

To our customers,

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Renesas Electronics website: <http://www.renesas.com>

April 1st, 2010
Renesas Electronics Corporation

Issued by: Renesas Electronics Corporation (<http://www.renesas.com>)

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2SK2220, 2SK2221

Silicon N Channel MOS FET

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

Application

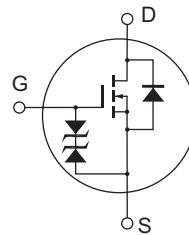
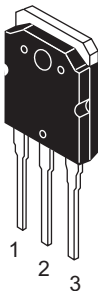
Low frequency power amplifier
Complementary pair with 2SJ351, 2SJ352

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	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

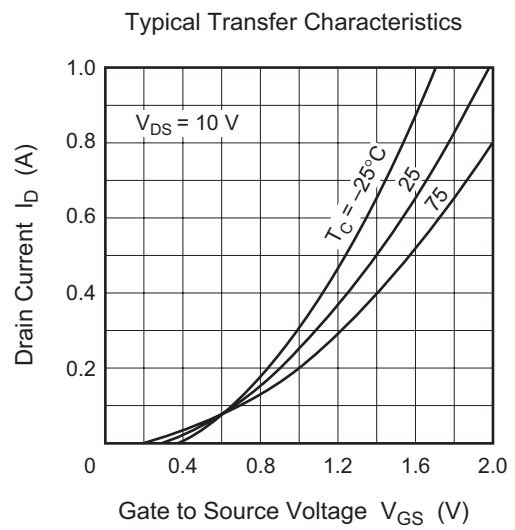
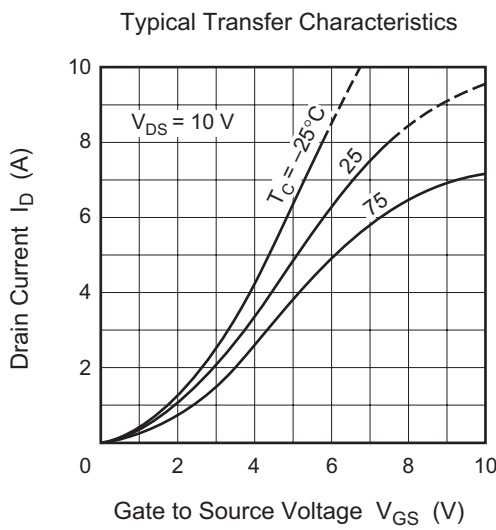
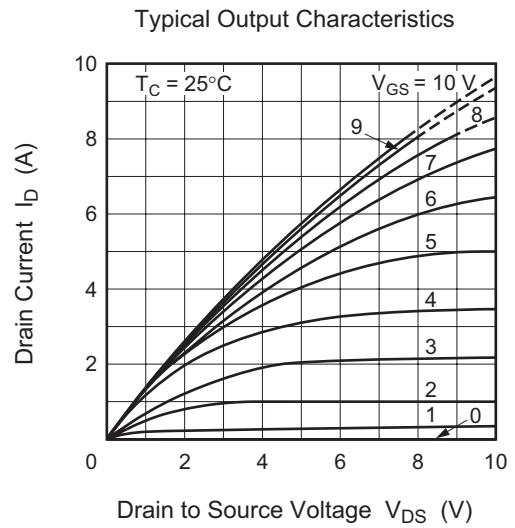
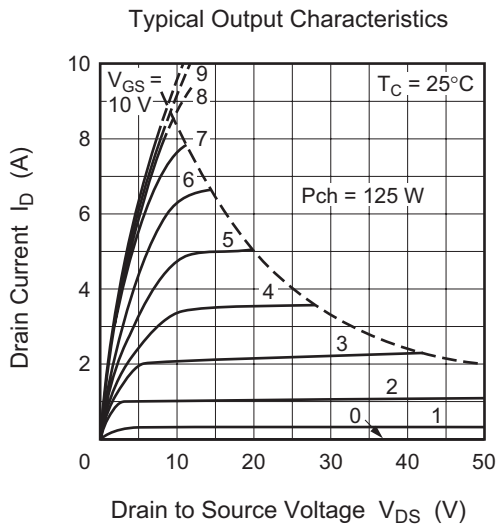
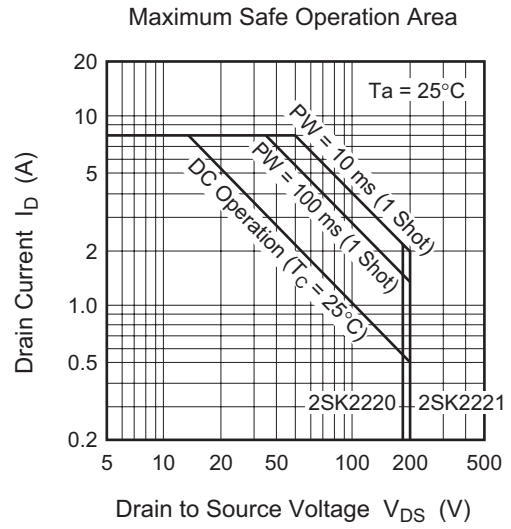
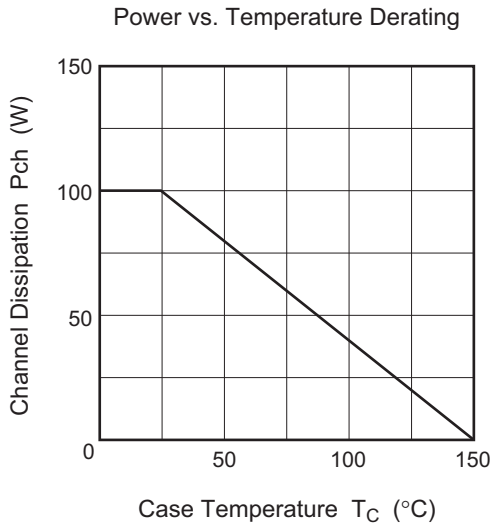
Electrical Characteristics

(Ta = 25°C)

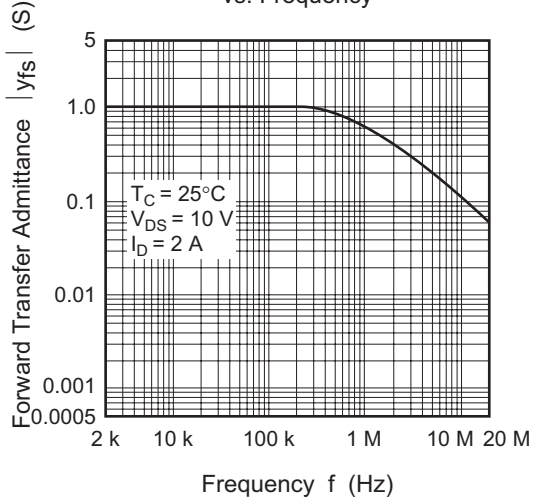
Item	Symbol	Min	Typ	Max	Unit	Test conditions
Drain to source breakdown voltage	2SK2220	180	—	—	V	I _D = 10 mA, V _{GS} = -10 V
	2SK2221	200	—	—		
Gate to source breakdown voltage	V _{(BR)GSS}	±20	—	—	V	I _G = ±100 μA, V _{DS} = 0
Gate to source cutoff voltage	V _{GS(off)}	0.15	—	1.45	V	I _D = 100 mA,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

Note: 2. Pulse Test

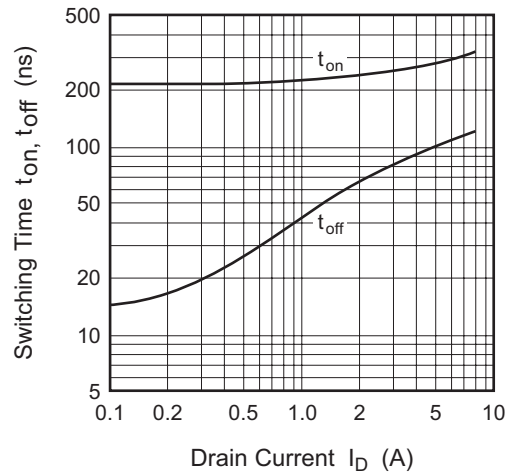
Main Characteristics



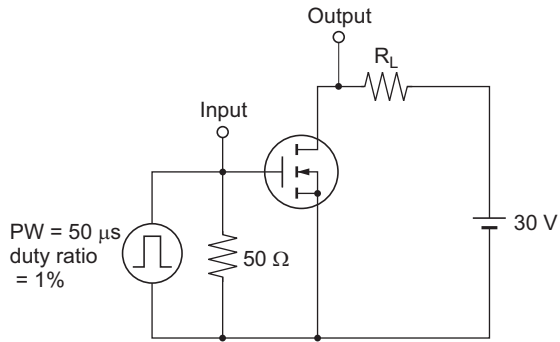
Forward Transfer Admittance vs. Frequency



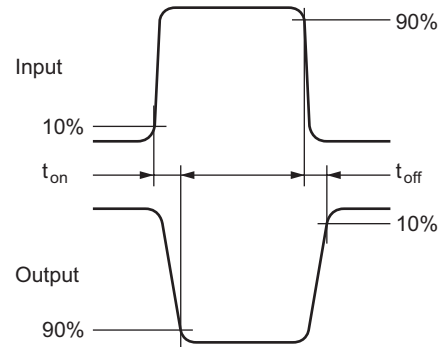
Switching Time vs. Drain Current



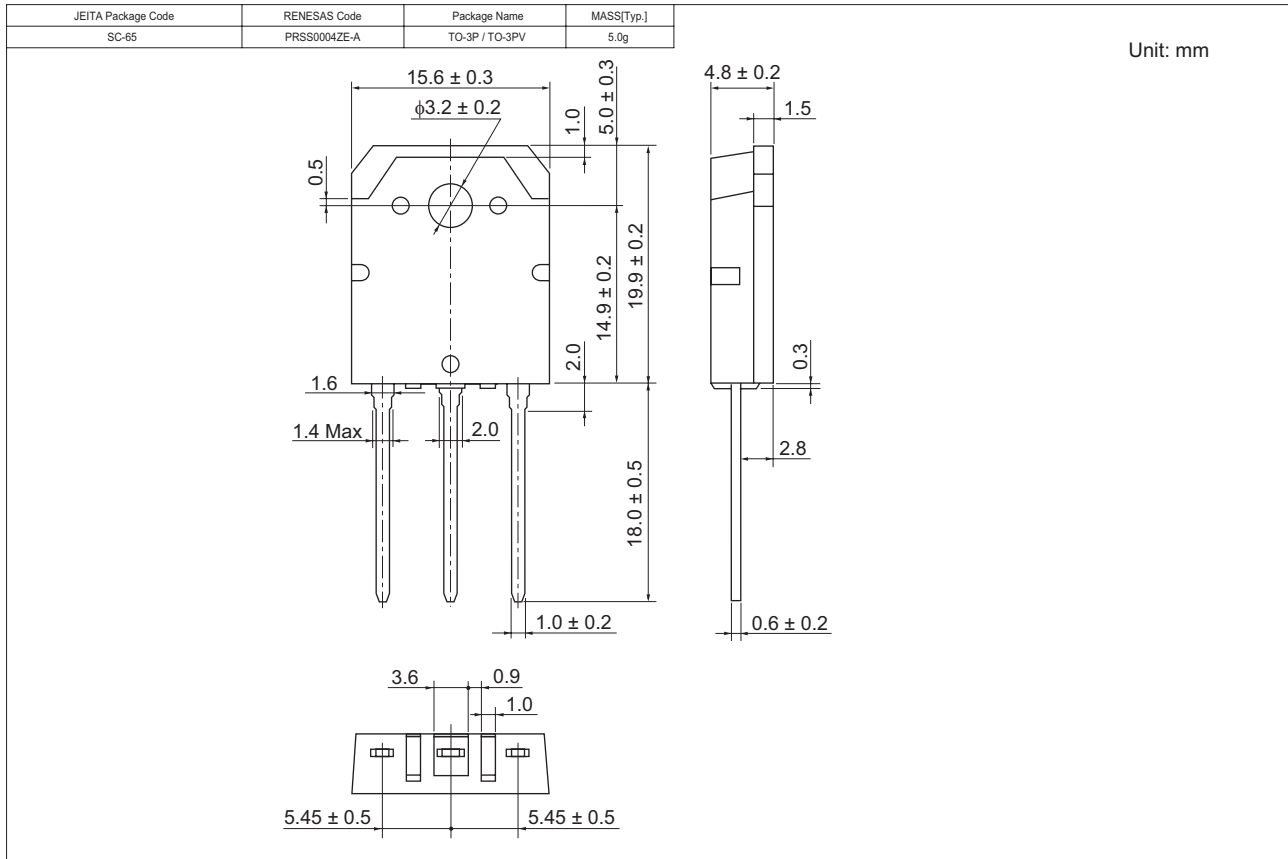
Switching Time Test Circuit



Waveforms



Package Dimensions



Ordering Information

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

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