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2SJ160, 2SJ161, 2SJ162

Silicon P Channel MOS FET

REJ03G0847-0200
(Previous: ADE-208-1182)
Rev.2.00
Sep 07, 2005

Description

Low frequency power amplifier

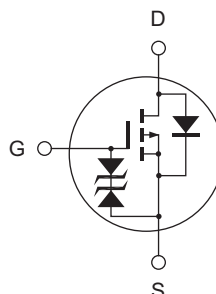
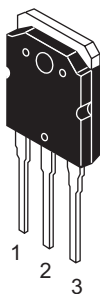
Complementary pair with 2SK1056, 2SK1057 and 2SK1058

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	Value	Unit
Drain to source voltage	2SJ160	-120	V
	2SJ161	-140	
	2SJ162	-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} ^{Note 1}	100	W
Channel temperature	T _{ch}	150	°C
Storage temperature	T _{stg}	-55 to +150	°C

Note: 1. Value at Tc = 25°C

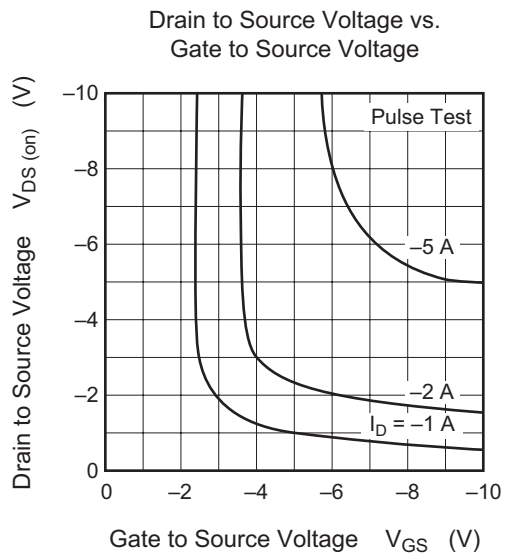
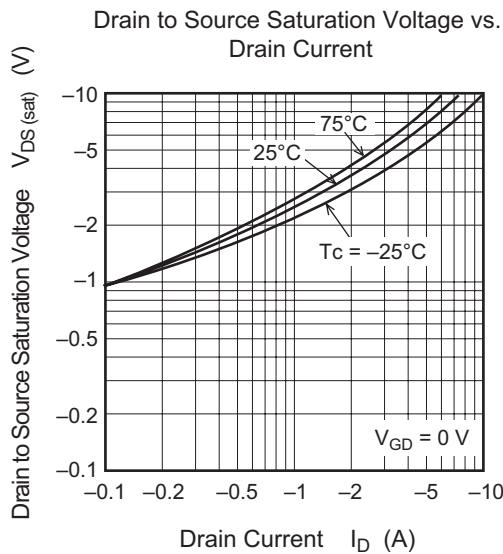
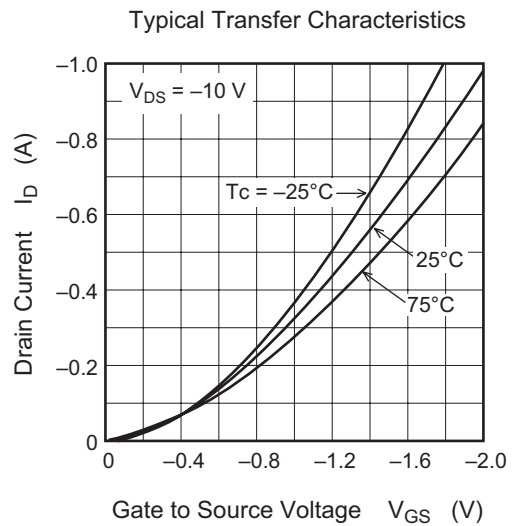
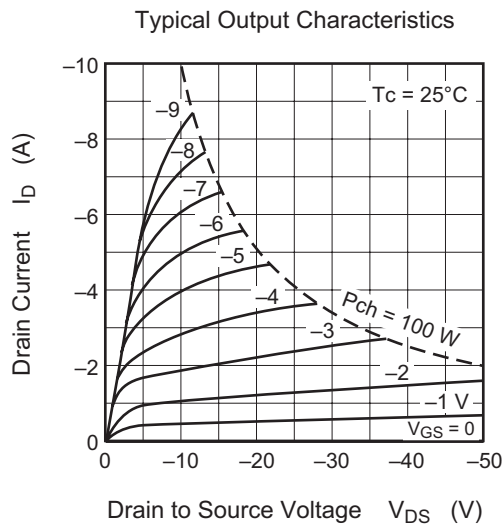
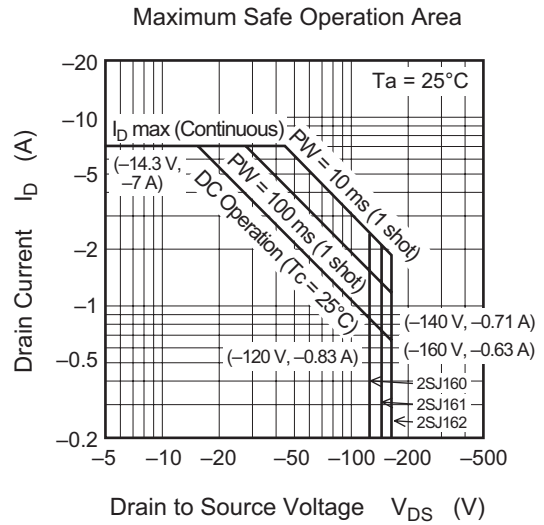
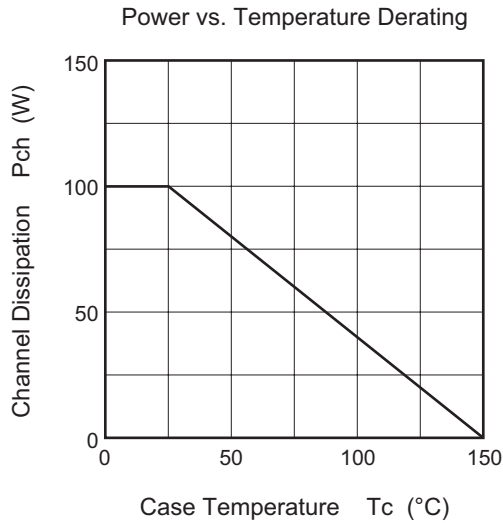
Electrical Characteristics

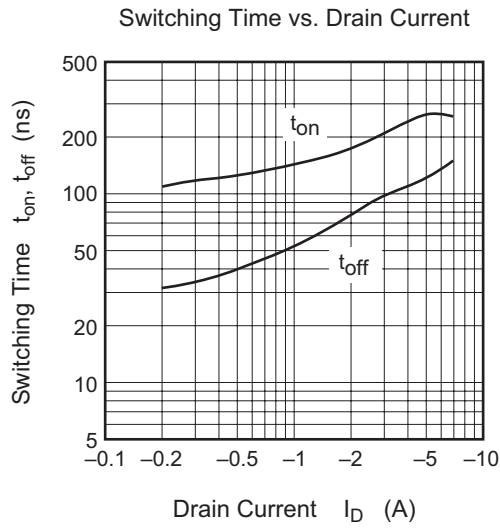
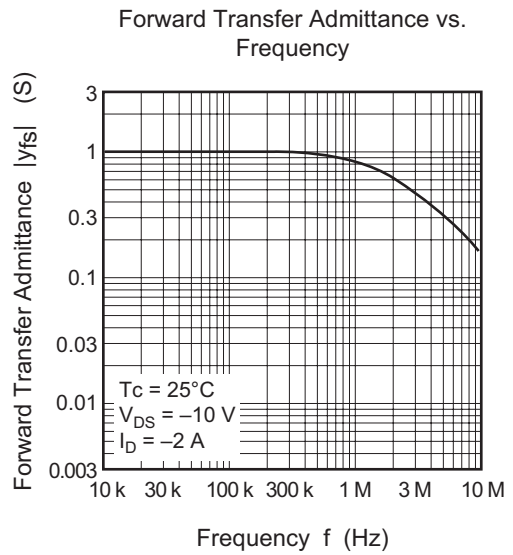
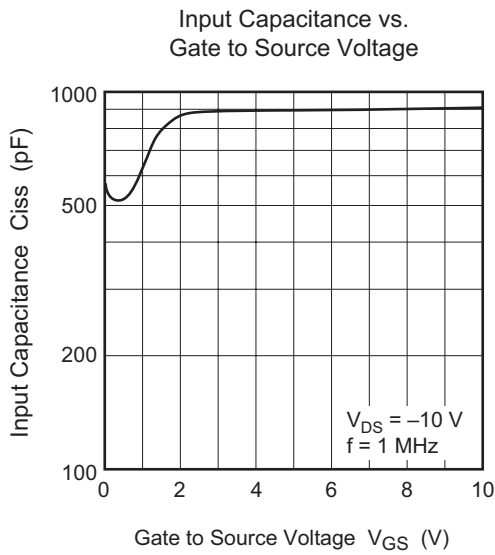
(Ta = 25°C)

Item	Symbol	Min	Typ	Max	Unit	Test Conditions	
Drain to source breakdown voltage	2SJ160	V _{(BR)DSX}	-120	—	—	V	I _D = -10 mA, V _{GS} = 10 V
	2SJ161		-140	—	—	V	
	2SJ162		-160	—	—	V	
Gate to source breakdown voltage	V _{(BR)GSS}	±15	—	—	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 = -7 A, V _{GS} = 0 ^{Note 2}	
Forward transfer admittance	y _{fs}	0.7	1.0	1.4	S	I _D = -3 A, V _{DS} = -10 V ^{Note 2}	
Input capacitance	C _{iss}	—	900	—	pF	V _{GS} = 5 V, V _{DS} = -10 V, f = 1 MHz	
Output capacitance	C _{oss}	—	400	—	pF		
Reverse transfer capacitance	C _{rss}	—	40	—	pF		
Turn-on time	t _{on}	—	230	—	ns	V _{DD} = -20 V I _D = -4 A	
Turn-off time	t _{off}	—	110	—	ns		

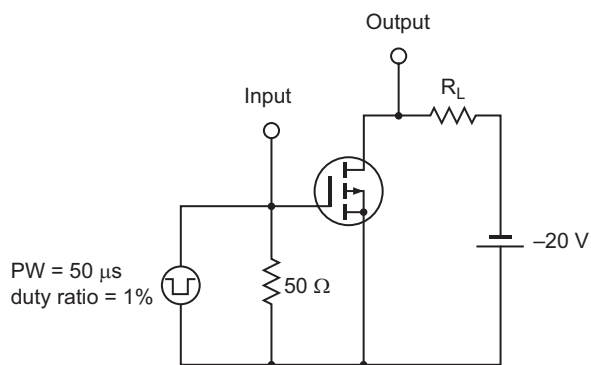
Note: 2. Pulse test

Main Characteristics

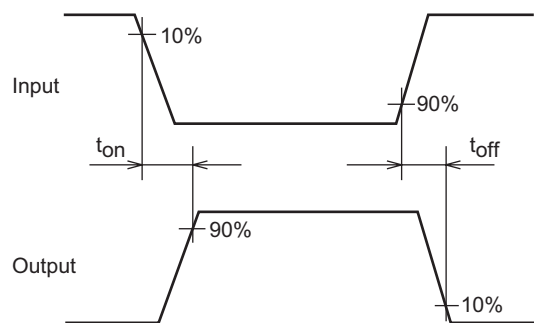




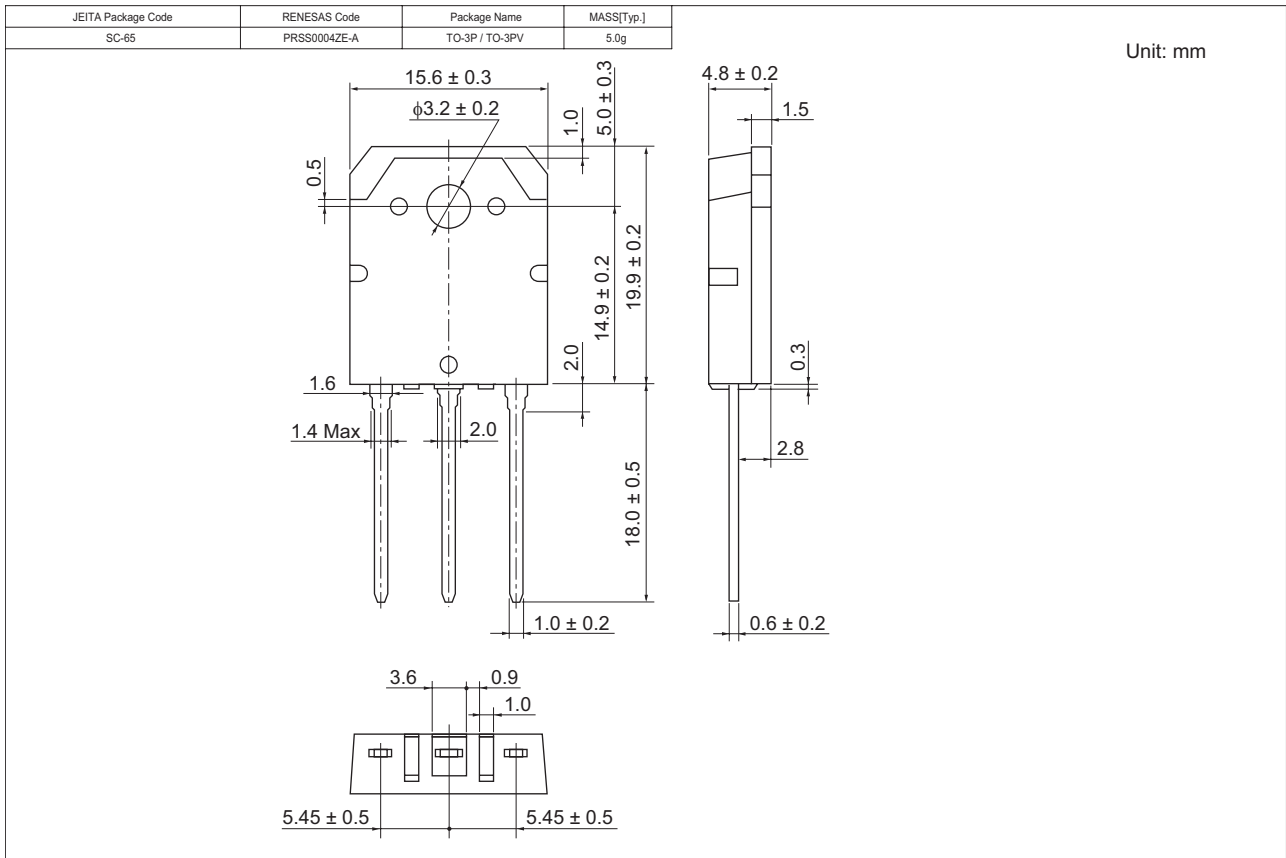
Switching Time Test Circuit



Waveform



Package Dimensions



Ordering Information

Part Name	Quantity	Shipping Container
2SJ160-E	360 pcs	Box (Tube)
2SJ161-E	360 pcs	Box (Tube)
2SJ162-E	360 pcs	Box (Tube)

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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

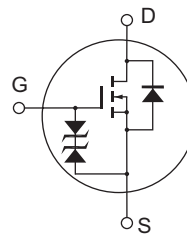
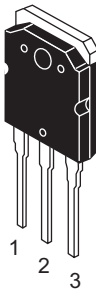
Complementary pair with 2SJ160, 2SJ161 and 2SJ162

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 $T_C = 25^\circ\text{C}$

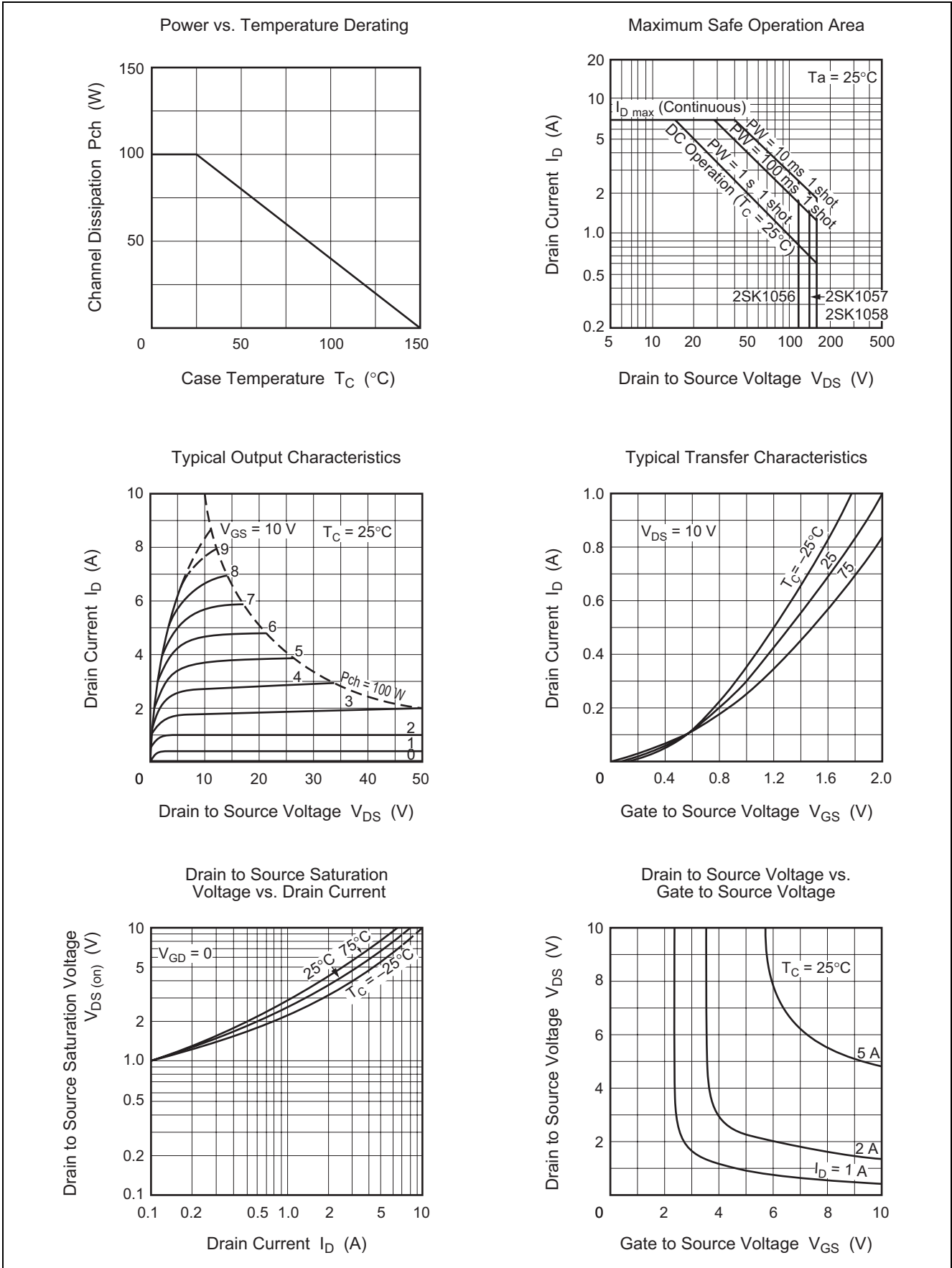
Electrical Characteristics

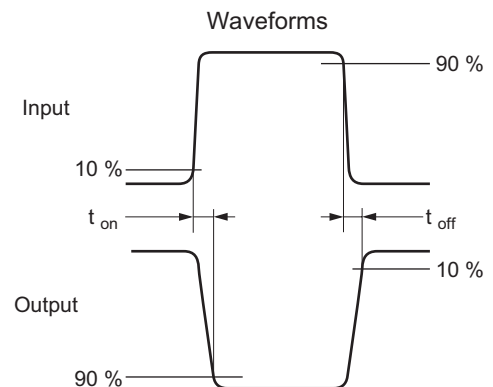
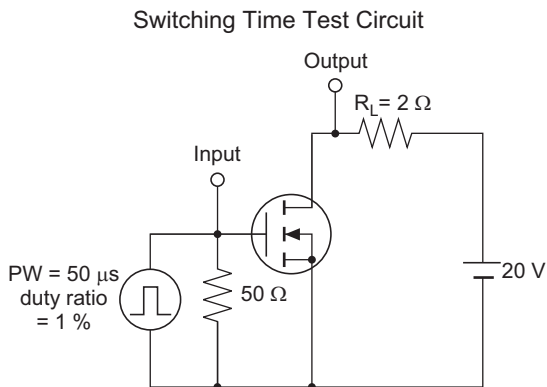
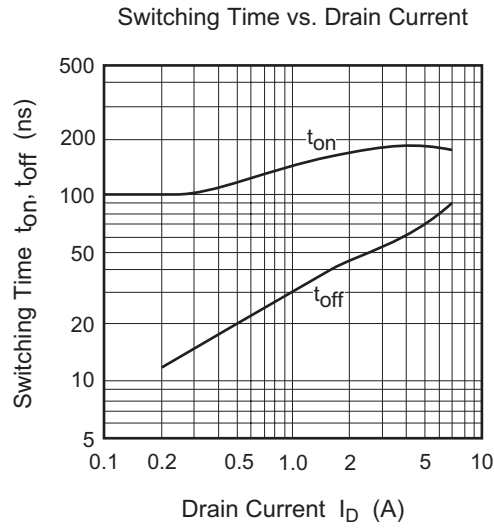
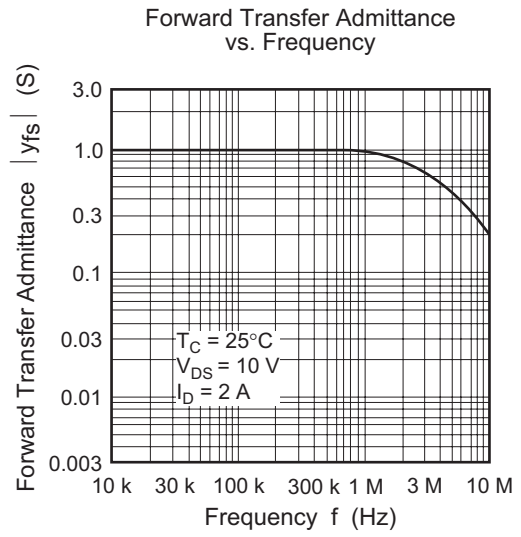
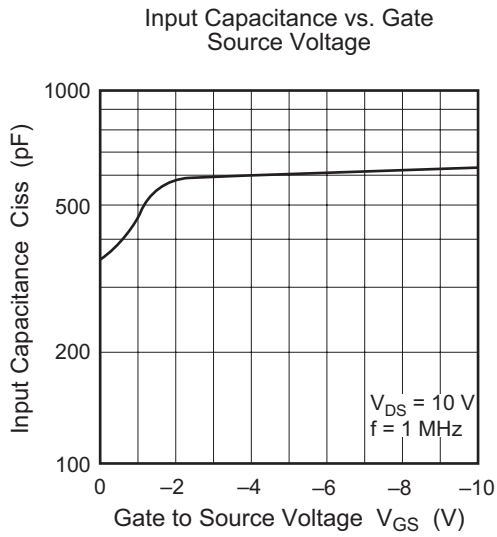
(Ta = 25°C)

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		

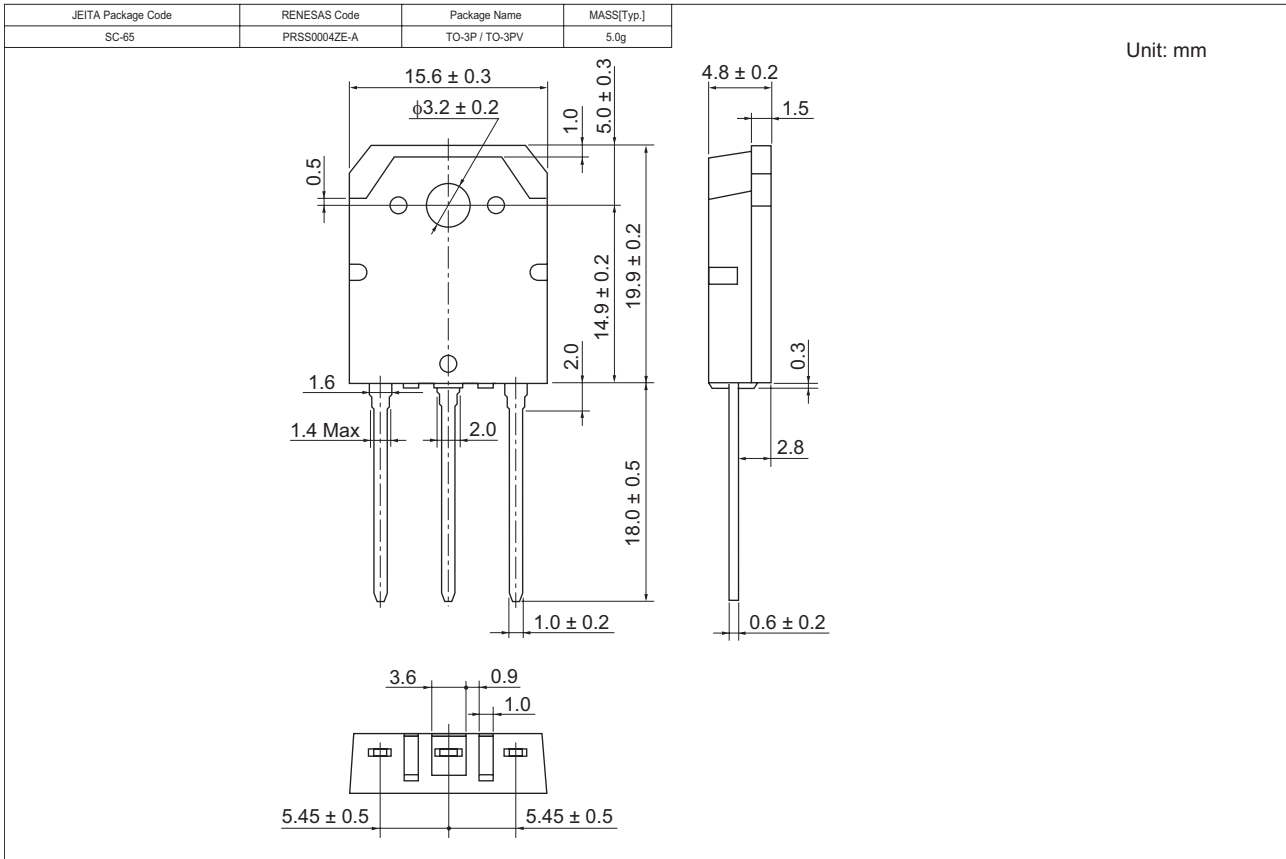
Note: 2. Pulse test

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)

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