

TOSHIBA Field Effect Transistor Silicon N Channel MOS Type

2SK3078A

VHF/UHF Band Amplifier Applications

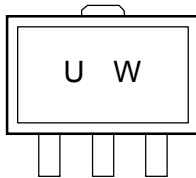
- Output power: $P_o \geq 28.0\text{dBmW}$
- Gain: $G_p \geq 8.0\text{dB}$
- Drain Efficiency: $\eta_D \geq 50\%$

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

Characteristics	Symbol	Rating	Unit
Drain-source voltage	V_{DS}	10	V
Gate-source voltage	V_{GS}	5	V
Drain current	I_D	0.5	A
Power dissipation	P_D (Note 1)	3	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



Unit: mm

JEDEC	—
JEITA	SC-62
TOSHIBA	2-5K1D

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

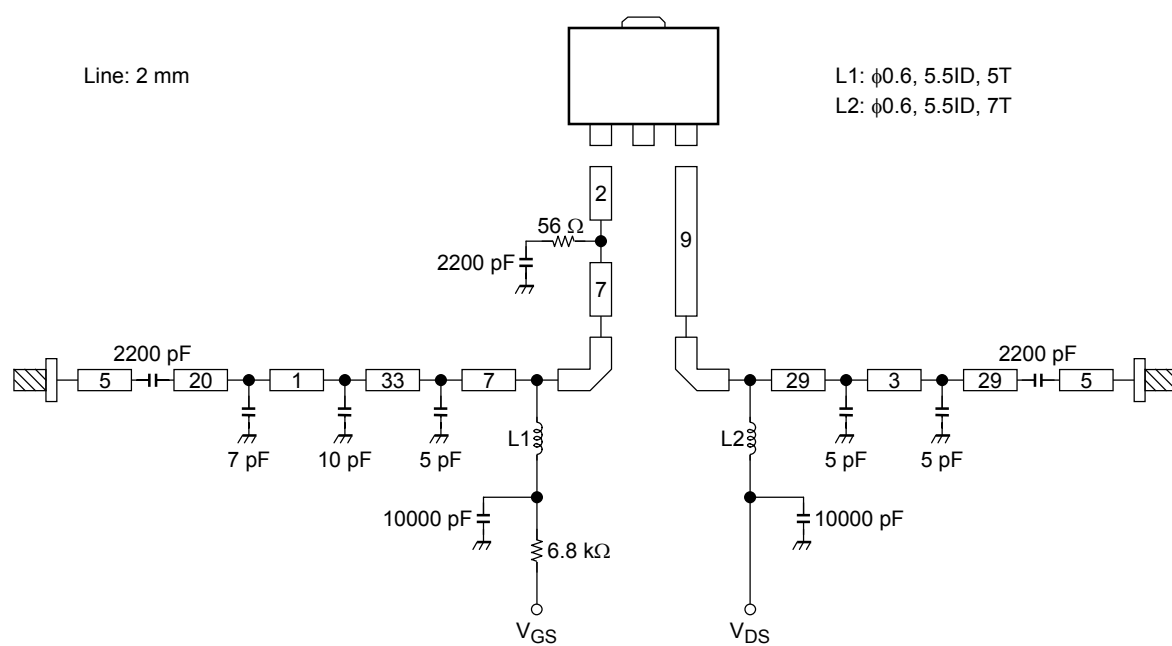
Characteristics	Symbol	Test Condition	Min	Typ.	Max	Unit
Output power	P_O	$V_{DS} = 4.5\text{ V}$, $I_{idle} = 50\text{ mA}$ ($V_{GS} = \text{adjust}$)	28.0	—	—	dBmW
Drain efficiency	η_D	$f = 470\text{ MHz}$, $P_i = 20\text{dBmW}$ $Z_G = Z_L = 50\ \Omega$	50	—	—	%
Power gain	G_p		8.0	—	—	dB
Threshold 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			—

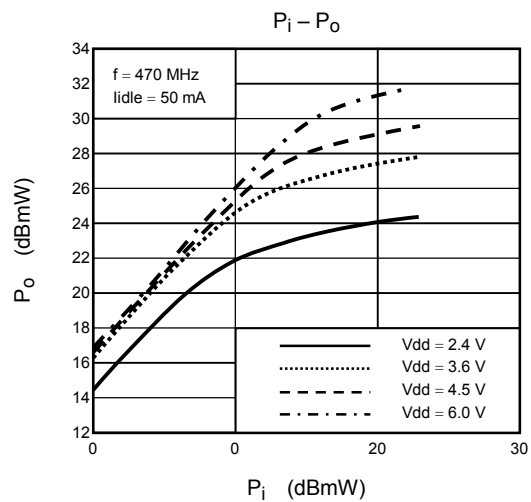
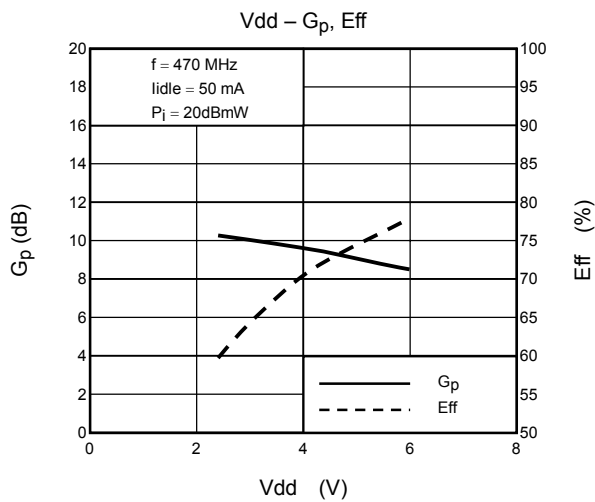
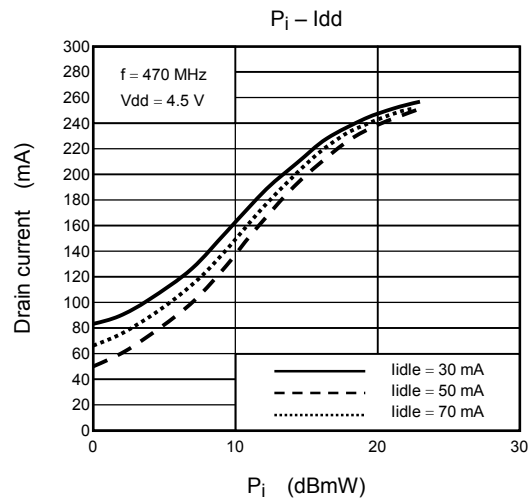
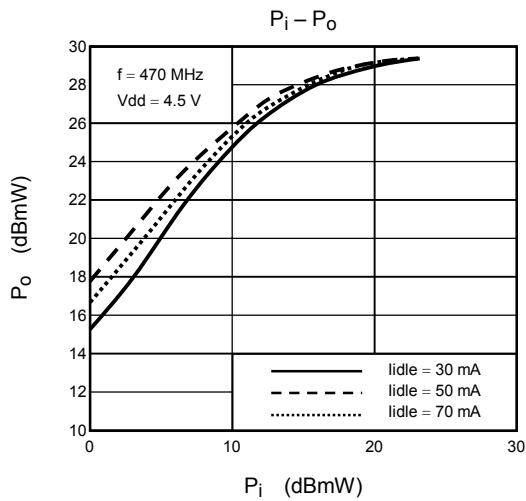
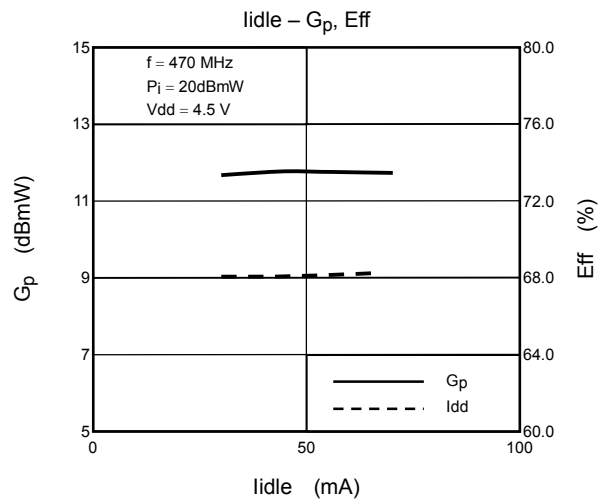
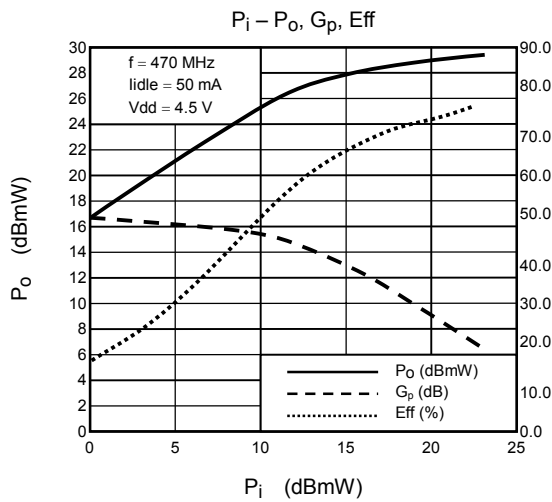
Caution: This transistor is the electrostatic sensitive device. Please handle with caution.

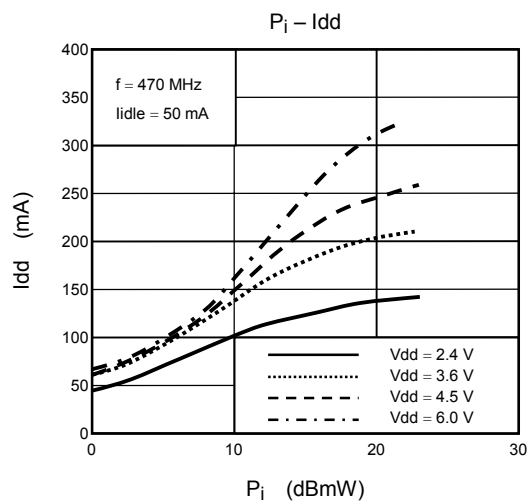
Note 2: When the RF output power test fixture is used

Line: 2 mm

L1: $\phi 0.6$, 5.5ID, 5T
L2: $\phi 0.6$, 5.5ID, 7T







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

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