

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

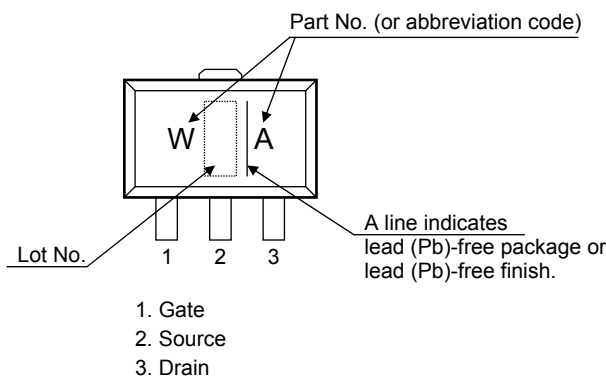
### ABSOLUTE MAXIMUM RATINGS (Ta = 25°C)

CHARACTERISTIC	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	$T_{stg}$	-45~150	°C

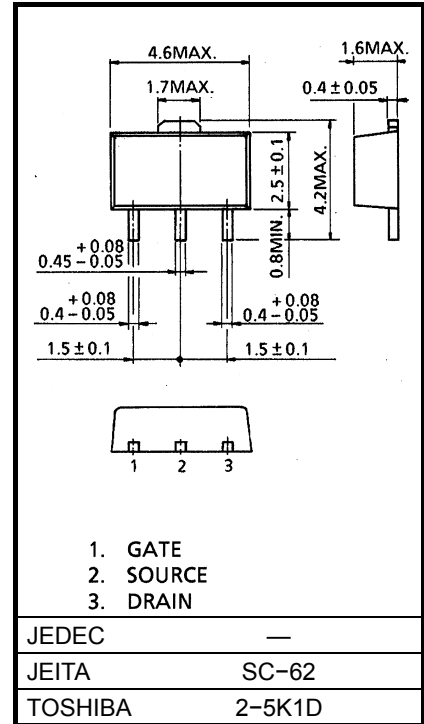
Note: Using continuously under heavy loads (e.g. the application of high temperature/current/voltage and the significant change in temperature, etc.) may cause this product to decrease in the reliability significantly even if the operating conditions (i.e. operating temperature/current/voltage, etc.) 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:  $T_c = 25^\circ\text{C}$  When mounted on a 1.6mm glass epoxy PCB

### MARKING



Unit in mm



Weight: 0.05 g (typ.)

**Caution:** This device is sensitive to electrostatic discharge.

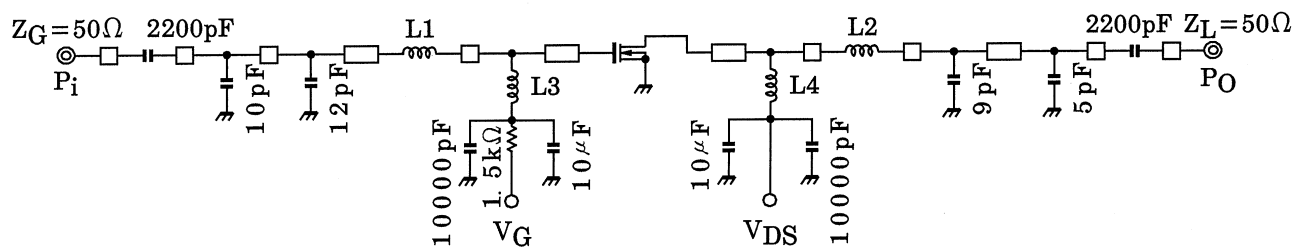
Please make enough tool and equipment earthed when you handle.

## ELECTRICAL CHARACTERISTICS (Ta = 25°C)

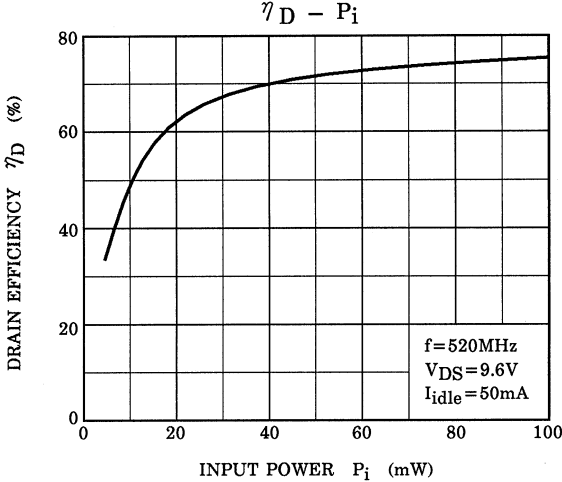
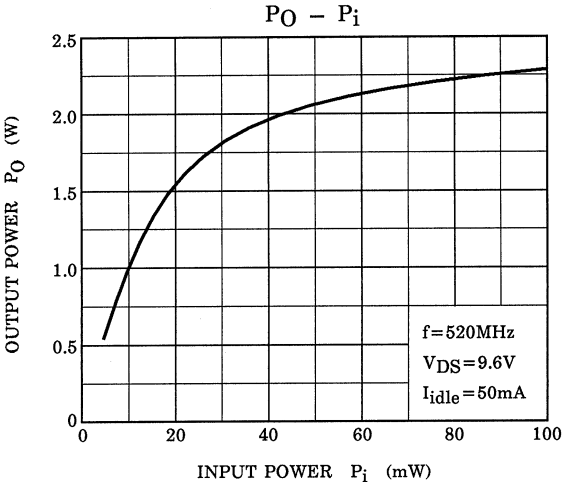
CHARACTERISTIC	SYMBOL	TEST CONDITION	MIN.	TYP.	MAX.	UNIT
Output Power	$P_O$	$V_{DS} = 9.6V$ $I_{idle} = 50mA$ ( $V_{GS} = \text{adjust}$ ) $f = 520MHz$ , $P_i = 20mW$	630	—	—	mW
Drain Efficiency	$\eta_D$		45	—	—	%
Power Gain	$G_p$		14.9	—	—	dB
Gate Threshold Voltage	$V_{th}$	$V_{DS} = 9.6V$ , $I_D =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

Note 2: These characteristic values are measured using measurement tools specified by Toshiba.

## RF OUTPUT POWER TEST FIXTURE



- L1, L2 :  $\phi 0.8$ , 2ID, 1T
- L3 :  $\phi 0.8$ , 5.5ID, 4T
- L4 :  $\phi 0.8$ , 5.5ID, 8T



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

**RESTRICTIONS ON PRODUCT USE**

20070701-EN GENERAL

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- Оперативные сроки поставки под заказ (от 5 рабочих дней);
- Экспресс доставка в любую точку России;
- Помощь Конструкторского Отдела и консультации квалифицированных инженеров;
- Техническая поддержка проекта, помощь в подборе аналогов, поставка прототипов;
- Поставка электронных компонентов под контролем ВП;
- Система менеджмента качества сертифицирована по Международному стандарту ISO 9001;
- При необходимости вся продукция военного и аэрокосмического назначения проходит испытания и сертификацию в лаборатории (по согласованию с заказчиком);
- Поставка специализированных компонентов военного и аэрокосмического уровня качества (Xilinx, Altera, Analog Devices, Intersil, Interpoint, Microsemi, Actel, Aeroflex, Peregrine, VPT, Syfer, Eurofarad, Texas Instruments, MS Kennedy, Miteq, Cobham, E2V, MA-COM, Hittite, Mini-Circuits, General Dynamics и др.);

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## JONHON

«JONHON» (основан в 1970 г.)

Разъемы специального, военного и аэрокосмического назначения:

(Применяются в военной, авиационной, аэрокосмической, морской, железнодорожной, горно- и нефтедобывающей отраслях промышленности)

«FORSTAR» (основан в 1998 г.)

ВЧ соединители, коаксиальные кабели,  
кабельные сборки и микроволновые компоненты:

(Применяются в телекоммуникациях гражданского и специального назначения, в средствах связи, РЛС, а так же военной, авиационной и аэрокосмической отраслях промышленности).



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