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Renesas Technology Corp.
Customer Support Dept.
April 1, 2003

Cautions

Keep safety first in your circuit designs!

1. Renesas Technology Corporation puts the maximum effort into making semiconductor products better and more reliable, but there is always the possibility that trouble may occur with them. Trouble with semiconductors may lead to personal injury, fire or property damage.

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2SJ160, 2SJ161, 2SJ162

Silicon P-Channel MOS FET



ADE-208-1182 (Z)
1st. Edition
Mar. 2001

Application

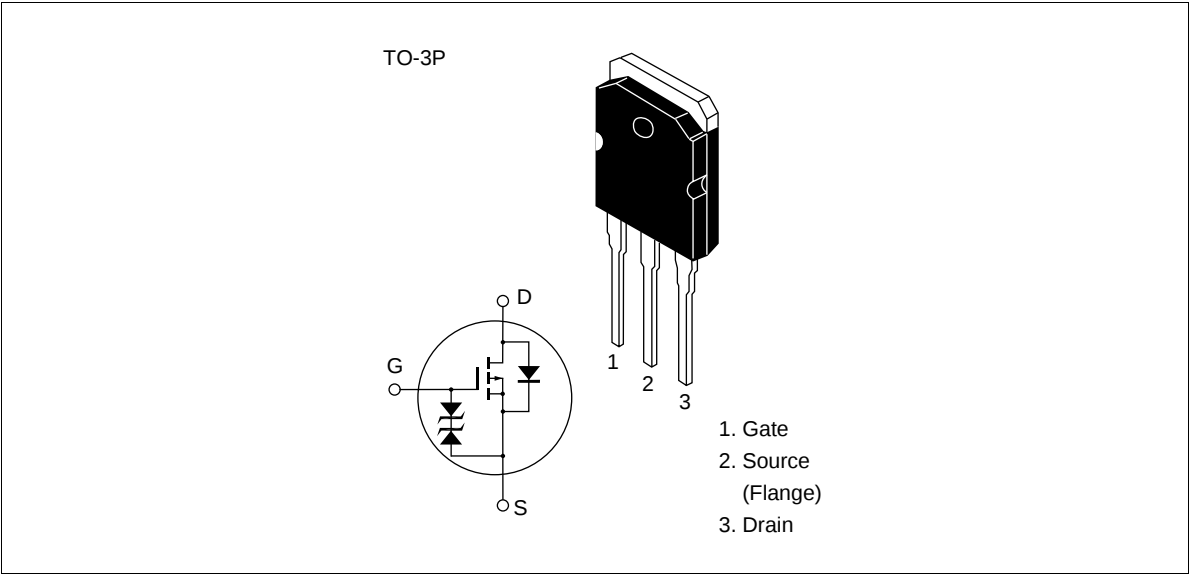
Low frequency power amplifier

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



Absolute Maximum Ratings (Ta = 25°C)

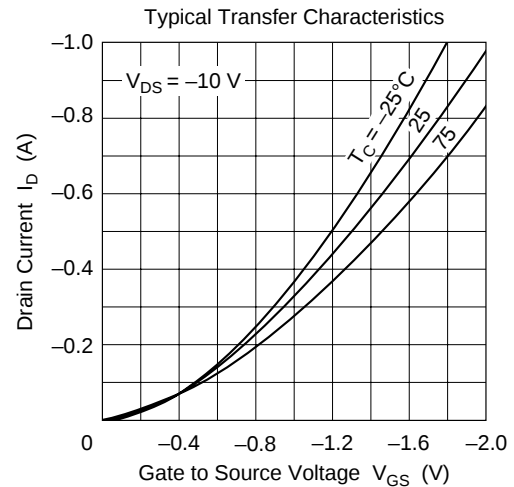
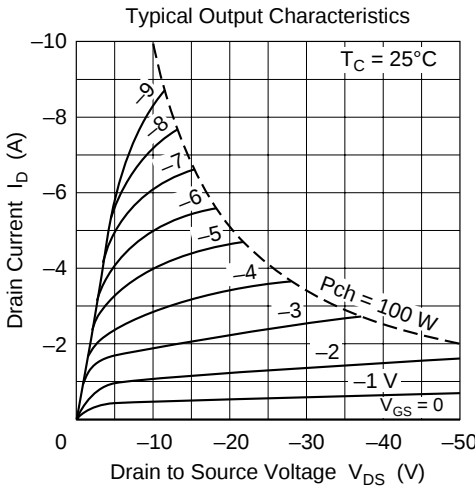
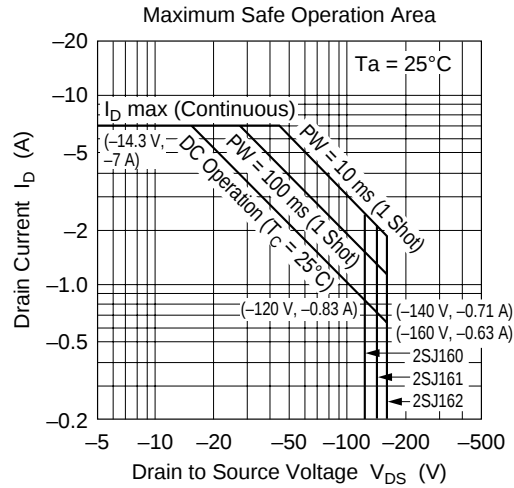
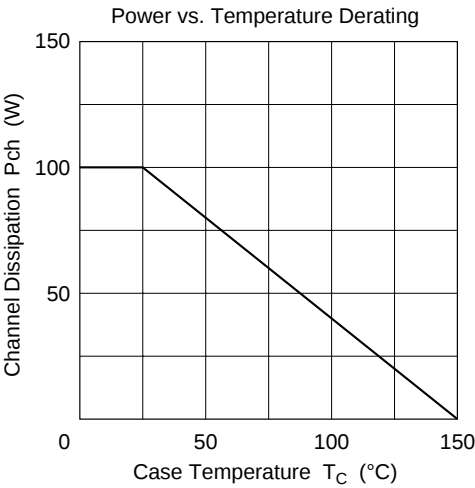
Item		Symbol	Ratings	Unit
Drain to source voltage	2SJ160	V_{DSX}	-120	V
	2SJ161		-140	
	2SJ162		-160	
Gate to source voltage		V_{GSS}	±15	V
Drain current		I_D	-7	A
Body to drain diode reverse drain current		I_{DR}	-7	A
Channel dissipation		Pch^{*1}	100	W
Channel temperature		Tch	150	°C
Storage temperature		Tstg	-55 to +150	°C

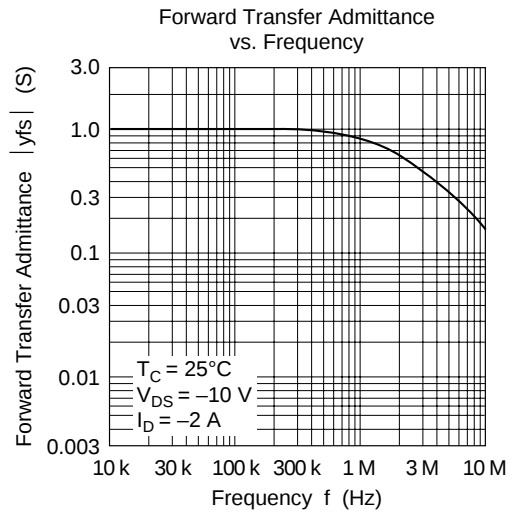
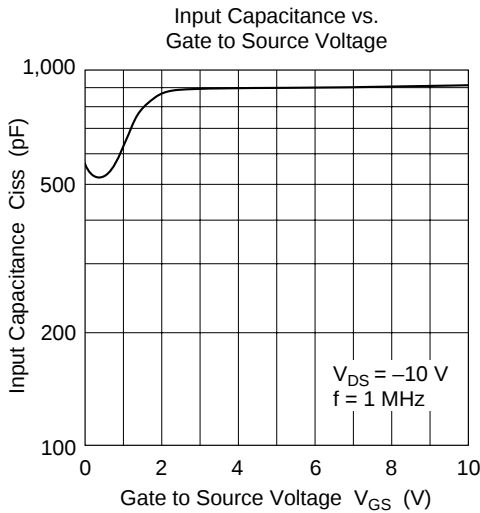
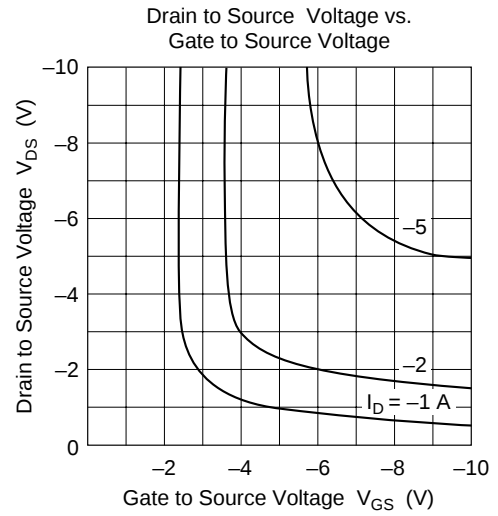
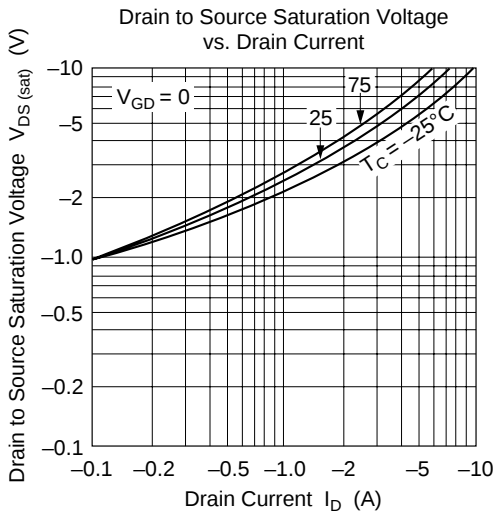
Note: 1. Value at T_c = 25°C

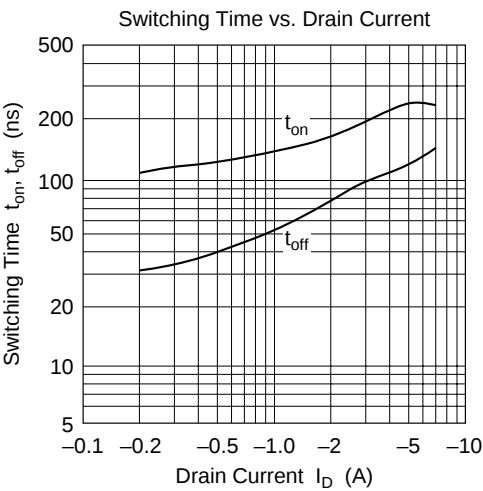
Electrical Characteristics (Ta = 25°C)

Item		Symbol	Min	Typ	Max	Unit	Test conditions
Drain to source breakdown voltage	2SJ160	$V_{(BR)DSX}$	-120	—	—	V	$I_D = -10 \text{ mA}$, $V_{GS} = 10 \text{ V}$
	2SJ161		-140	—	—	V	
	2SJ162		-160	—	—	V	
Gate to source breakdown voltage		$V_{(BR)GSS}$	±15	—	—	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	$I_D = -7 \text{ A}$, $V_{GD} = 0^{*1}$
Forward transfer admittance		$ y_{fs} $	0.7	1.0	1.4	S	$I_D = -3 \text{ A}$, $V_{DS} = -10 \text{ V}^{*1}$
Input capacitance		Ciss	—	900	—	pF	$V_{GS} = 5 \text{ V}$, $V_{DS} = -10 \text{ V}$, $f = 1 \text{ MHz}$
Output capacitance		Coss	—	400	—	pF	
Reverse transfer capacitance		Crss	—	40	—	pF	
Turn-on time		t_{on}	—	230	—	ns	$V_{DD} = -20 \text{ V}$, $I_D = -4 \text{ A}$
Turn-off time		t_{off}	—	110	—	ns	

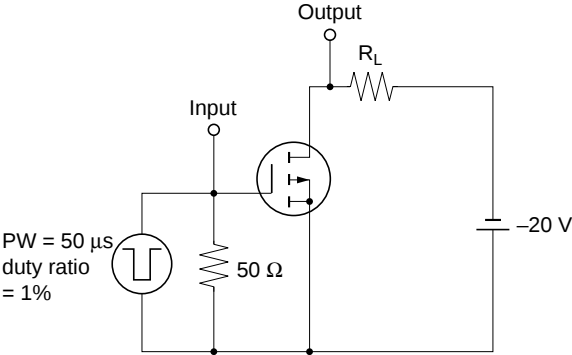
Note: 1. Pulse test



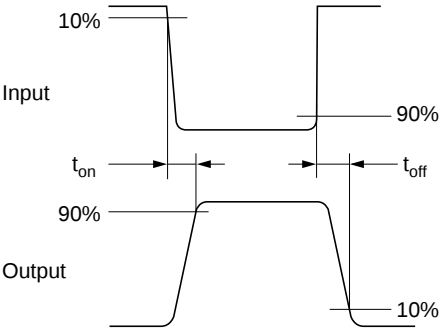




Switching Time Test Circuit

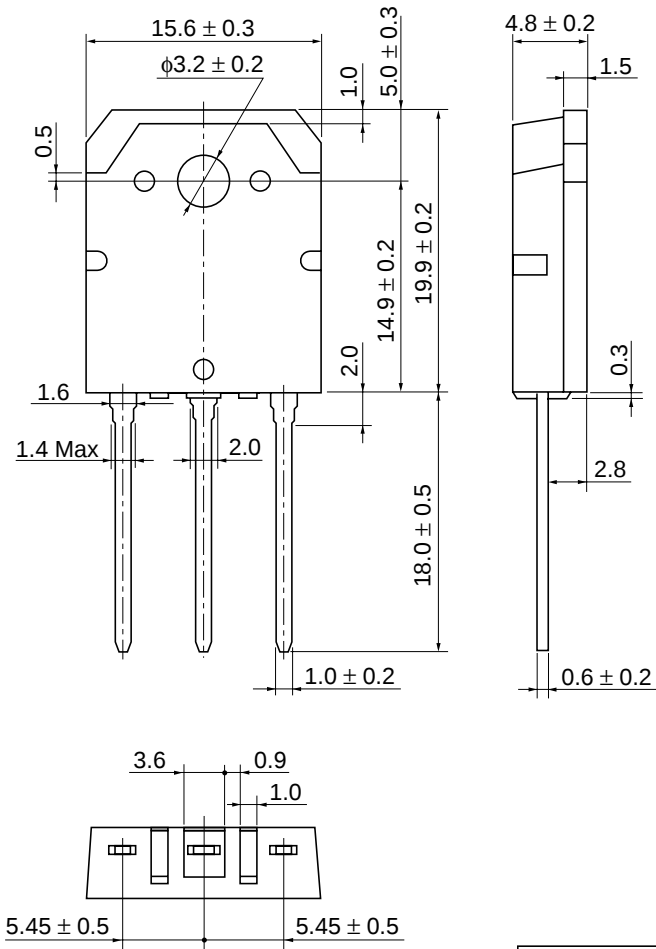


Waveforms



Package Dimensions

As of January, 2001
Unit: mm



Hitachi Code	TO-3P
JEDEC	—
EIAJ	Conforms
Mass (reference value)	5.0 g

Cautions

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