

2SK3476

VHF- and UHF-band Amplifier Applications

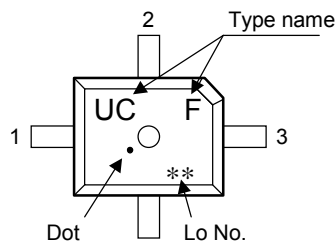
- Output power: $P_O = 7.0$ W (min)
- Gain: $G_p = 11.4$ dB (min)
- Drain efficiency: $\eta_D = 60\%$ (min)

Maximum Ratings (Ta = 25°C)

Characteristics	Symbol	Rating	Unit
Drain-source voltage	V_{DSS}	20	V
Gain-source voltage	V_{GSS}	±5	V
Drain current	I_D	3	A
Power dissipation	P_D (Note 1)	20	W
Channel temperature	T_{ch}	150	°C
Storage temperature range	T_{stg}	-45~150	°C

Note 1: $T_c = 25^\circ\text{C}$ (When mounted on a 1.6 mm glass epoxy PCB)

Marking

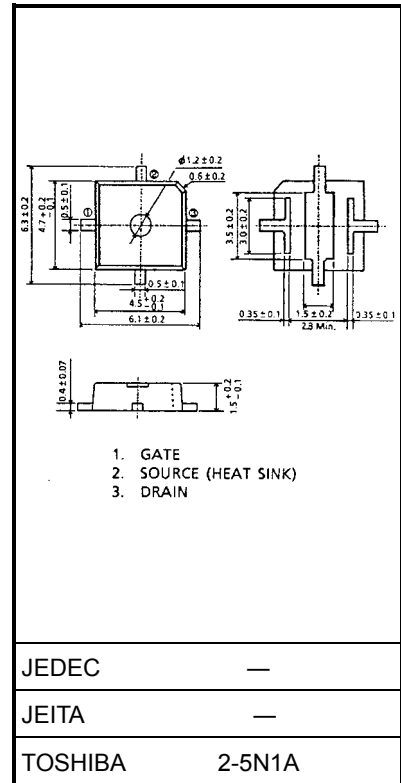


1. Gate
2. Source (heat sink)
3. Drain

Caution

Please take care to avoid generating static electricity when handling this transistor.

Unit: mm



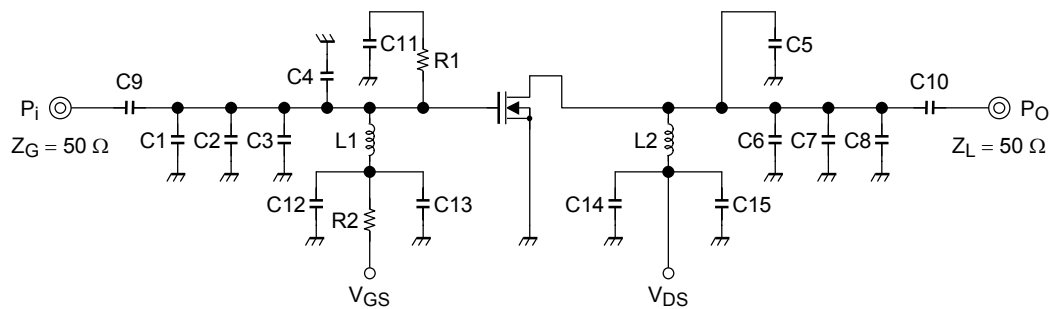
Electrical Characteristics (Ta = 25°C)

Characteristics	Symbol	Test Condition	Min	Typ.	Max	Unit
Drain cut-off current	I_{DSS}	$V_{DS} = 20\text{ V}, V_{GS} = 0\text{ V}$	—	—	5	μA
Gate-source leakage current	I_{GSS}	$V_{GS} = 10\text{ V}$	—	—	5	μA
Threshold voltage	V_{th}	$V_{DS} = 7.2\text{ V}, I_D = 2\text{ mA}$	0.55	1.05	1.55	V
Drain-source on-voltage	$V_{DS(ON)}$	$V_{GS} = 10\text{ V}, I_D = 75\text{ mA}$	—	18	—	mV
Forward transconductance	Y_{fs}	$V_{DS} = 7.2\text{ V}, I_{DS} = 1\text{ A}$	—	1	—	S
Input capacitance	C_{iss}	$V_{DS} = 7.2\text{ V}, V_{GS} = 0\text{ V}, f = 1\text{ MHz}$	—	53	—	pF
Output capacitance	C_{oss}	$V_{DS} = 7.2\text{ V}, V_{GS} = 0\text{ V}, f = 1\text{ MHz}$	—	49	—	pF
Output power	P_O	$V_{DS} = 7.2\text{ V},$ $I_{idle} = 500\text{ mA} (V_{GS} = \text{adjust}),$ $f = 520\text{ MHz}, P_i = 500\text{ mW},$	7	—	—	W
Drain efficiency	η_D		60	—	—	%
Power gain	G_p		11.4	—	—	dB
Low voltage output power	P_{OL}	$V_{DS} = 6.0\text{ V},$ $I_{idle} = 500\text{ mA} (V_{GS} = \text{adjust}),$ $f = 520\text{ MHz}, P_i = 500\text{ mW},$	5	—	—	W
Load mismatch	—	$V_{DS} = 10\text{ V}, P_O = 7\text{ W},$ $V_{GS} = \text{adjust}, P_i = \text{adjust},$ $f = 520\text{ MHz},$ VSWR LOAD 20:1 all phase	No degradation			

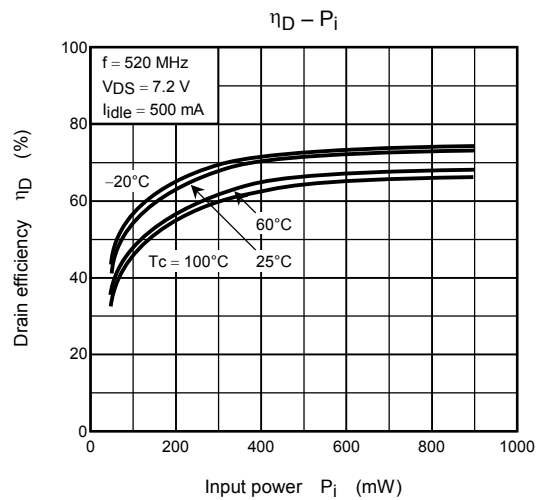
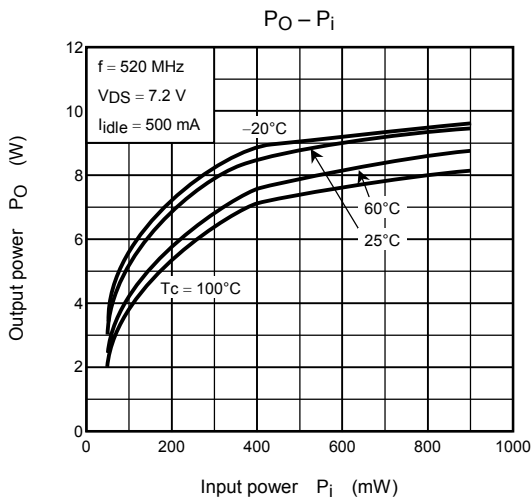
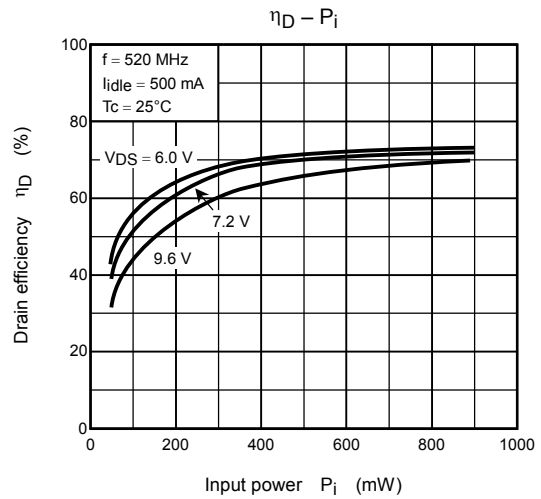
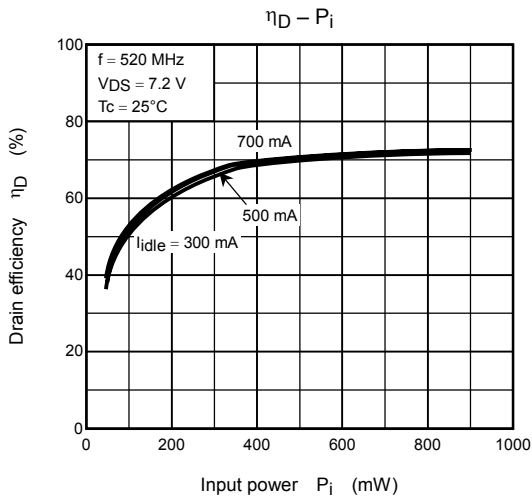
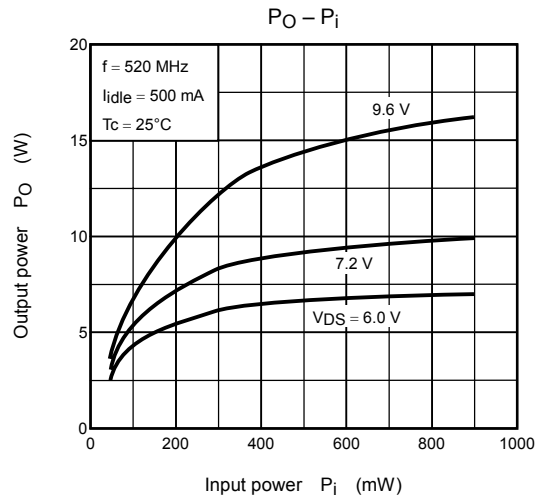
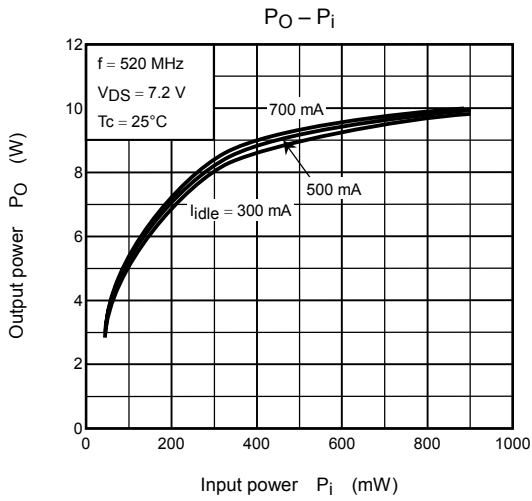
Note 1: These characteristic values are measured using measurement tools specified by Toshiba.

Output Power Test Fixture

(Test Condition: $f = 520\text{ MHz}, V_{DS} = 7.2\text{ V}, I_{idle} = 500\text{ mA}, P_i = 500\text{ mW}$)



- | | | |
|-----------------------|---|--------------------|
| C1: 15 pF | L1: $\phi 0.6\text{ mm}$ enamel wire, 5.8ID, 4T | R1: 2.2 Ω |
| C2: 11 pF | L2: $\phi 0.6\text{ mm}$ enamel wire, 5.8ID, 8T | R2: 1.5 k Ω |
| C3: 9 pF | | |
| C4: 30 pF | | |
| C5: 30 pF | | |
| C6: 11 pF | | |
| C7: 8 pF | | |
| C8: 9 pF | | |
| C9: 2200 pF | | |
| C10: 2200 pF | | |
| C11: 2200 pF | | |
| C12: 10000 pF | | |
| C13: 10 μF | | |
| C14: 10000 pF | | |
| C15: 10 μF | | |



Note 2: These are only typical curves and devices are not necessarily guaranteed at these curves.

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