

To our customers,

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## Old Company Name in Catalogs and Other Documents

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

April 1<sup>st</sup>, 2010  
Renesas Electronics Corporation

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

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## 2SK1056, 2SK1057, 2SK1058

Silicon N Channel MOS FET

REJ03G0906-0200  
(Previous: ADE-208-1244)  
Rev.2.00  
Sep 07, 2005

### Application

Low frequency power amplifier

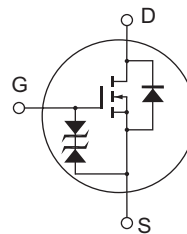
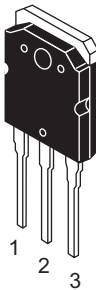
Complementary pair with 2SJ160, 2SJ161 and 2SJ162

### Features

- Good frequency characteristic
- High speed switching
- Wide area of safe operation
- Enhancement-mode
- Good complementary characteristics
- Equipped with gate protection diodes
- Suitable for audio power amplifier

### 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	$V_{DSX}$	2SK1056	120	V
		2SK1057	140	
		2SK1058	160	
Gate to source voltage	$V_{GSS}$	±15	V	
Drain current	$I_D$	7	A	
Body to drain diode reverse drain current	$I_{DR}$	7	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  $T_C = 25^\circ\text{C}$ 

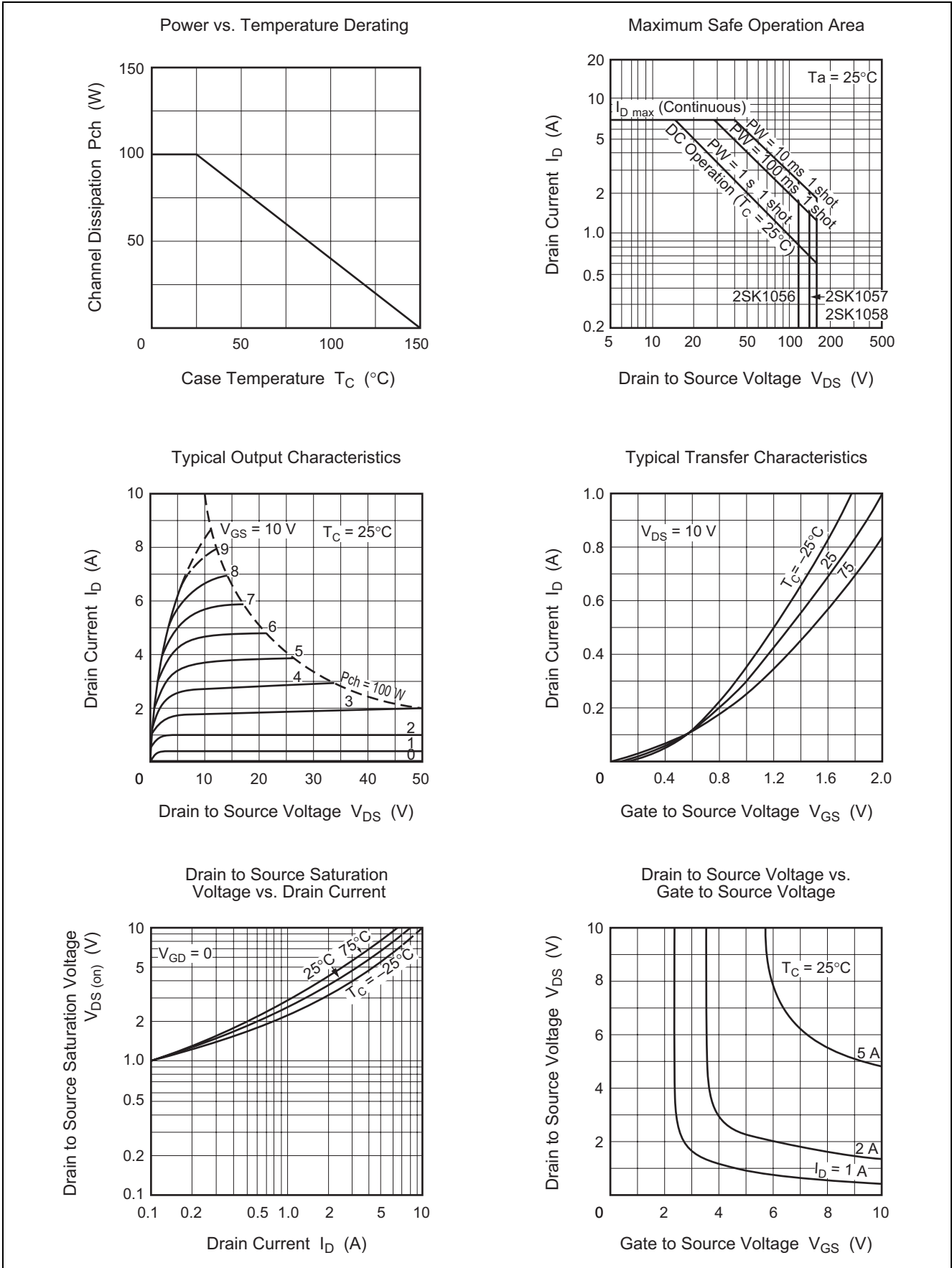
## Electrical Characteristics

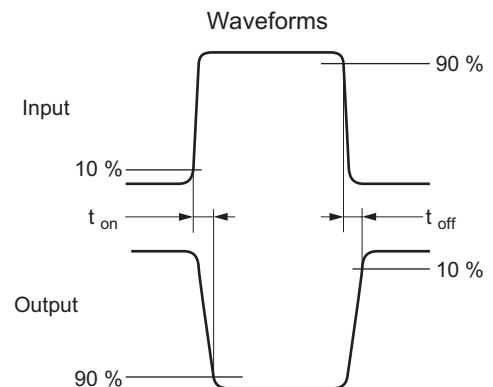
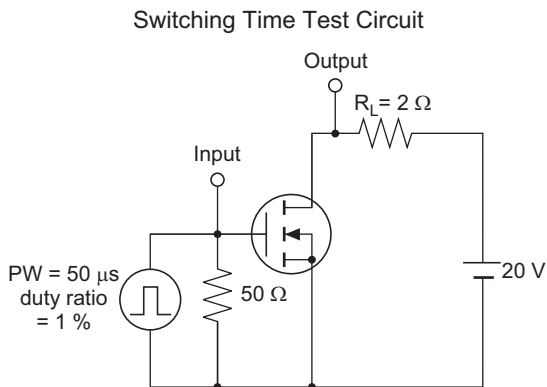
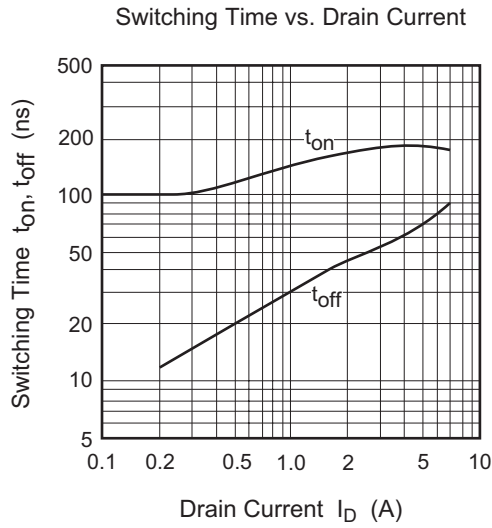
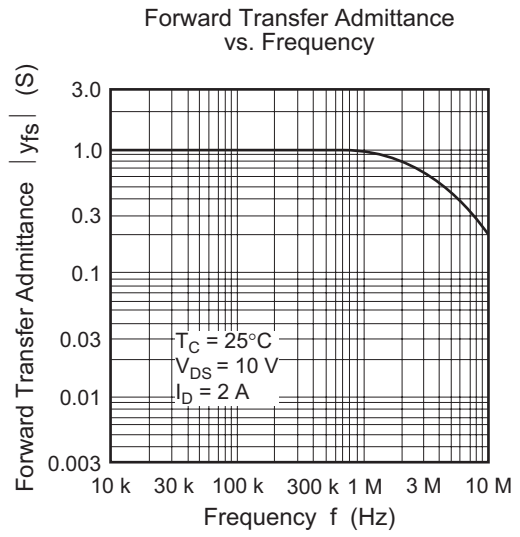
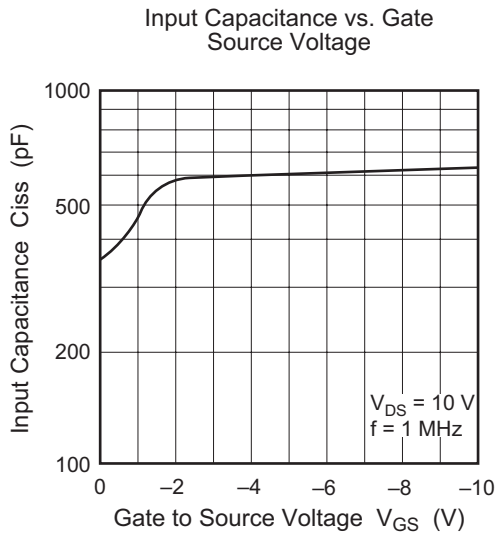
(Ta = 25°C)

Item	Symbol	Min	Typ	Max	Unit	Test conditions	
Drain to source breakdown voltage	$V_{(BR)DSX}$	2SK1056	120	—	—	V	$I_D = 10 \text{ mA}, V_{GS} = -10 \text{ V}$
		2SK1057	140				
		2SK1058	160				
Gate to source breakdown voltage	$V_{(BR)GSS}$	±15	—	—	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	$I_D = 7 \text{ A}, V_{GD} = 0^{*2}$	
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	$C_{oss}$	—	350	—	pF		
Reverse transfer capacitance	$C_{rss}$	—	10	—	pF		
Turn-on time	$t_{on}$	—	180	—	ns	$V_{DD} = 20 \text{ V}, I_D = 4 \text{ A}$	
Turn-off time	$t_{off}$	—	60	—	ns		

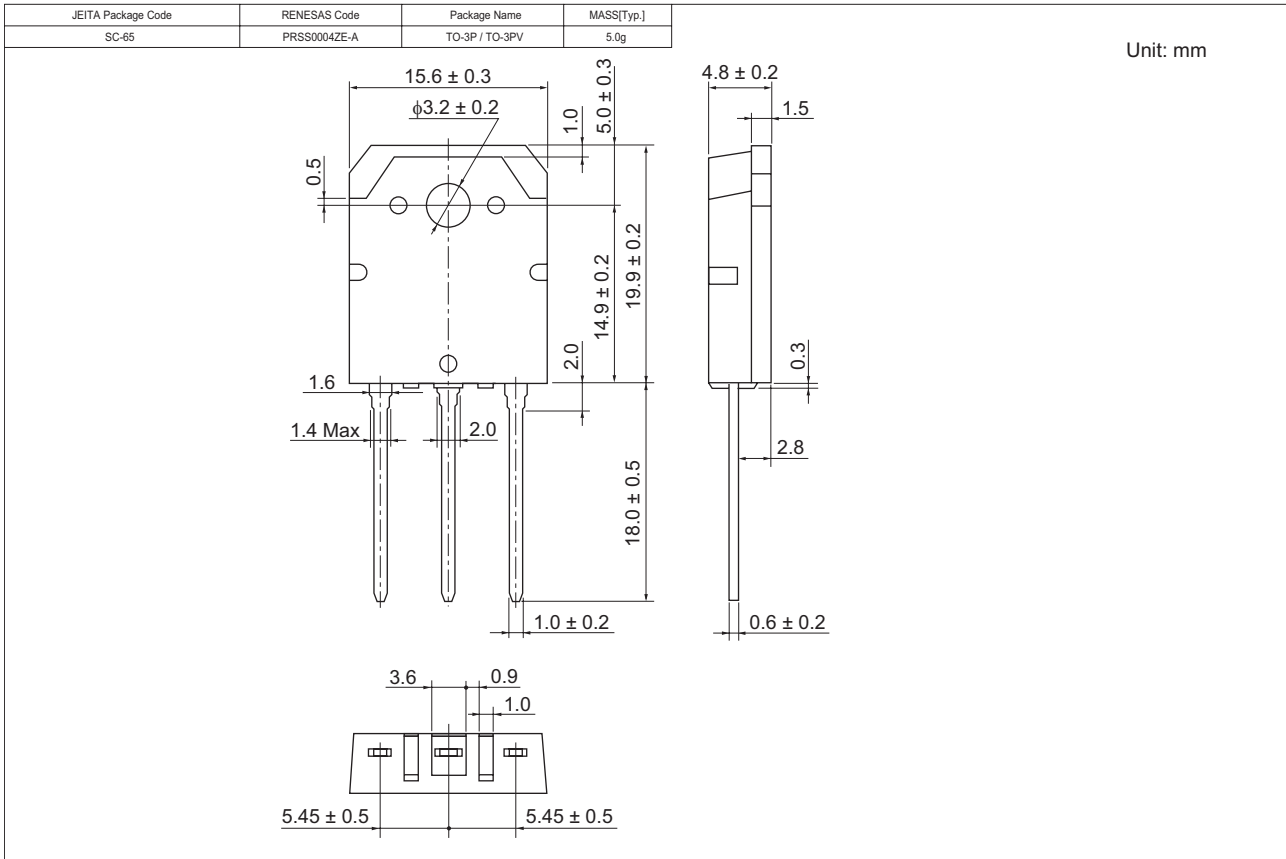
Note: 2. Pulse test

Main Characteristics





### Package Dimensions



### Ordering Information

Part Name	Quantity	Shipping Container
2SK1056-E	360 pcs	Box (Tube)
2SK1057-E	360 pcs	Box (Tube)
2SK1058-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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