

# 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

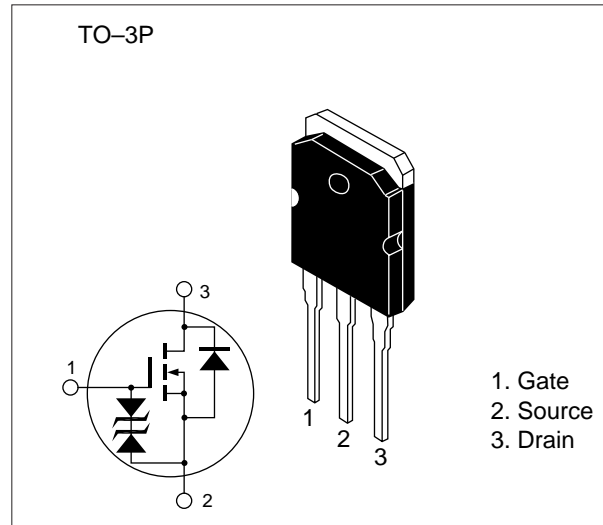
**Table 1 Ordering Information**

Type No.	V <sub>DSS</sub>
2SK2220	180 V
2SK2221	200 V

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

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

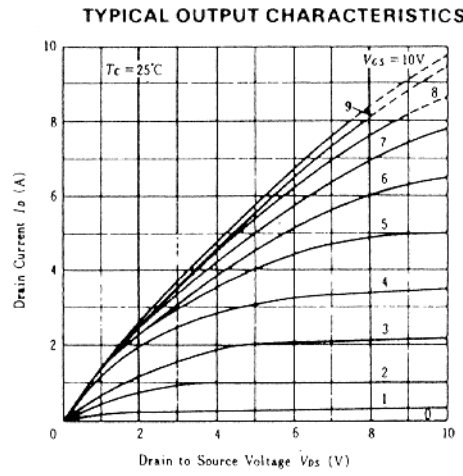
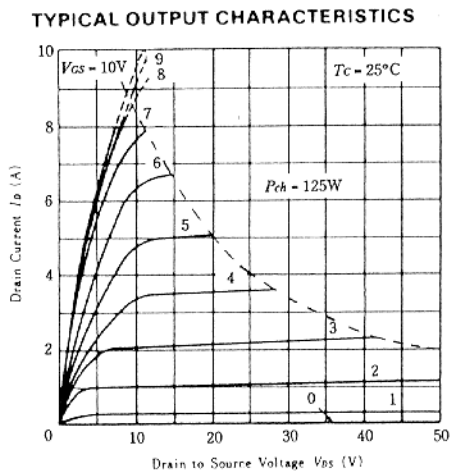
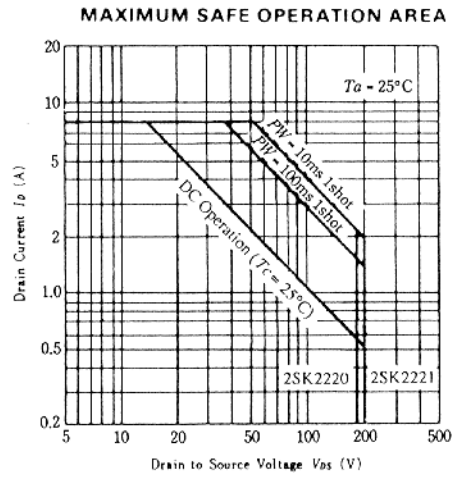
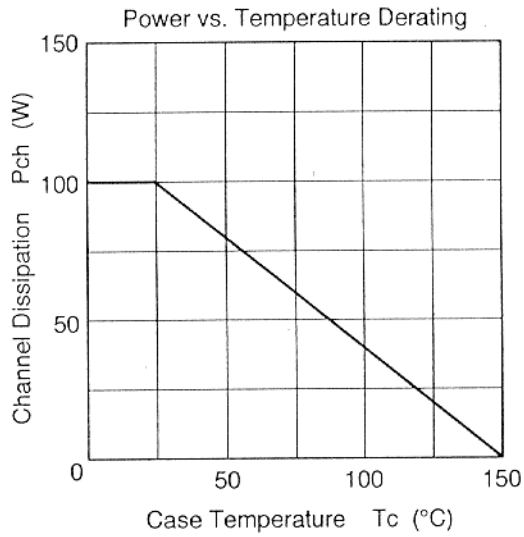
\* Value at T<sub>c</sub> = 25 °C



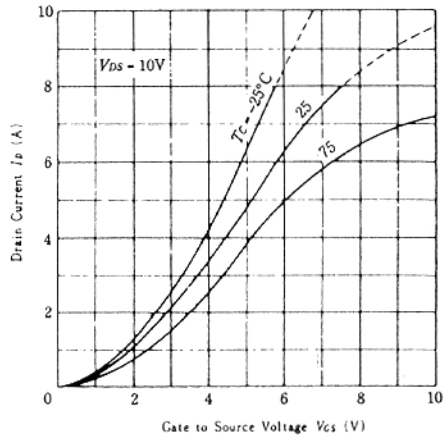
**Table 3 Electrical Characteristics** ( $T_a = 25^\circ\text{C}$ )

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	$V_{(BR)GSS}$	$\pm 20$	—	—	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	$I_D = 4\text{ A}$

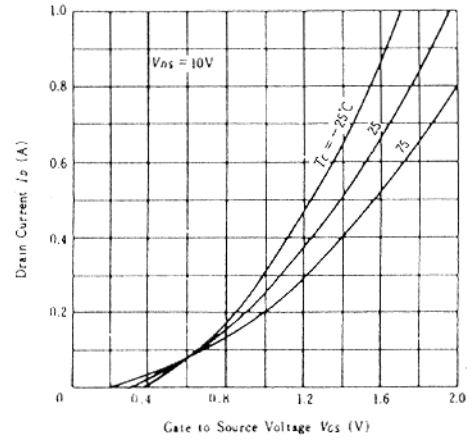
\* Pulse Test



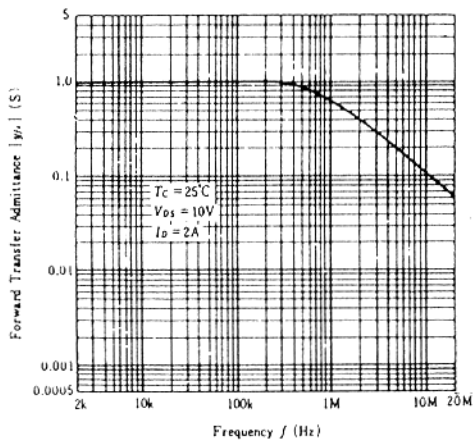
TYPICAL TRANSFER CHARACTERISTICS



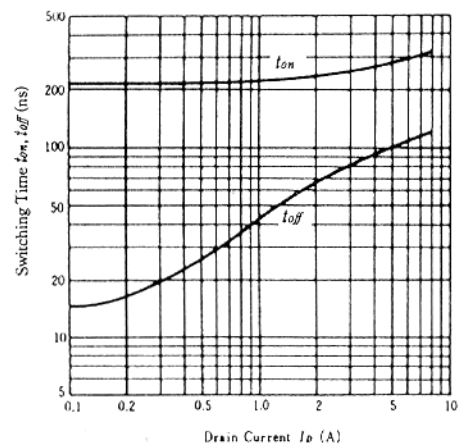
TYPICAL TRANSFER CHARACTERISTICS



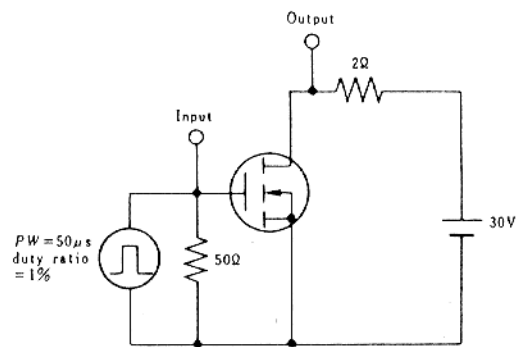
FORWARD TRANSFER ADMITTANCE VS. FREQUENCY



SWITCHING TIME VS. DRAIN CURRENT



### SWITCHING TIME TEST CIRCUIT



### WAVEFORMS

