

2SK2220, 2SK2221

Silicon N Channel MOS FET

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

Application

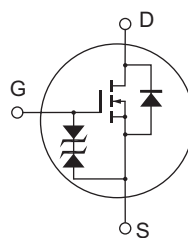
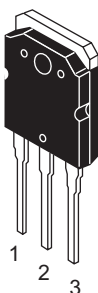
Low frequency power amplifier
Complementary pair with 2SJ351, 2SJ352

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	V_{DSX}	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 $T_c = 25^\circ\text{C}$

Electrical Characteristics

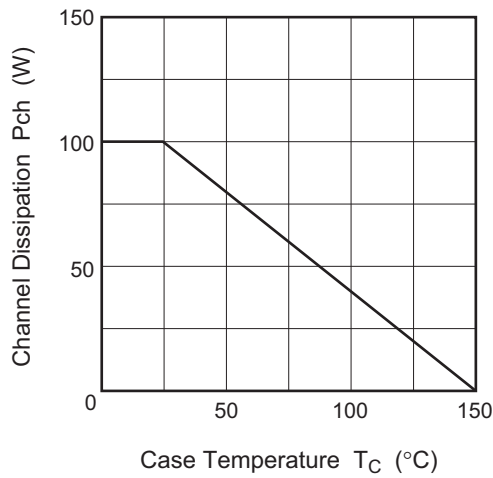
(Ta = 25°C)

Item		Symbol	Min	Typ	Max	Unit	Test conditions
Drain to source breakdown voltage	2SK2220	$V_{(BR)DSX}$	180	—	—	V	$I_D = 10\text{ mA}$, $V_{GS} = -10\text{ V}$
	2SK2221		200	—	—		
Gate to source breakdown voltage		$V_{(BR)GSS}$	±20	—	—	V	$I_G = \pm 100\text{ }\mu\text{A}$, $V_{DS} = 0$
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	

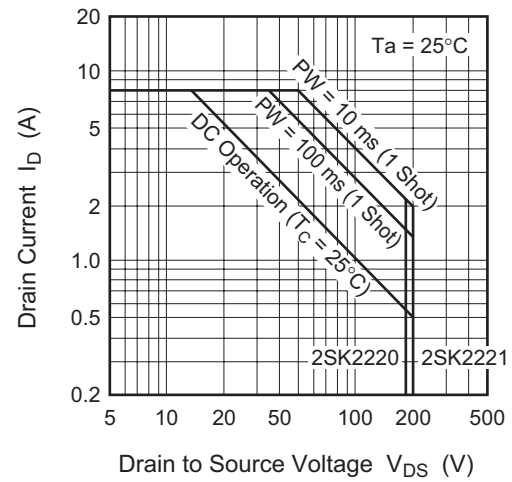
Note: 2. Pulse Test

Main Characteristics

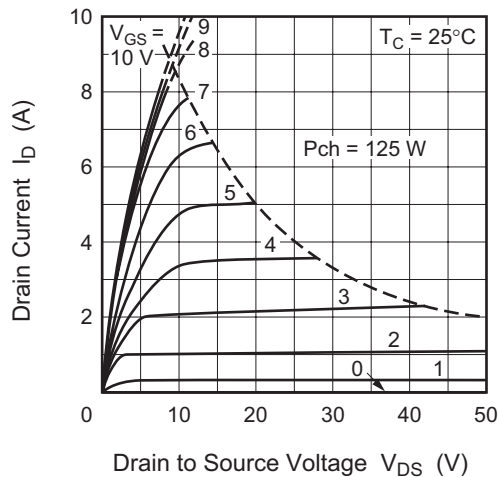
Power vs. Temperature Derating



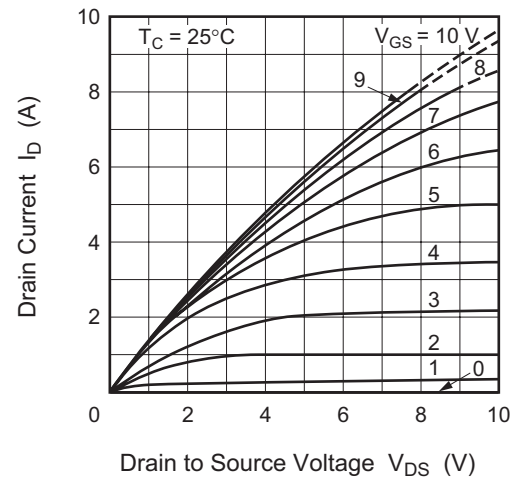
Maximum Safe Operation Area



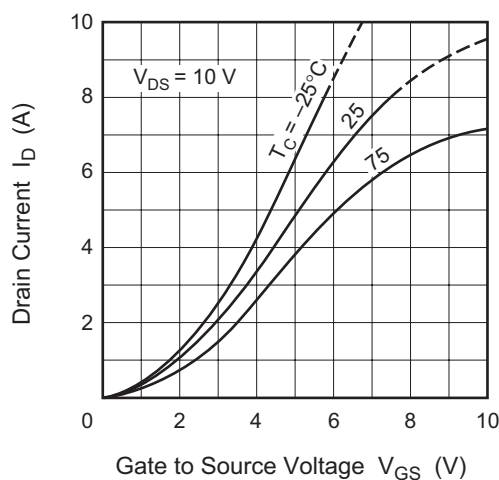
Typical Output Characteristics



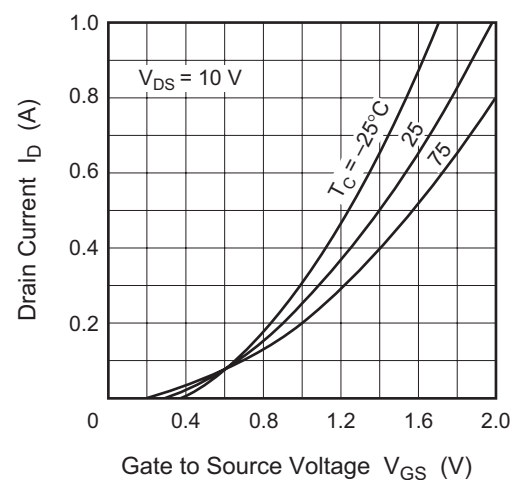
Typical Output Characteristics

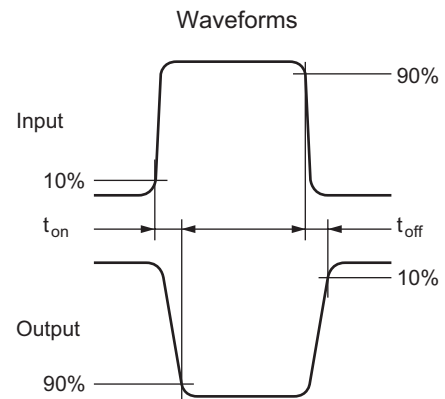
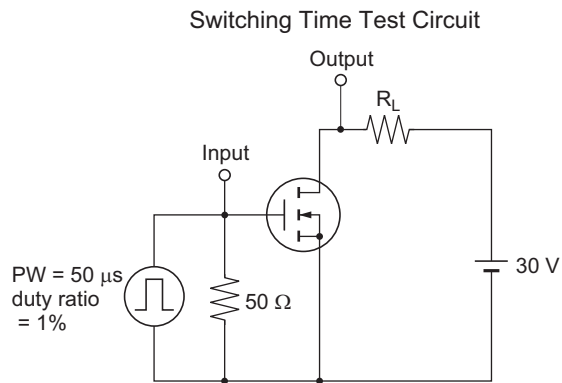
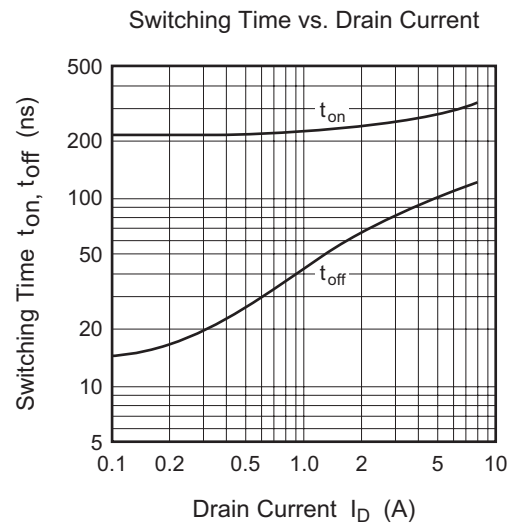
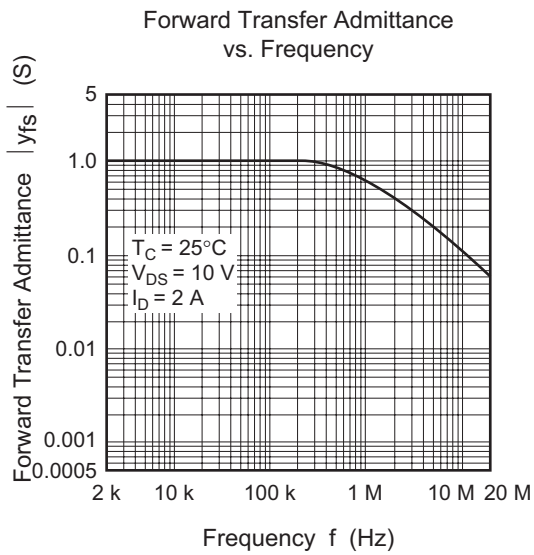


Typical Transfer Characteristics

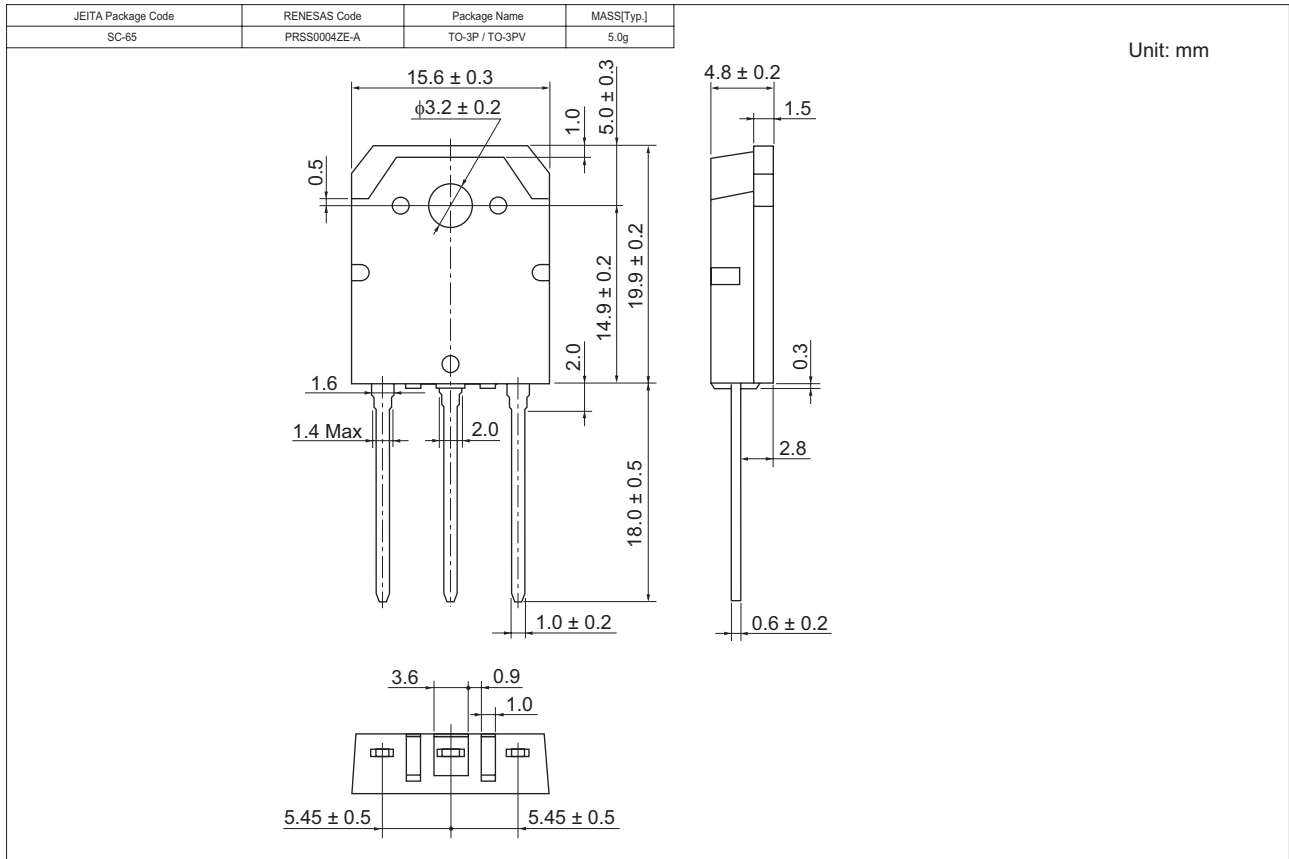


Typical Transfer Characteristics





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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