

Preliminary TOSHIBA Field Effect Transistor Silicon N Channel MOS Type

2SK3079A

470 MHz Band Amplifier Applications

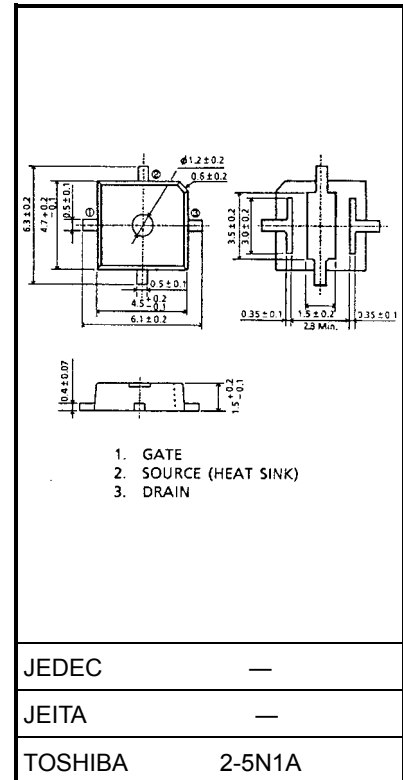
Unit: mm

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

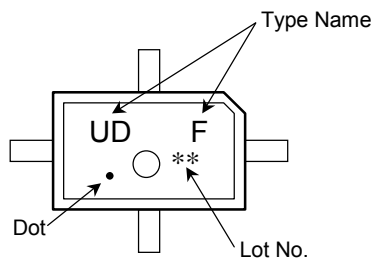
Maximum Ratings ($T_a = 25^\circ\text{C}$)

Characteristics	Symbol	Rating	Unit
Drain-source voltage	V_{DSS}	10	V
Gate-source voltage	V_{GSS}	3	V
Drain current	I_D	3	A
Power dissipation	P_D (Note 1)	20.0	W
Channel temperature	T_{ch}	150	$^\circ\text{C}$
Storage temperature range	T_{stg}	-45~150	$^\circ\text{C}$

Note 1: $T_c = 25^\circ\text{C}$



Marking



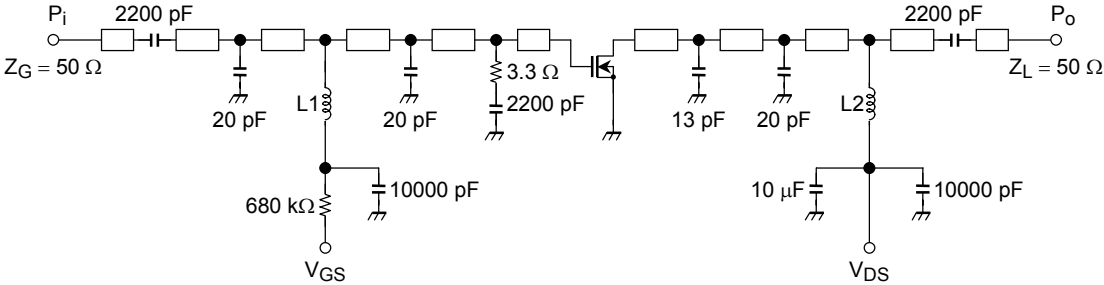
Electrical Characteristics ($T_a = 25^\circ\text{C}$)

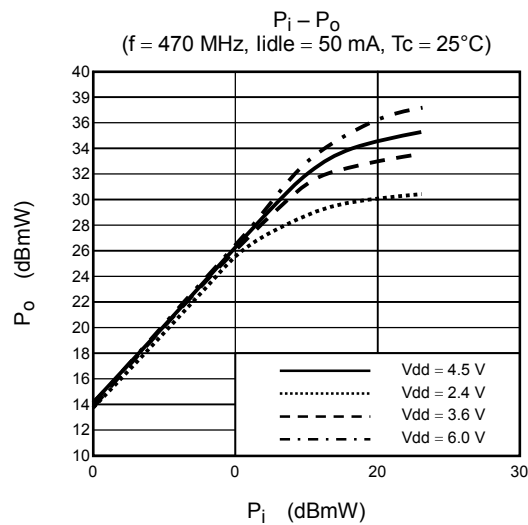
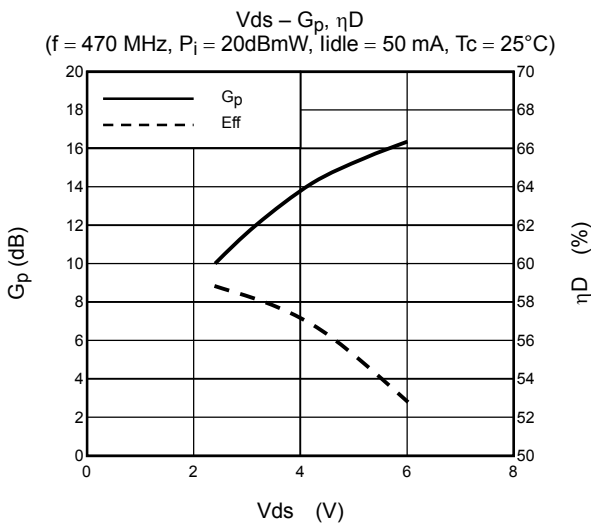
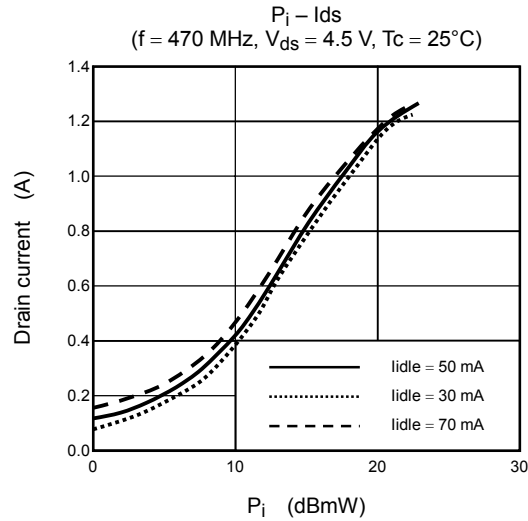
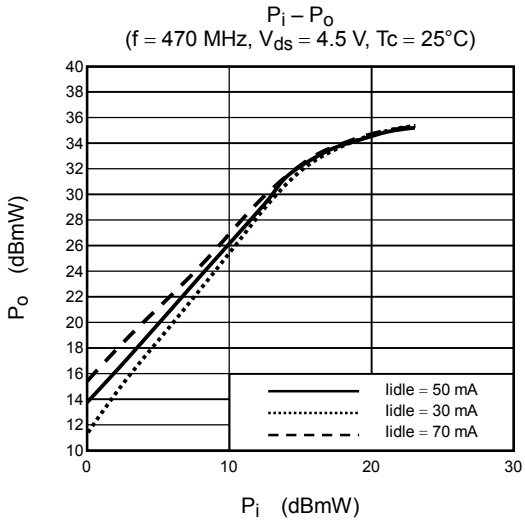
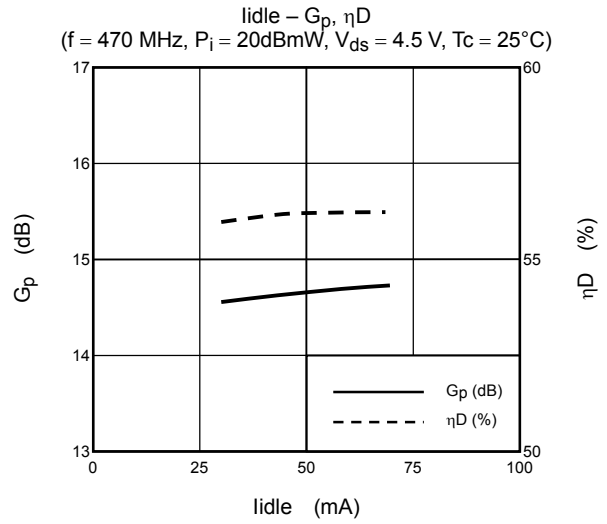
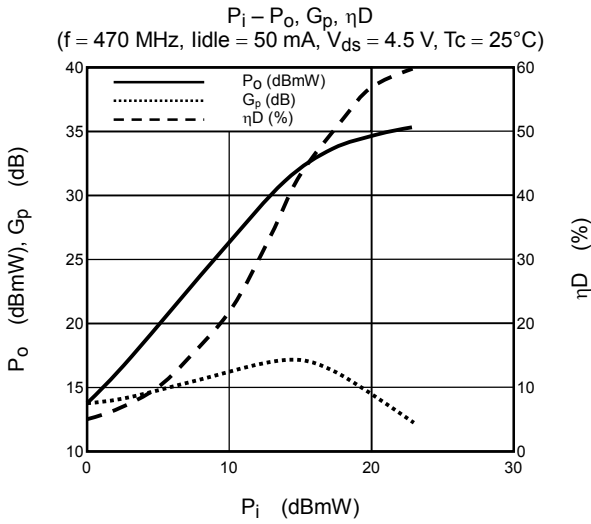
Characteristics	Symbol	Test Condition	Min	Typ.	Max	Unit
Output power	P_o	$V_{DS} = 4.5\text{ V}$, $I_{idle} = 50\text{ mA}$ ($V_{GS} = \text{adjust}$) $f = 470\text{ MHz}$, $P_i = 20\text{dBmW}$ $Z_G = Z_L = 50\ \Omega$	33.5	—	—	dBmW
Drain efficiency	η_D		50.0	—	—	%
Power gain	G_p		13.5	—	—	dB
Threshold voltage	V_{th}	$V_{DS} = 4.5\text{ V}$, $I_D = 0.5\text{ mA}$	—	0.8	—	V
Drain cut-off current	I_{DSS}	$V_{DS} = 10\text{ V}$, $V_{GS} = 0\text{ V}$	—	—	10	μA
Gate-source leakage current	I_{GSS}	$V_{GS} = 5\text{ V}$, $V_{DS} = 0\text{ V}$	—	—	5	μA
Load mismatch (Note 2)	—	$V_{DS} = 5\text{ V}$, $f = 470\text{ MHz}$, $P_i = 20\text{dBmW}$, $P_o = 33.5\text{dBmW}$ ($V_{GS} = \text{adjust}$) VSWR LOAD 10:1 all phase	No degradation			—

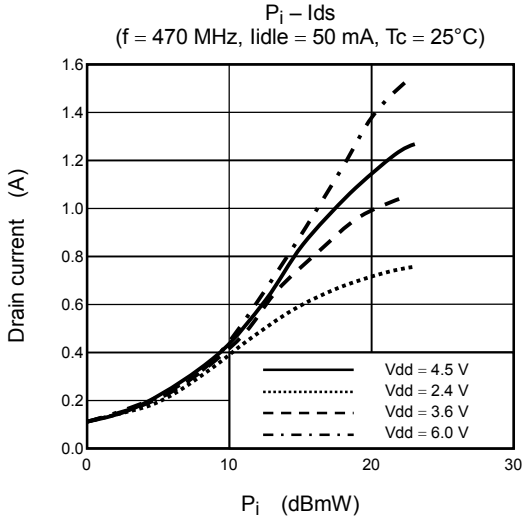
Caution: This is transistor the electrostatic sensitive device. Please handle with caution.

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

Test Circuit







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

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