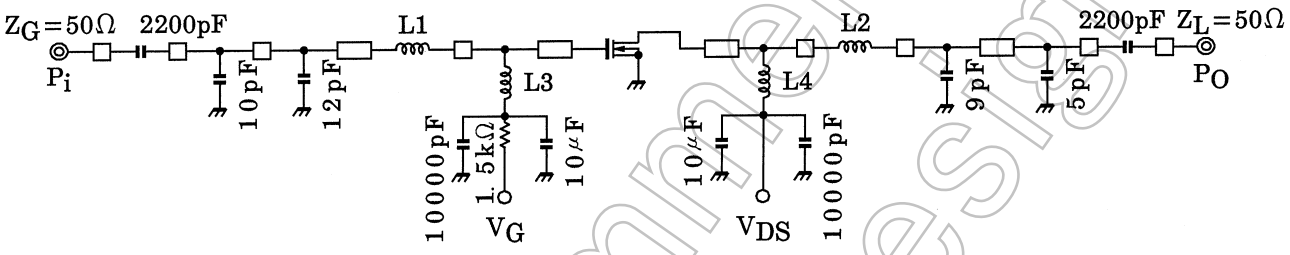
Not Recommended for New Design

ELECTRICAL CHARACTERISTICS (Ta = 25°C)

CHARACTERISTIC	SYMBOL	TEST CONDITION	MIN.	TYP.	MAX.	UNIT
Output Power	P_O	V_{DS} = 9.6V Iidle = 50mA (V_{GS} = adjust) f = 520MHz, P_i = 20mW	630	—	—	mW
Drain Efficiency	η_D		45	—	—	%
Power Gain	G_P		14.9	—	—	dB
Gate Threshold Voltage	V_{th}	V_{DS} = 9.6V, I_D = 0.5mA	1.4	1.9	2.4	V
Drain Cut-off Current	I_{DSS}	V_{DS} = 20V, V_{GS} = 0	—	—	10	μA
Gate-Source Leakage Current	I_{GSS}	V_{GS} = 10V, V_{DS} = 0	—	—	5	μA

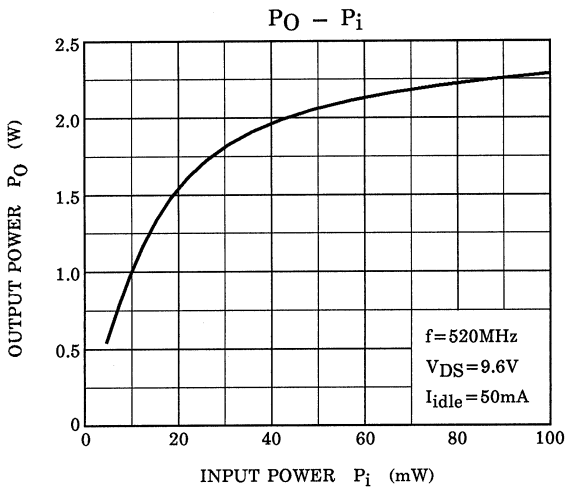
Note 3: These characteristic values are measured using measurement tools specified by Toshiba.

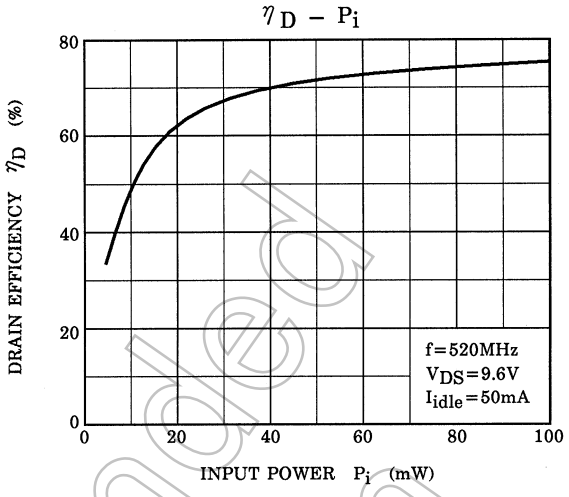
RF OUTPUT POWER TEST FIXTURE



L1, L2 : φ0.8, 2ID, 1T
L3 : φ0.8, 5.5ID, 4T
L4 : φ0.8, 5.5ID, 8T

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Note 3: These are only typical curves and devices are not necessarily guaranteed at these curves.

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