

2SK3475

VHF- and UHF-band Amplifier Applications

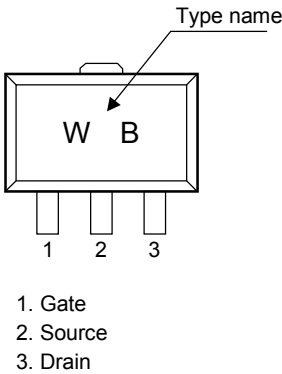
- Output power: $P_O = 630 \text{ mW (min)}$
- Gain: $G_p = 14.9\text{dB (min)}$
- Drain efficiency: $\eta_D = 45\% \text{ (min)}$

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

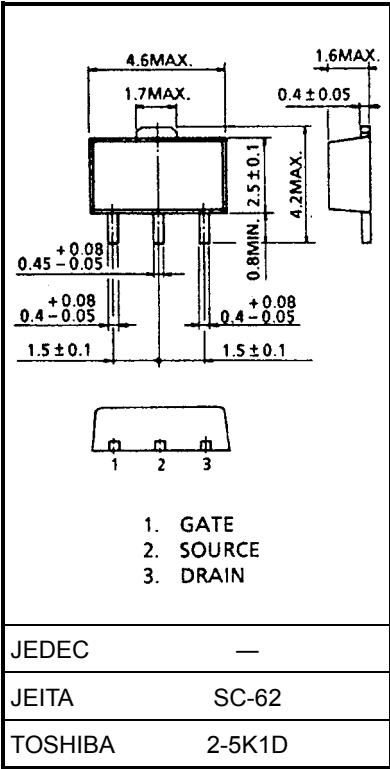
Marking



Caution

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

Unit: mm



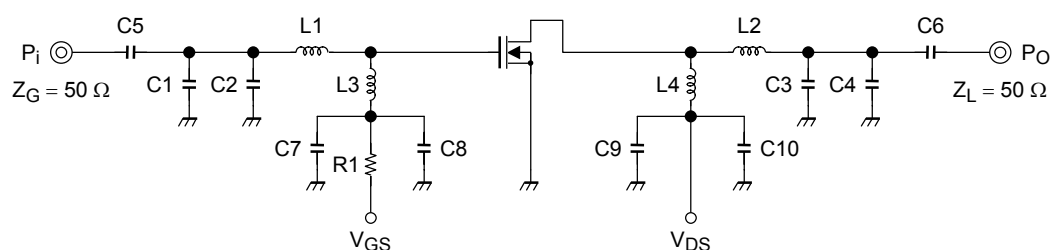
Electrical Characteristics (Ta = 25°C)

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}	$V_{DS} = 7.2\text{ V}$, $I_D = 2\text{ mA}$	1.9	2.4	2.9	V
Drain-source on-voltage	$V_{DS(ON)}$	$V_{GS} = 10\text{ V}$, $I_D = 75\text{ mA}$	—	87	—	mV
Forward transconductance	Y_{fs}	$V_{DS} = 7.2\text{ V}$, $I_{DS} = 208\text{ mA}$	—	260	—	mS
Input capacitance	C_{iss}	$V_{DS} = 7.2\text{ V}$, $V_{GS} = 0\text{ V}$, $f = 1\text{ MHz}$	—	11	—	pF
Output capacitance	C_{oss}	$V_{DS} = 7.2\text{ V}$, $V_{GS} = 0\text{ V}$, $f = 1\text{ MHz}$	—	12.5	—	pF
Output power	P_O	$V_{DS} = 7.2\text{ V}$, $I_{idle} = 50\text{ mA}$ ($V_{GS} = \text{adjust}$), $f = 520\text{ MHz}$, $P_i = 20\text{ mW}$,	630	—	—	mW
Drain efficiency	η_D		45	—	—	%
Power gain	G_p		14.9	—	—	dB
Low voltage output power	P_{OL}	$V_{DS} = 6.0\text{ V}$, $I_{idle} = 50\text{ mA}$ ($V_{GS} = \text{adjust}$), $f = 520\text{ MHz}$, $P_i = 20\text{ mW}$,	500	—	—	mW

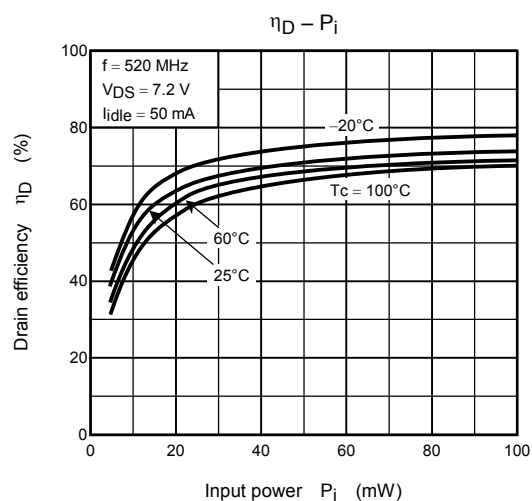
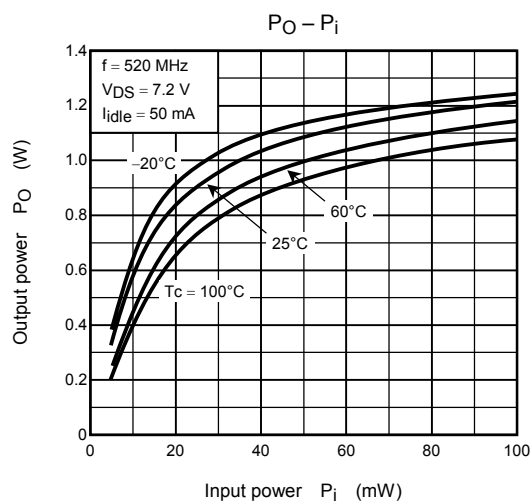
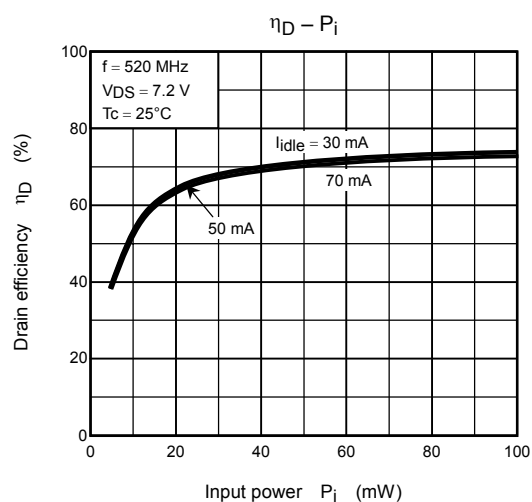
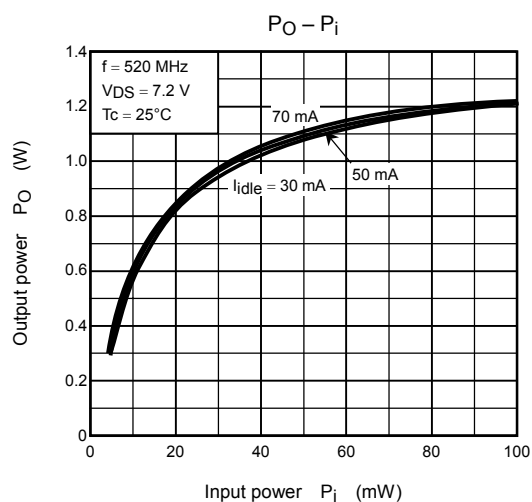
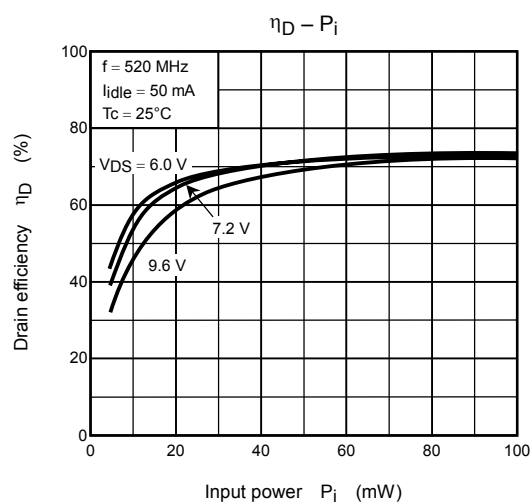
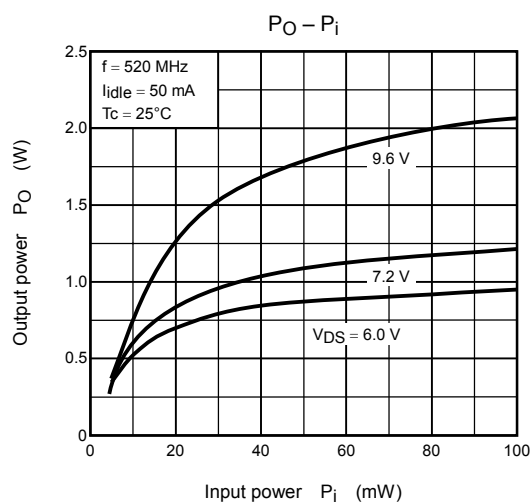
Note 1: These characteristic values are measured using measurement tools specified by Toshiba.

Output Power Test Fixture

(Test Condition: $f = 520\text{ MHz}$, $V_{DS} = 7.2\text{ V}$, $I_{idle} = 50\text{ mA}$, $P_i = 20\text{ mW}$)



C1: 10 pF	L1: $\phi 0.8\text{ mm}$ enamel wire, 2.2ID, 1T	R1: 1.5 k Ω
C2: 10 pF	L2: $\phi 0.8\text{ mm}$ enamel wire, 2.2ID, 1T	
C3: 9 pF	L3: $\phi 0.8\text{ mm}$ enamel wire, 5.5ID, 4T	
C4: 6 pF	L4: $\phi 0.8\text{ mm}$ enamel wire, 5.5ID, 8T	
C5: 2200 pF		
C6: 2200 pF		
C7: 10 μF		
C8: 10000 pF		
C9: 10 μF		
C10: 10000 pF		



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

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