# **Preliminary**

TOSHIBA Field Effect Transistor Silicon N Channel MOS Type

# 2SK3079A

#### 470 MHz Band Amplifier Applications

Unit: mm

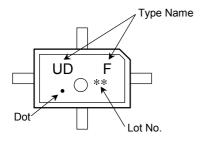
- Output power:  $P_0 = 33.50 dBmW (2.2 W) (min)$
- Gain:  $G_p = 13.50 dB \text{ (min)}$
- Drain Efficiency:  $\eta D = 50.0\%$  (min)

#### **Maximum Ratings (Ta = 25°C)**

Characteristics	Symbol	Rating	Unit
Drain-source voltage	$V_{DSS}$	10	V
Gate-source voltage	$V_{GSS}$	3	V
Drain current	I <sub>D</sub>	3	Α
Power dissipation	P <sub>D</sub> (Note 1)	20.0	W
Channel temperature	T <sub>ch</sub>	150	°C
Storage temperature range	T <sub>stg</sub>	<b>−</b> 45~150	°C

Note 1: Tc = 25°C

## **Marking**



# GATE SOURCE (HEAT SINK) DRAIN **JEDEC** JEITA **TOSHIBA** 2-5N1A

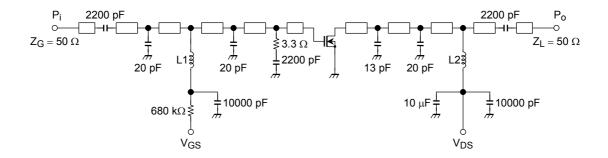
#### **Electrical Characteristics (Ta = 25°C)**

Characteristics		Symbol	Test Condition	Min	Тур.	Max	Unit
Output power		Po	V <sub>DS</sub> = 4.5 V, lidle = 50 mA	33.5	_	_	dBmW
Drain efficiency		$\eta_{D}$	] (V <sub>GS</sub> = adjust) ]f = 470 MHz, P <sub>i</sub> = 20dBmW	50.0			%
Power gain		Gp	$Z_G = Z_L = 50 \Omega$	13.5		_	dB
Threshold voltage		V <sub>th</sub>	$V_{DS} = 4.5 \text{ V}, I_{D} = 0.5 \text{ mA}$		0.8	_	V
Drain cut-off current		I <sub>DSS</sub>	V <sub>DS</sub> = 10 V, V <sub>GS</sub> = 0 V			10	μA
Gate-source leakage current		I <sub>GSS</sub>	$V_{GS}$ = 5 V, $V_{DS}$ = 0 V			5	μA
Load mismatch	(Note 2)	_	$V_{DS}$ = 5 V, f = 470 MHz, $P_i$ = 20dBmW, $P_o$ = 33.5dBmW ( $V_{GS}$ = adjust) VSWR LOAD 10:1 all phase	No degradation			

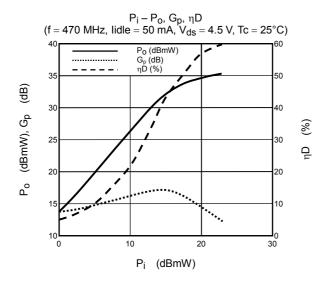
Caution: This is transistor the electrostatic sensitive device. Please handle with caution.

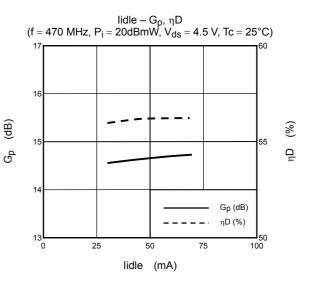
Note 2: When the RF output power test fixture is used

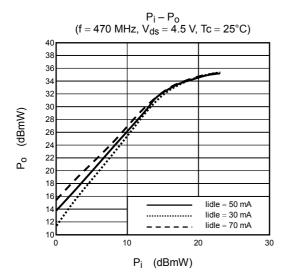
### **Test Circuit**

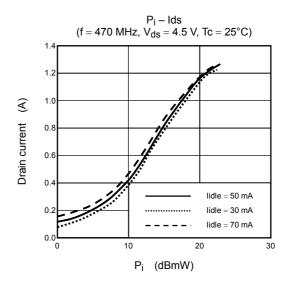


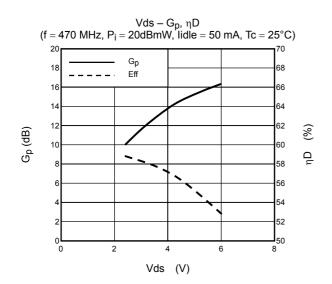
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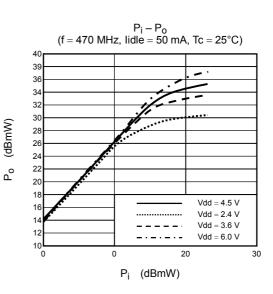




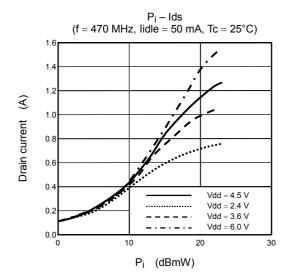








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Caution: These are typical curves and devices are not necessarily guaranteed at these curves.

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