

TOSHIBA Field Effect Transistor Silicon N Channel MOS Type

2SK3078A

VHF/UHF Band Amplifier Applications

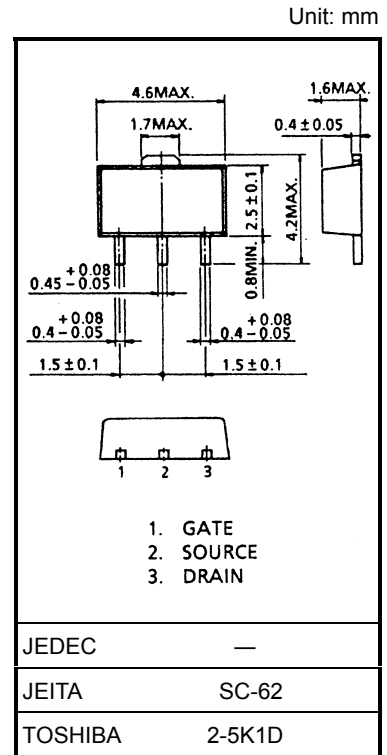
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- Output power: $P_o \geq 28.0\text{dBmW}$
- Gain: $G_p \geq 8.0\text{dB}$
- Drain Efficiency: $\eta_D \geq 50\%$

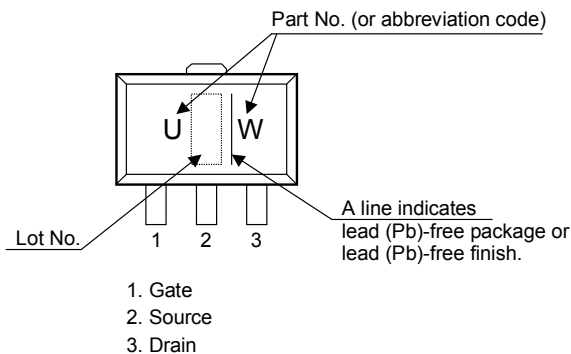
Maximum Ratings (Ta = 25°C)

Characteristics	Symbol	Rating	Unit
Drain-source voltage	V_{DSS}	10	V
Gate-source voltage	V_{GSS}	5	V
Drain current	I_D	0.5	A
Power dissipation	P_D (Note 1)	3	W
Channel temperature	T_{ch}	150	°C
Storage temperature range	T_{stg}	-45~150	°C

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



Marking



Caution: This device is sensitive to electrostatic discharge.

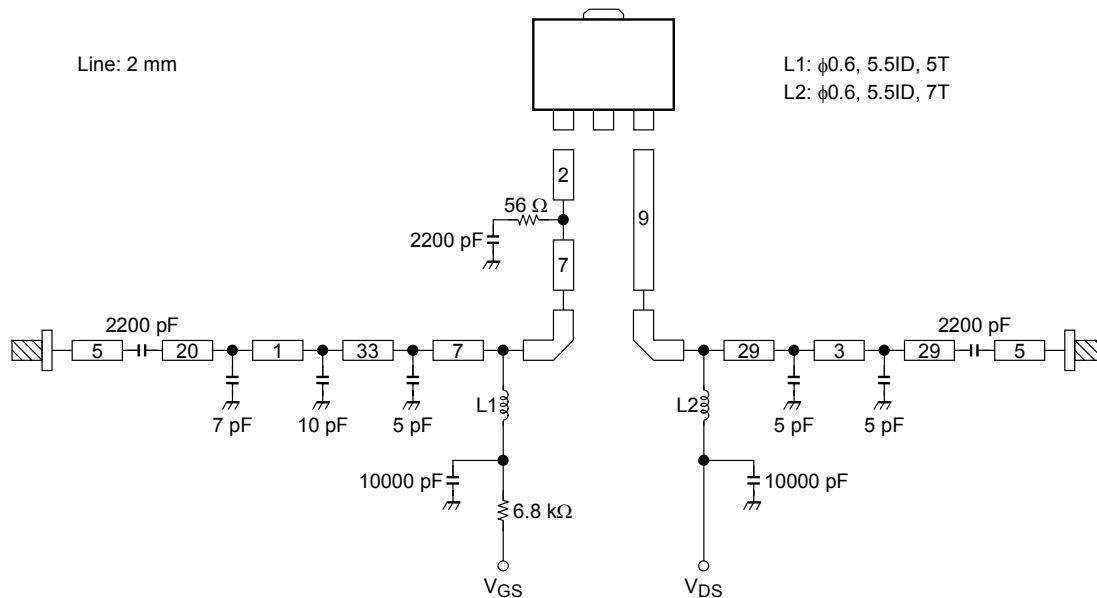
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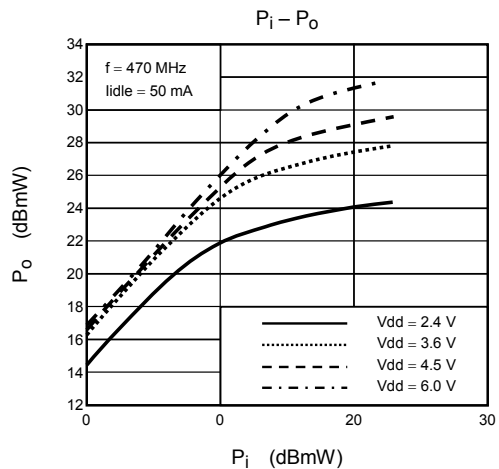
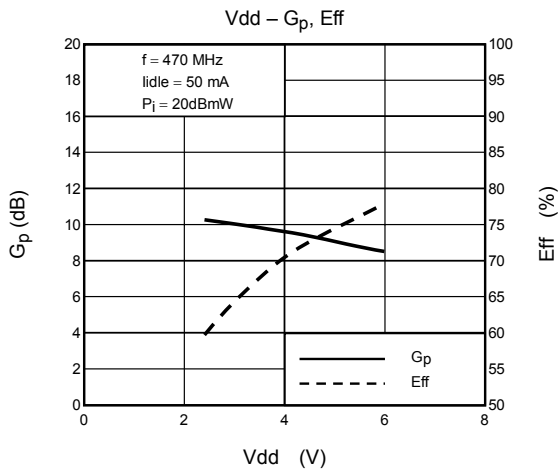
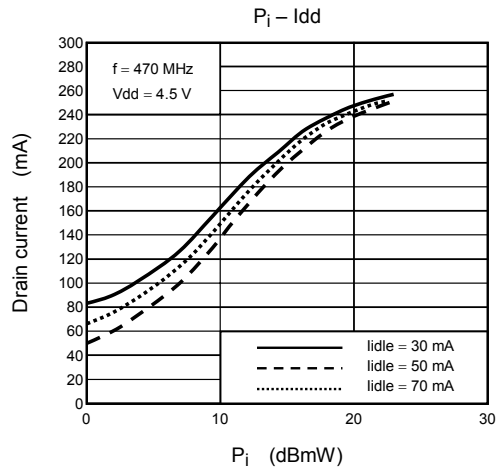
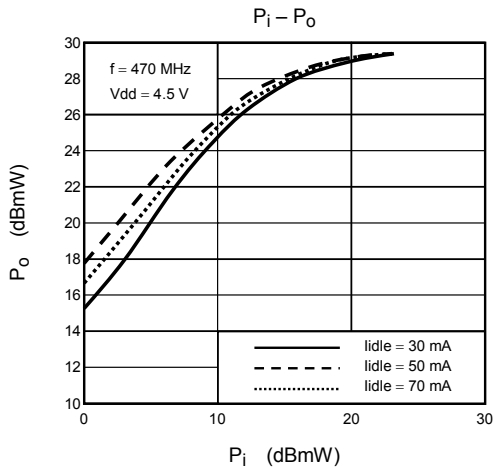
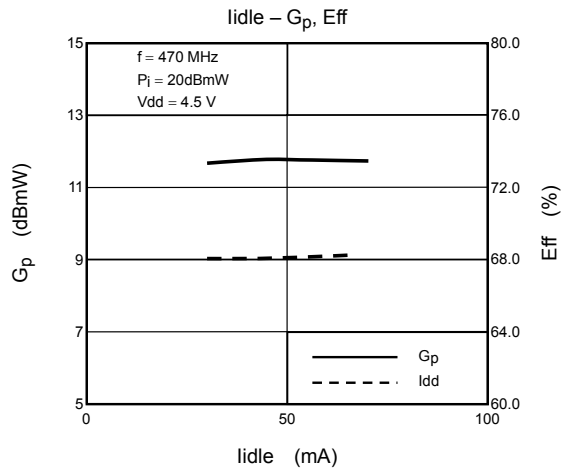
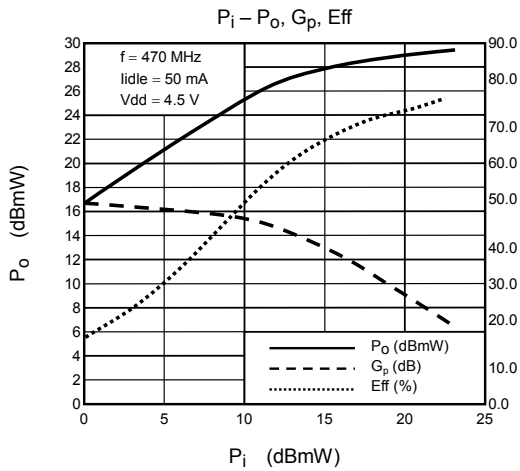
Electrical Characteristics (Ta = 25°C)

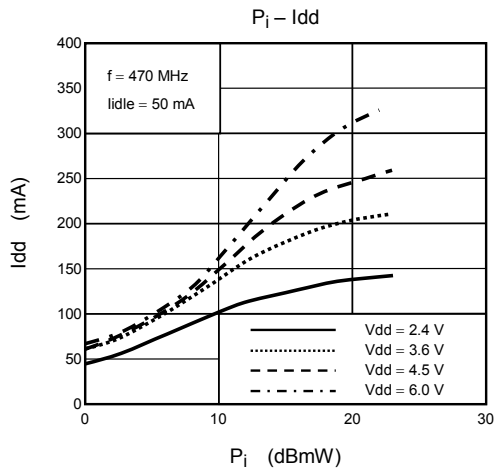
Characteristics	Symbol	Test Condition	Min	Typ.	Max	Unit
Output power	P_O	$V_{DS} = 4.5 \text{ V}$, $I_{D} = 50 \text{ mA}$ ($V_{GS} = \text{adjust}$) $f = 470 \text{ MHz}$, $P_i = 20 \text{ dBmW}$ $Z_G = Z_L = 50 \Omega$	28.0	—	—	dBmW
Drain efficiency	η_D		50	—	—	%
Power gain	G_p		8.0	—	—	dB
Threshold voltage	V_{th}	$V_{DS} = 4.8 \text{ V}$, $I_D = 0.5 \text{ mA}$	0.20	—	1.20	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)	—	$V_{DS} = 6.5 \text{ V}$, $f = 470 \text{ MHz}$, $P_i = 20 \text{ dBmW}$, $P_o = 28.0 \text{ dBmW}$ ($V_{GS} = \text{adjust}$) VSWR LOAD 10:1 all phase	No degradation			—

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

PF Output Power Test Fixture







Note3: These are typical curves and devices are not necessarily guaranteed at these curves.

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