

2SK2220, 2SK2221

Silicon N Channel MOS FET

REJ03G1004-0200
(Previous: ADE-208-1352)
Rev.2.00
Sep 07, 2005

Application

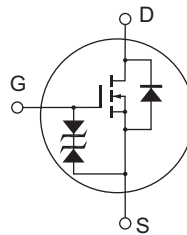
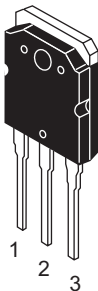
Low frequency power amplifier
Complementary pair with 2SJ351, 2SJ352

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

Outline

RENESAS Package code: PRSS0004ZE-A
(Package name: TO-3P)



1. Gate
2. Source
(Flange)
3. Drain

Absolute Maximum Ratings

(Ta = 25°C)

Item	Symbol	Ratings	Unit	
Drain to source voltage	V_{DSX}	2SK2220	180	V
		2SK2221	200	
Gate to source voltage	V_{GSS}	±20	V	
Drain current	I_D	8	A	
Body to drain diode reverse drain current	I_{DR}	8	A	
Channel dissipation	P_{ch}^{*1}	100	W	
Channel temperature	T_{ch}	150	°C	
Storage temperature	T_{stg}	-55 to +150	°C	

Note: 1. Value at Tc = 25°C

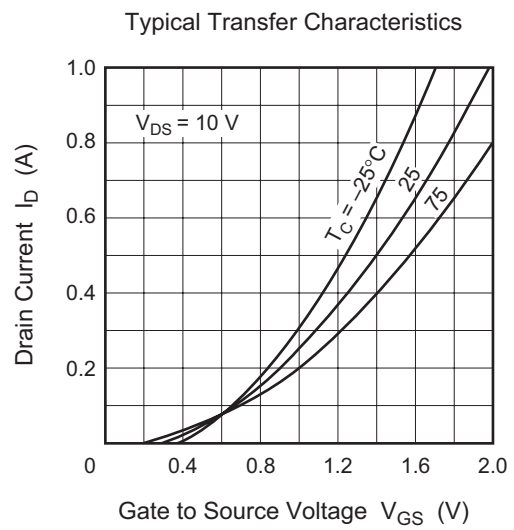
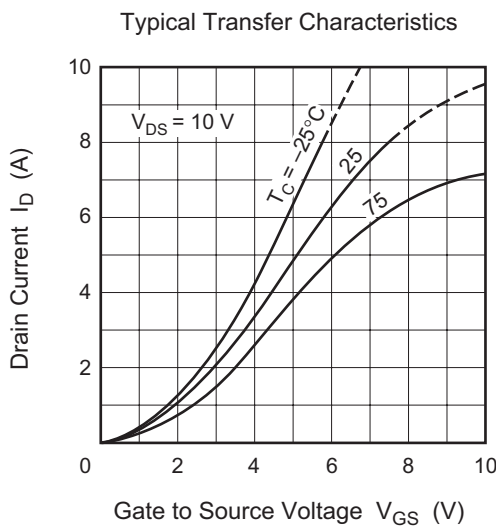
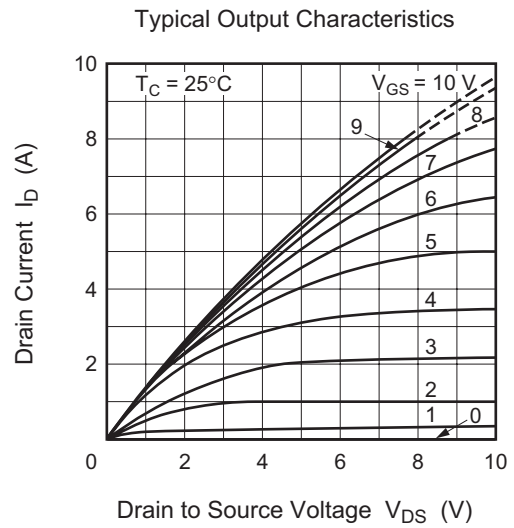
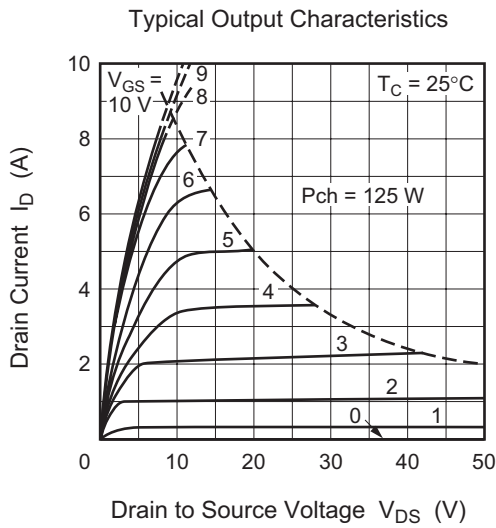
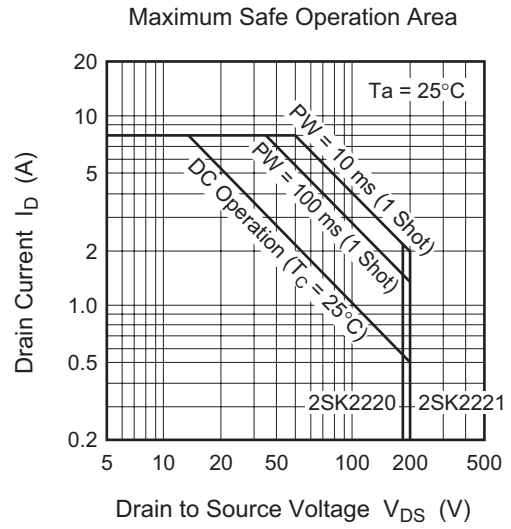
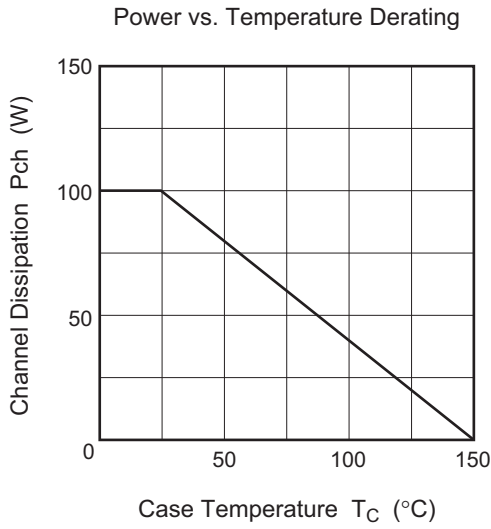
Electrical Characteristics

(Ta = 25°C)

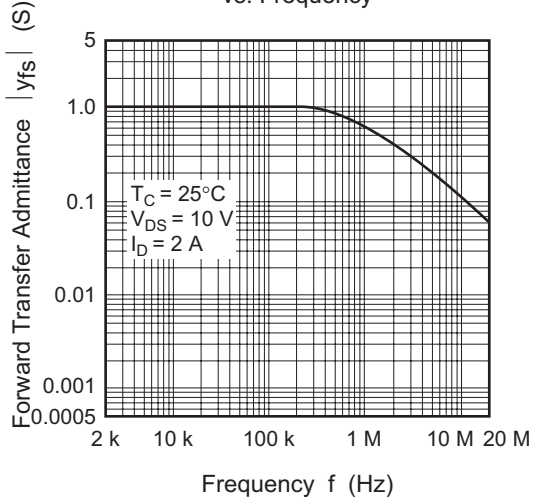
Item	Symbol	Min	Typ	Max	Unit	Test conditions	
Drain to source breakdown voltage	$V_{(BR)DSX}$	2SK2220	180	—	—	V	$I_D = 10 \text{ mA}$, $V_{GS} = -10 \text{ V}$
		2SK2221	200	—	—		
Gate to source breakdown voltage	$V_{(BR)GSS}$	±20	—	—	V	$I_G = \pm 100 \mu\text{A}$, $V_{DS} = 0$	
Gate to source cutoff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

Note: 2. Pulse Test

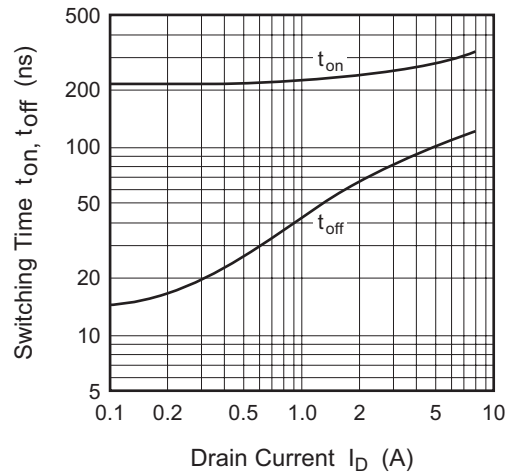
Main Characteristics



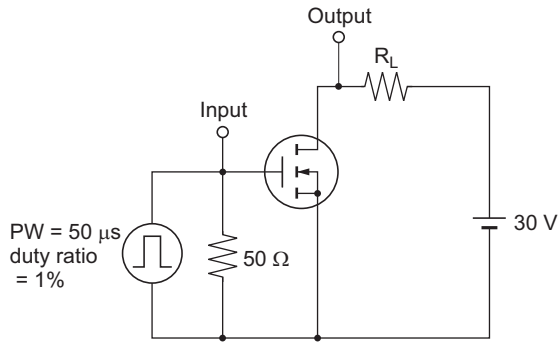
Forward Transfer Admittance vs. Frequency



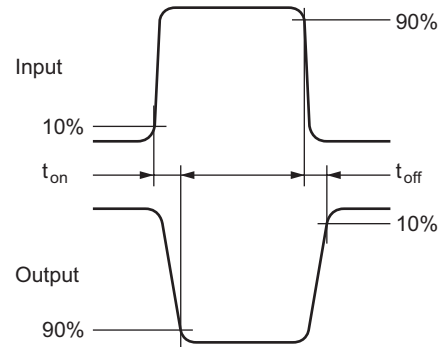
Switching Time vs. Drain Current



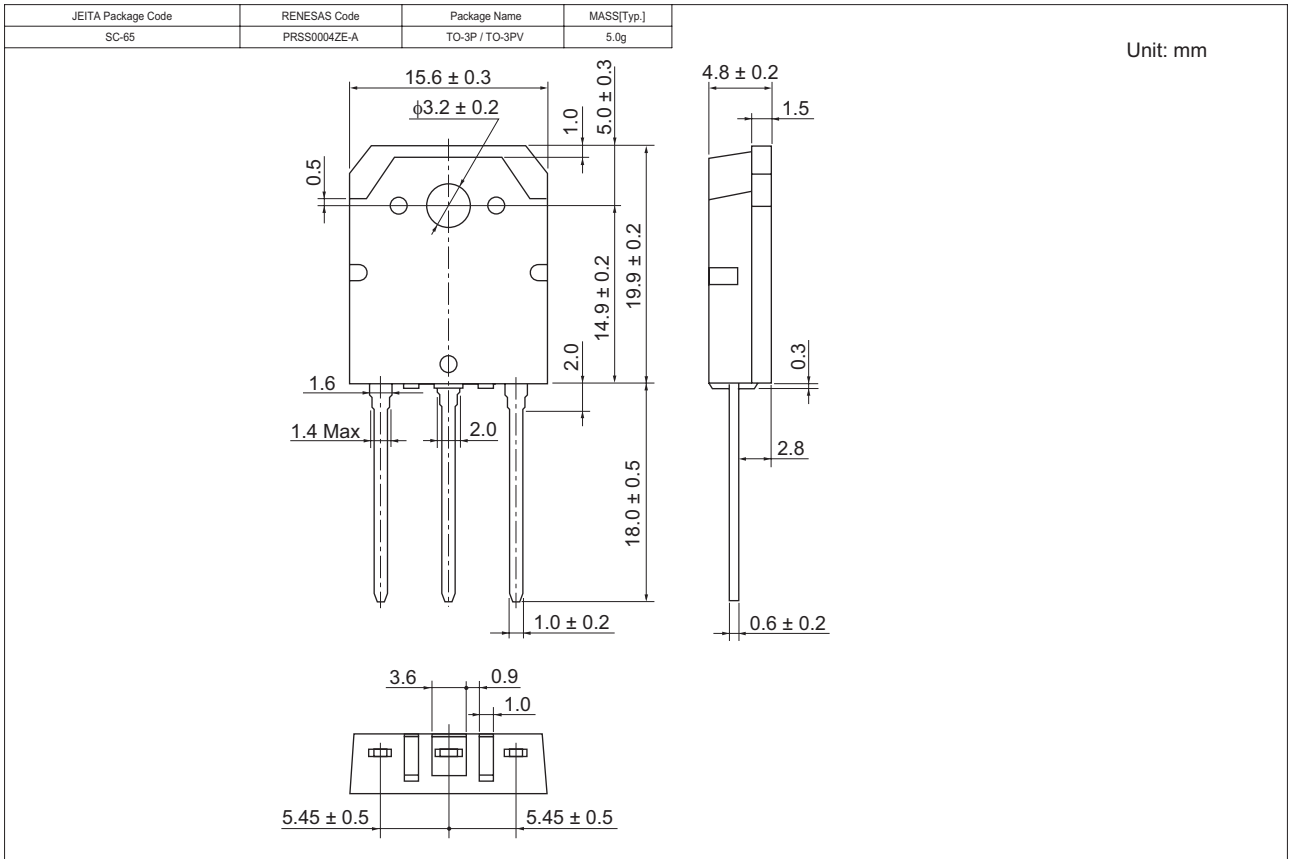
Switching Time Test Circuit



Waveforms



Package Dimensions



Ordering Information

Part Name	Quantity	Shipping Container
2SK2220-E	360 pcs	Box (Tube)
2SK2221-E	360 pcs	Box (Tube)

Note: For some grades, production may be terminated. Please contact the Renesas sales office to check the state of production before ordering the product.

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