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# 2SJ160, 2SJ161, 2SJ162

Silicon P-Channel MOS FET

# HITACHI

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

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## Application

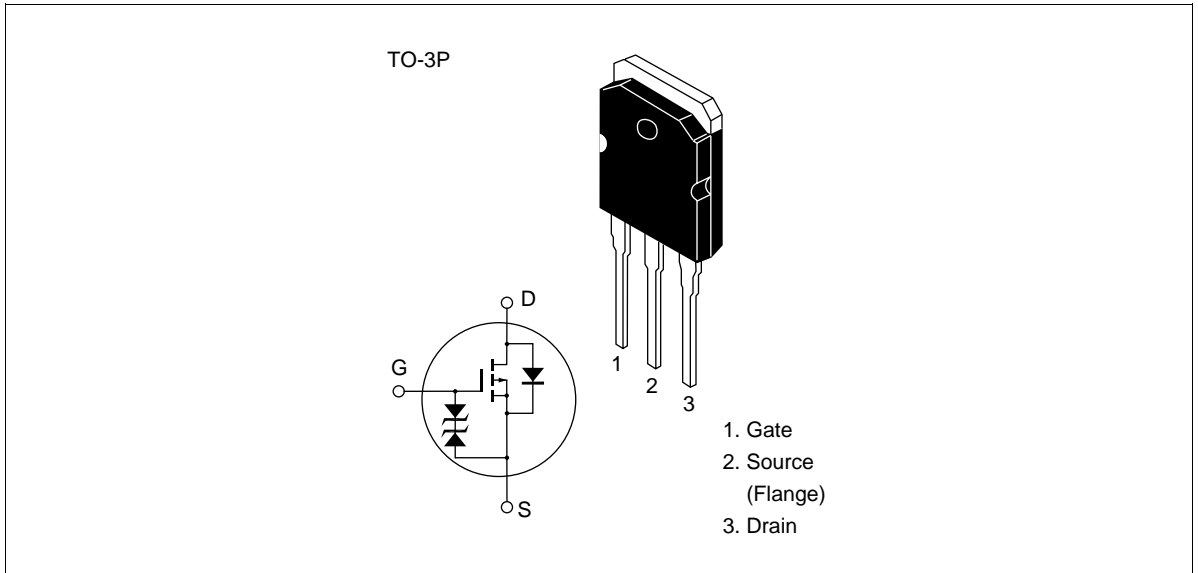
Low frequency power amplifier

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 ( $T_a = 25^\circ\text{C}$ )

Item		Symbol	Ratings	Unit
Drain to source voltage	2SJ160	$V_{DSX}$	-120	V
	2SJ161		-140	
	2SJ162		-160	
Gate to source voltage		$V_{GSS}$	$\pm 15$	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	$^\circ\text{C}$
Storage temperature		$T_{stg}$	-55 to +150	$^\circ\text{C}$

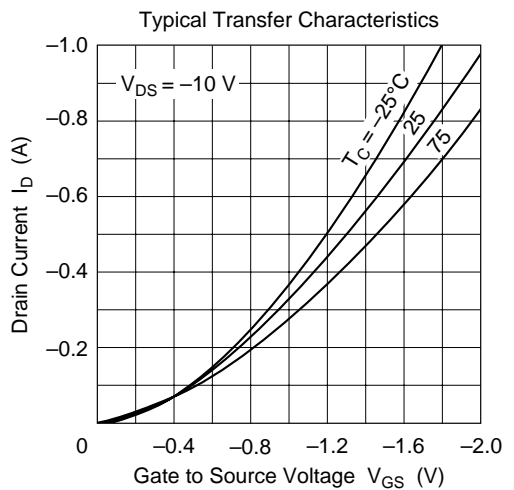
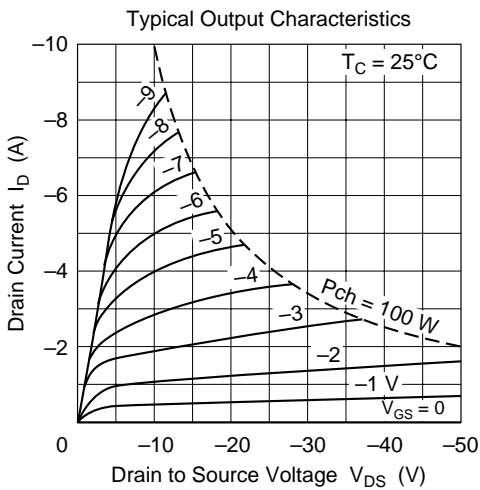
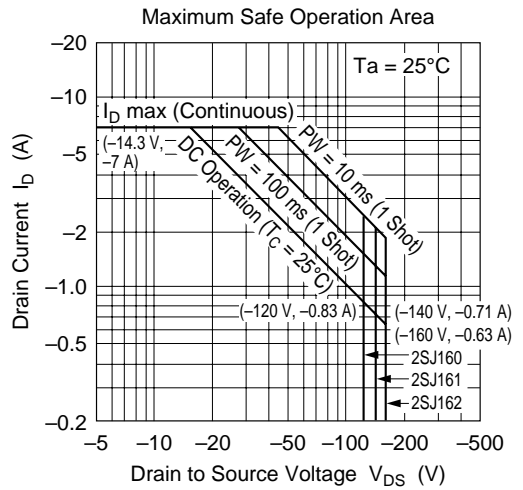
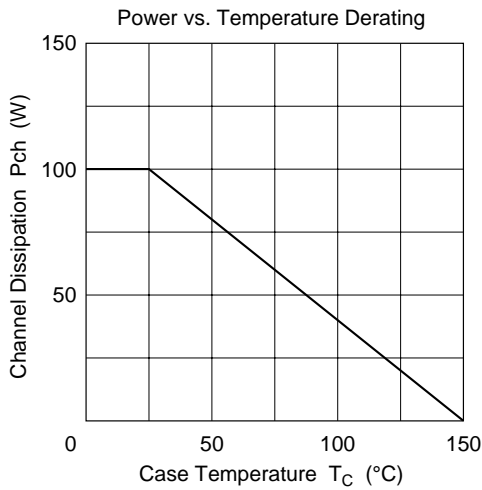
Note: 1. Value at  $T_c = 25^\circ\text{C}$

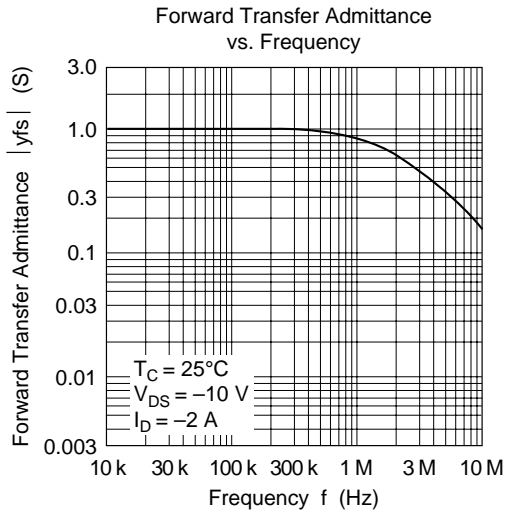
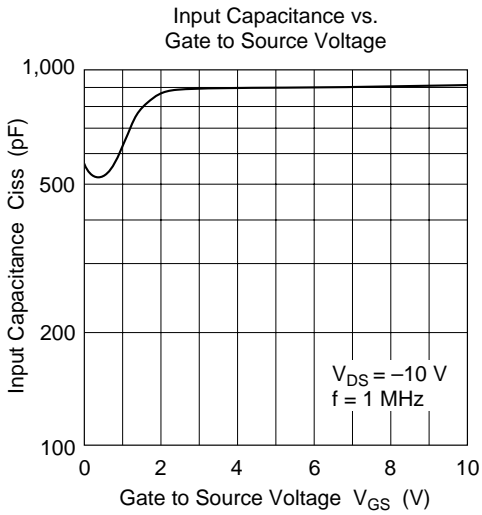
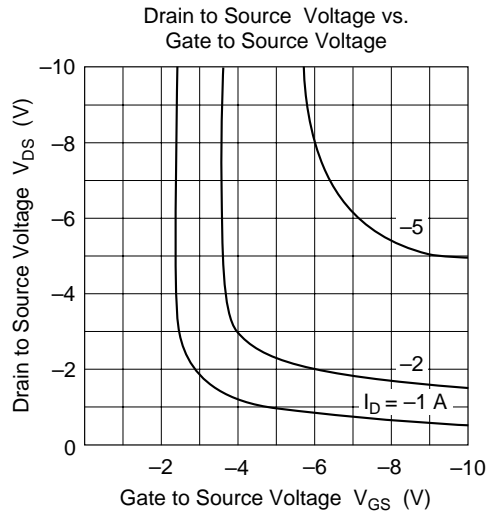
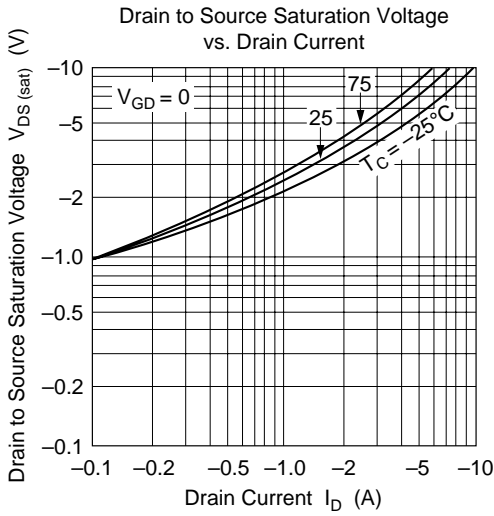
**Electrical Characteristics** (Ta = 25°C)

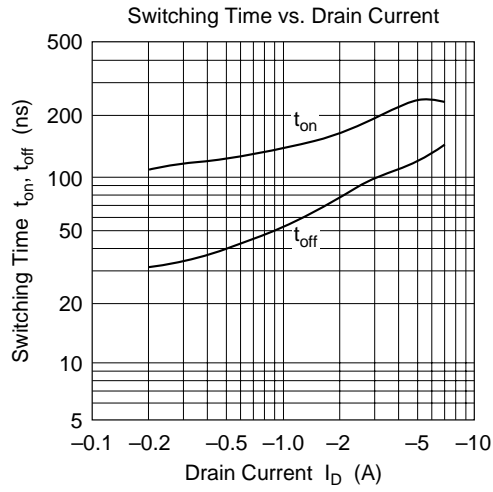
Item		Symbol	Min	Typ	Max	Unit	Test conditions
Drain to source breakdown voltage	2SJ160	$V_{(BR)DSX}$	-120	—	—	V	$I_D = -10 \text{ mA}$ , $V_{GS} = 10 \text{ V}$
	2SJ161		-140	—	—	V	
	2SJ162		-160	—	—	V	
Gate to source breakdown voltage		$V_{(BR)GSS}$	±15	—	—	V	$I_G = \pm 100 \mu\text{A}$ , $V_{DS} = 0$
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	$V_{GS} = 5 \text{ V}$ , $V_{DS} = -10 \text{ V}$ ,
Output capacitance		Coss	—	400	—	pF	$f = 1 \text{ MHz}$
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

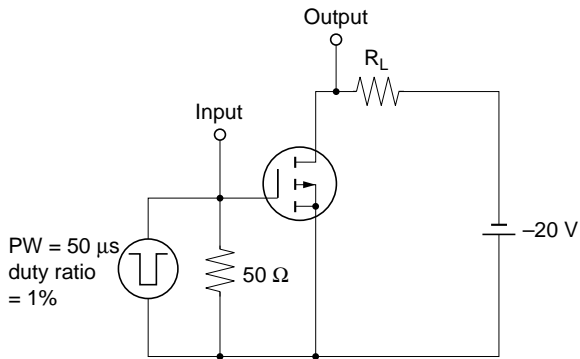
# 2SJ160, 2SJ161, 2SJ162



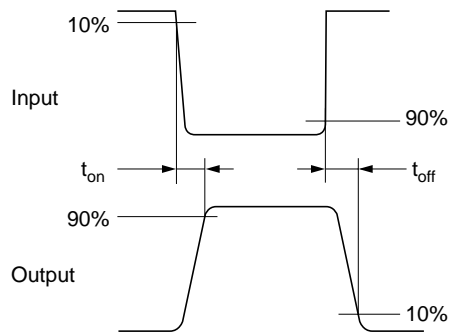




Switching Time Test Circuit



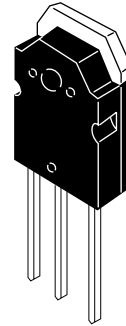
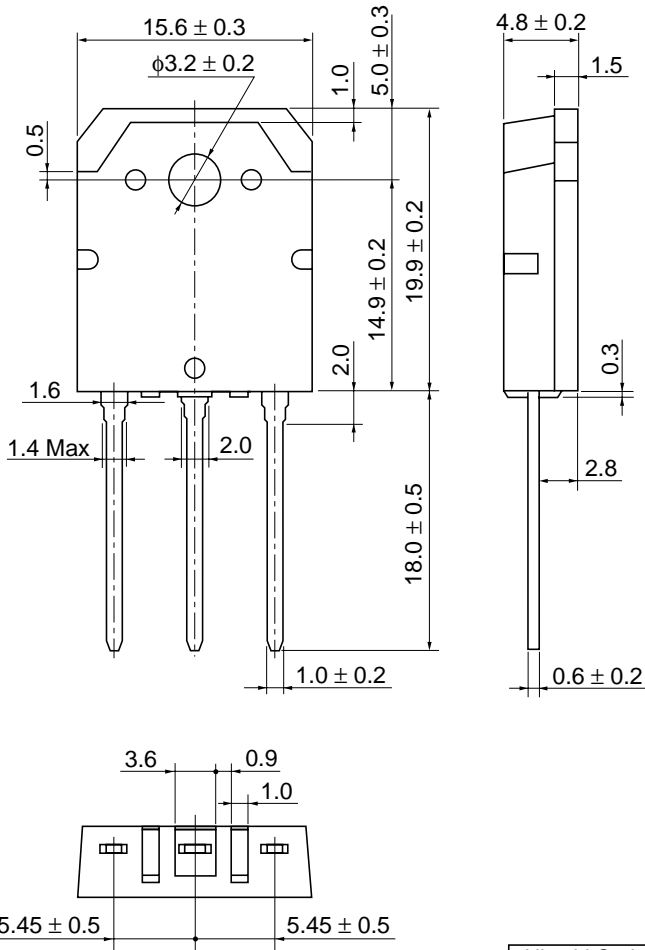
Waveforms



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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