

2SK2220, 2SK2221

Silicon N Channel MOS FET

Application

Low frequency power amplifier
Complementary pair with 2SJ351, 2SJ352

Features

- High power gain
- Excellent frequency response
- High speed switching
- Wide area of safe operation
- Enhancement-mode
- Good complementary characteristics
- Equipped with gate protection diodes

Table 1 Ordering Information

Type No.	V _{DSS}
2SK2220	180 V
2SK2221	200 V

Table 2 Absolute Maximum Ratings (Ta = 25°C)

Item	Symbol	Ratings	Unit
Drain to source voltage	2SK2220	180	V
	2SK2221	200	
Gate to source voltage	V _{GSS}	±20	V
Drain current	I _D	8	A
Body-drain diode reverse drain current	I _{DR}	8	A
Channel dissipation	P _{ch} *	100	W
Channel temperature	T _{ch}	150	°C
Storage temperature	T _{stg}	-55 to +150	°C

* Value at Tc = 25 °C

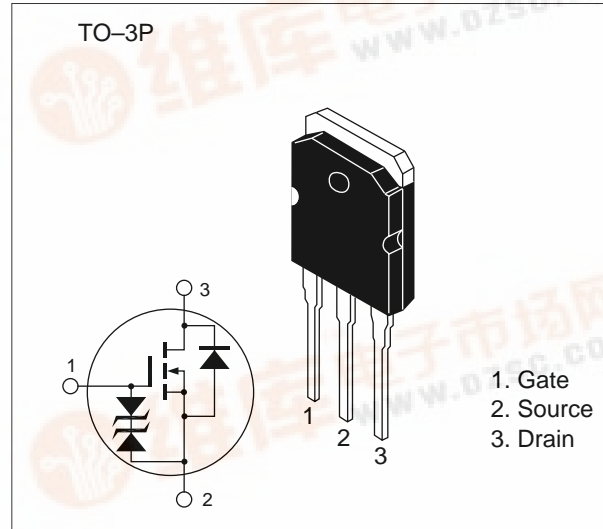
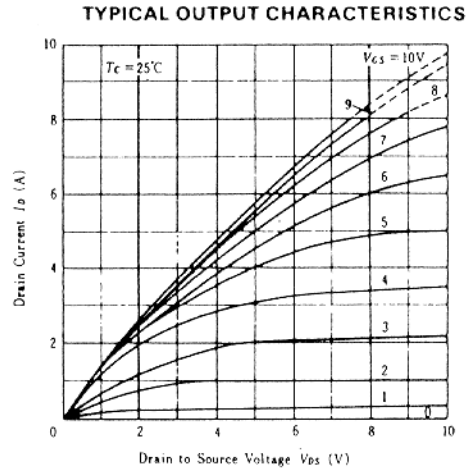
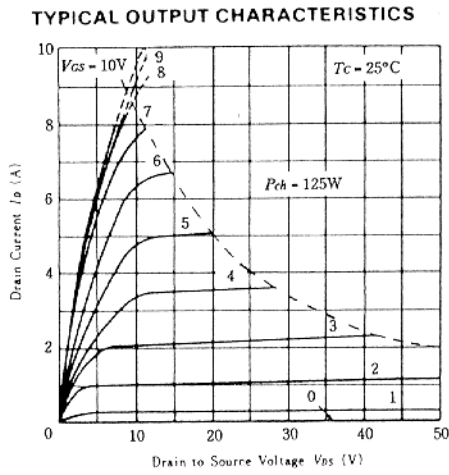
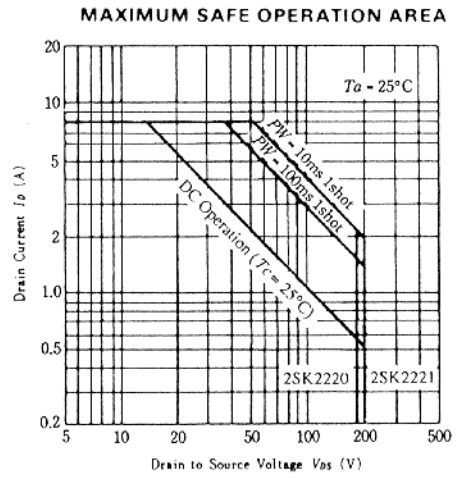
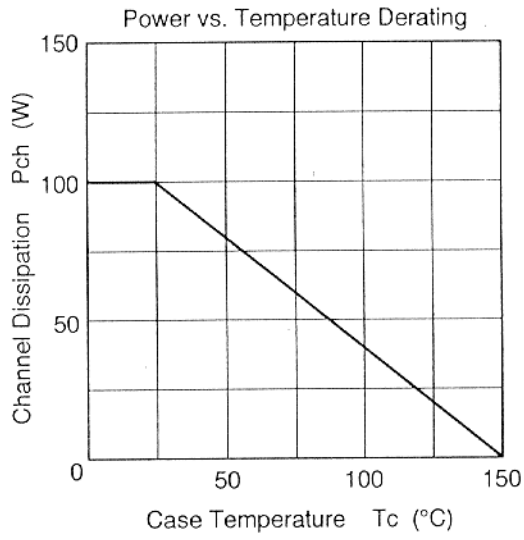


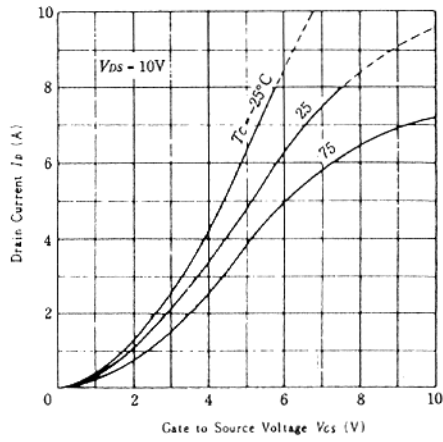
Table 3 Electrical Characteristics ($T_a = 25^\circ\text{C}$)

Item	Symbol	Min	Typ	Max	Unit	Test conditions
Drain to source breakdown voltage	2SK2220	180	—	—	V	$I_D = 10\text{ mA}$, $V_{GS} = -10\text{ V}$
	2SK2221	200	—	—		
Gate to source breakdown voltage	$V_{(BR)GSS}$	± 20	—	—	V	$I_G = \pm 100\ \mu\text{A}$, $V_{DS} = 0$
Gate to source cutoff voltage	$V_{GS(off)}$	0.15	—	1.45	V	$I_D = 100\text{ mA}$ $V_{DS} = 10\text{ V}$
Drain to source saturation voltage	$V_{DS(sat)}$	—	—	12	V	$I_D = 8\text{ A}$, $V_{GD} = 0\text{ V}^*$
Forward transfer admittance	$ y_{fs} $	0.7	1.0	1.4	S	$I_D = 3\text{ A}$ $V_{DS} = 10\text{ V}^*$
Input capacitance	C_{iss}	—	600	—	pF	$V_{GS} = -5\text{ V}$
Output capacitance	C_{oss}	—	800	—	pF	$V_{DS} = 10\text{ V}$
Reverse transfer capacitance	C_{rss}	—	8	—	pF	$f = 1\text{ MHz}$
Turn-on time	t_{on}	—	250	—	ns	$V_{DD} = 30\text{ V}$
Turn-off time	t_{off}	—	90	—	ns	$I_D = 4\text{ A}$

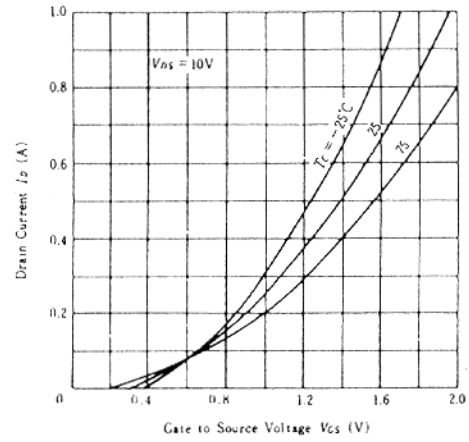
* Pulse Test



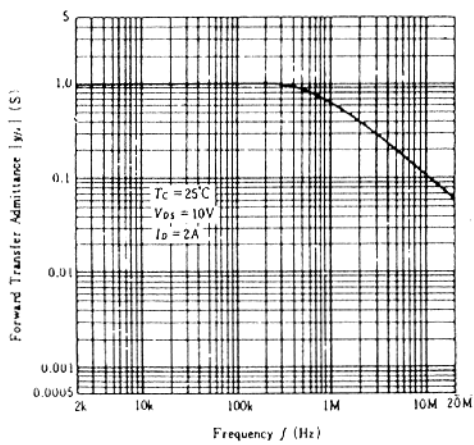
TYPICAL TRANSFER CHARACTERISTICS



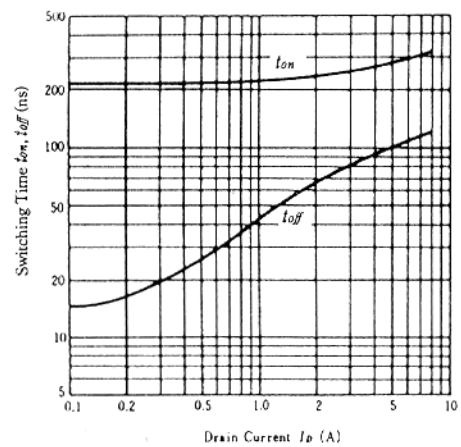
TYPICAL TRANSFER CHARACTERISTICS



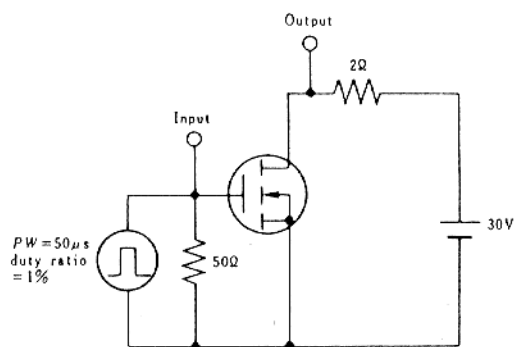
FORWARD TRANSFER ADMITTANCE VS. FREQUENCY



SWITCHING TIME VS. DRAIN CURRENT



SWITCHING TIME TEST CIRCUIT



WAVEFORMS

