

2SK3756

VHF- and UHF-band Amplifier Applications

- Output power: $P_O = 32\text{dBmW}$ (typ)
- Gain: $G_P = 12\text{dB}$ (typ)
- Drain efficiency: $\eta_D = 60\%$ (typ)

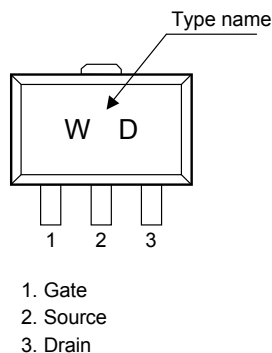
Maximum Ratings (Ta = 25°C)

Characteristics	Symbol	Rating	Unit
Drain-source voltage	V_{DSS}	7.5	V
Gain-source voltage	$V_{GSS}(\text{Note 1})$	3	V
Drain current	I_D	1	A
Power dissipation	P_D (Note 2)	3	W
Channel temperature	T_{ch}	150	°C
Storage temperature range	T_{stg}	-45~150	°C

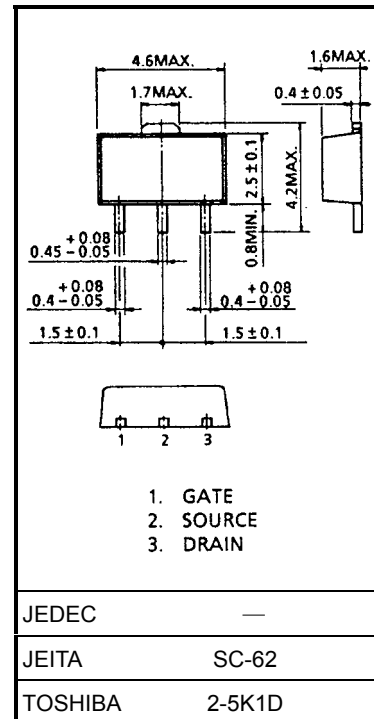
Note 1: Recommended Operation Condition: 0~3V

Note 2: $T_c = 25^{\circ}\text{C}$ (When mounted on a 0.8 mm glass epoxy PCB)

Marking



Unit: mm



Caution: This device is sensitive to electrostatic discharge.

Please make enough tool and equipment earthed when you handle.

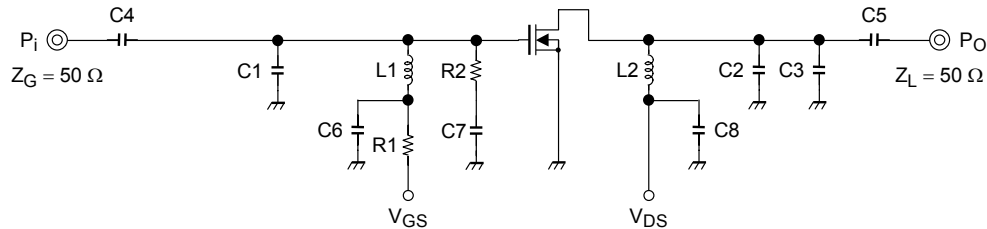
Electrical Characteristics (Ta = 25°C)

Characteristics	Symbol	Test Condition	Min	Typ.	Max	Unit
Output power	P_O	$V_{DS} = 4.5 \text{ V}$, $I_{idle} = 200 \text{ mA}$ ($V_{GS} = \text{adjust}$), $f = 470 \text{ MHz}$, $P_i = 20 \text{ dBmW}$,	31	32	—	dBmW
Drain efficiency	η_D		50	60	—	%
Power gain	G_P		—	12	—	dB
Threshold voltage	V_{th}	$V_{DS} = 4.5 \text{ V}$, $I_D = 0.5 \text{ mA}$	—	0.95	1.45	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}	$V_{GS} = 3 \text{ V}$, $V_{DS} = 0 \text{ V}$	—	—	5	μA
Load Mismatch (Note 3)	—	$V_{DS} = 4.5 \text{ V}$, $f = 470 \text{ MHz}$, $P_i = 20 \text{ dBmW}$, $P_o = 31 \text{ dBmW}$ ($V_{GS} = \text{adjust}$), VSWR LOAD 10:1 all phase	No Degradation			—

Note 3: These characteristic values are measured using measurement tools specified by Toshiba.

Output Power Test Fixture

(Test Condition: $f = 470 \text{ MHz}$, $V_{DS} = 4.5 \text{ V}$, $I_{idle} = 200 \text{ mA}$, $P_i = 20 \text{ dBmW}$)



C1: 20 pF

C2: 17 pF

C3: 1 pF

C4: 2200 pF

C5: 2200 pF

C6: 10000 pF

C7: 2200 pF

C8: 10000 pF

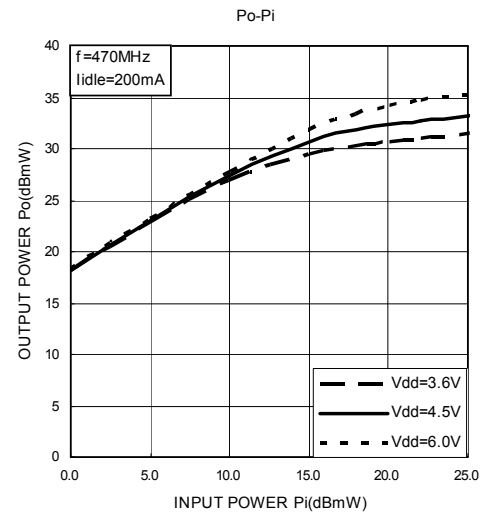
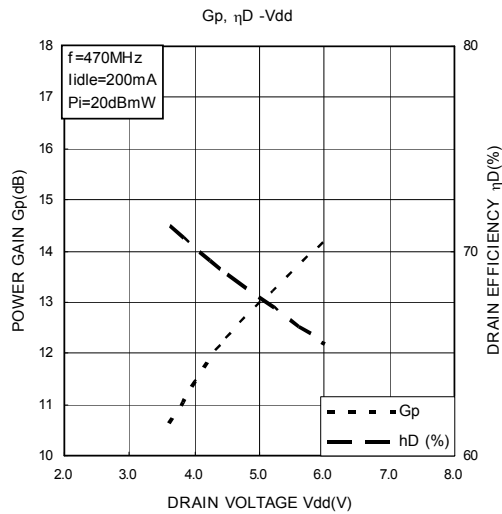
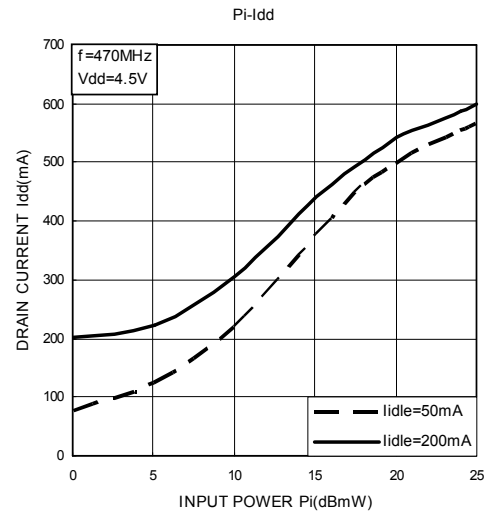
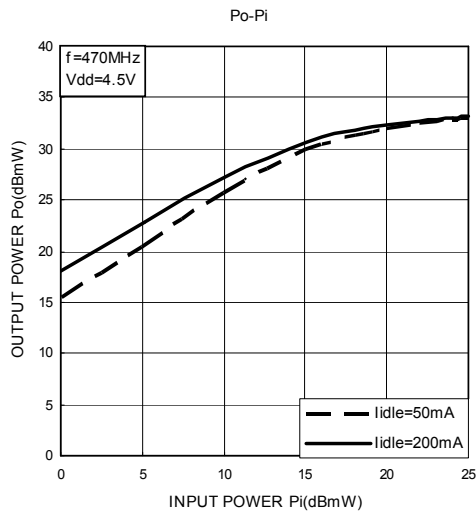
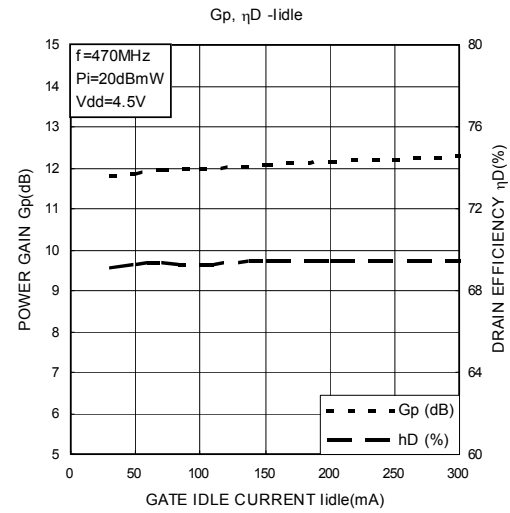
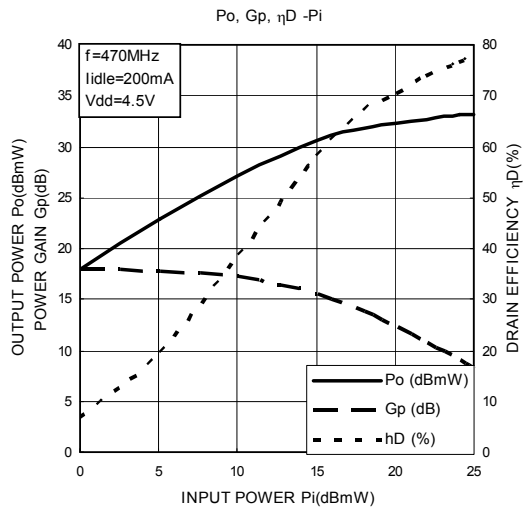
L1: $\phi 0.6 \text{ mm}$ enamel wire, 5.5ID, 5T

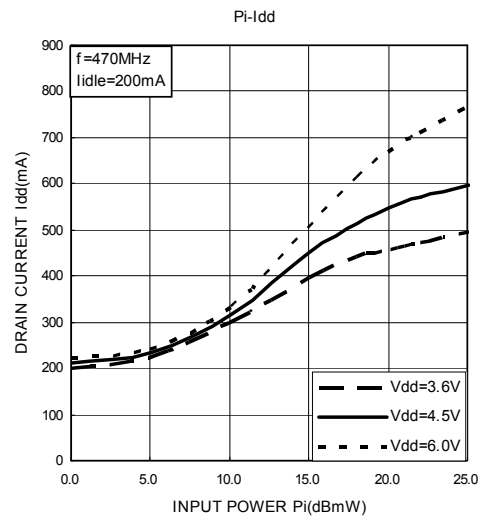
L2: $\phi 0.6 \text{ mm}$ enamel wire, 5.5ID, 7T

Line: 2mm

R1: 6.8 k Ω

R2: 56 Ω





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