
2SJ160, 2SJ161, 2SJ162

Silicon P-Channel MOS FET

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Application

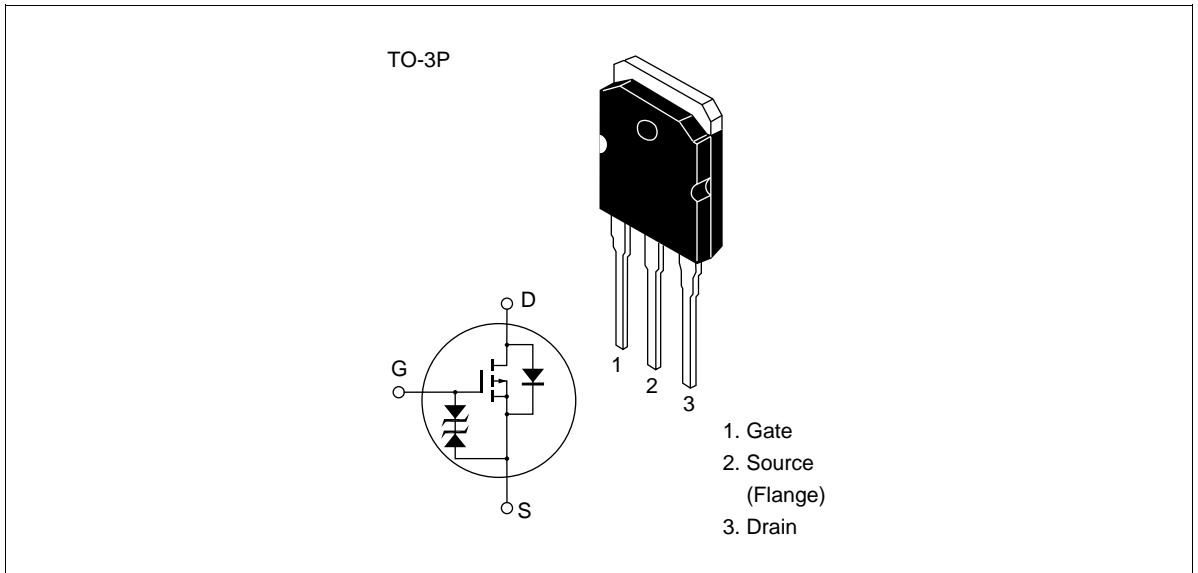
Low frequency power amplifier

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 (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		P_{ch}^{*1}	100	W
Channel temperature		Tch	150	°C
Storage temperature		Tstg	-55 to +150	°C

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

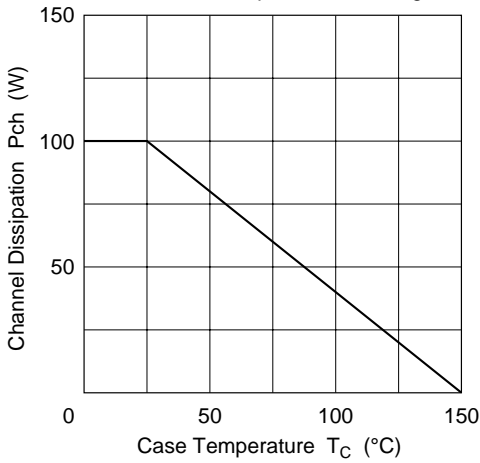
Electrical Characteristics (Ta = 25°C)

Item		Symbol	Min	Typ	Max	Unit	Test conditions
Drain to source breakdown voltage	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		C_{iss}	—	900	—	pF	$V_{GS} = 5 \text{ V}$, $V_{DS} = -10 \text{ V}$,
Output capacitance		C_{oss}	—	400	—	pF	$f = 1 \text{ MHz}$
Reverse transfer capacitance		C_{rss}	—	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	

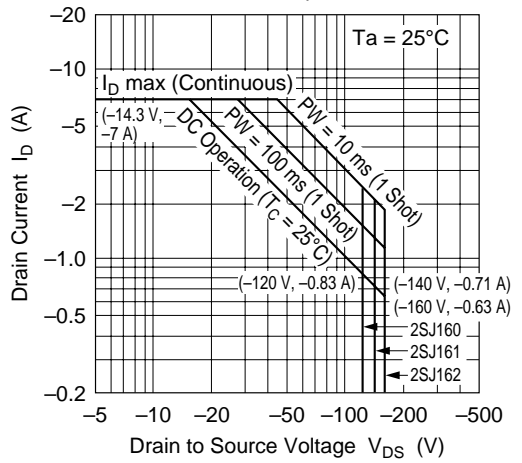
Note: 1. Pulse test

2SJ160, 2SJ161, 2SJ162

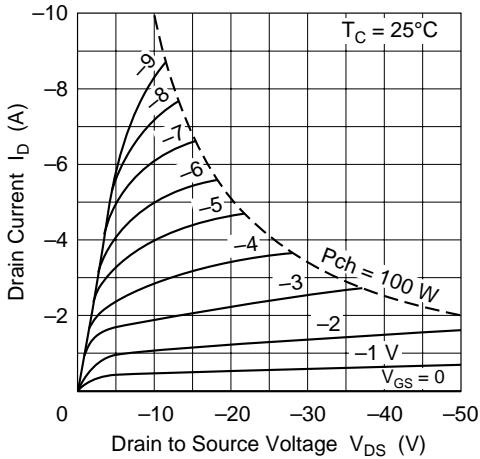
Power vs. Temperature Derating



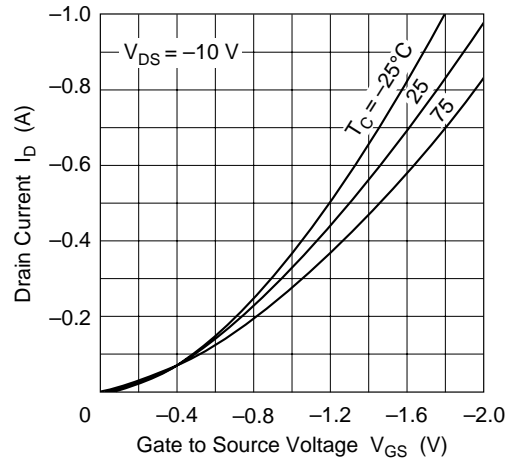
Maximum Safe Operation Area



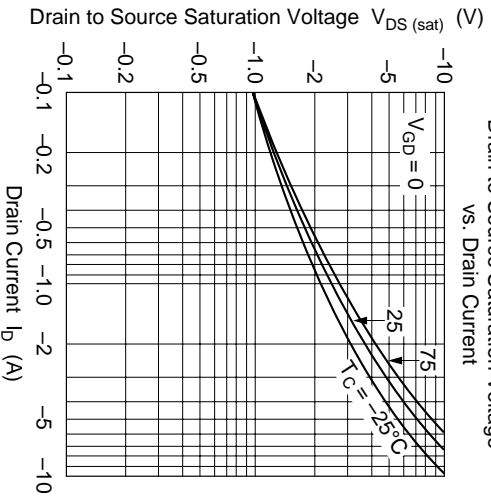
Typical Output Characteristics



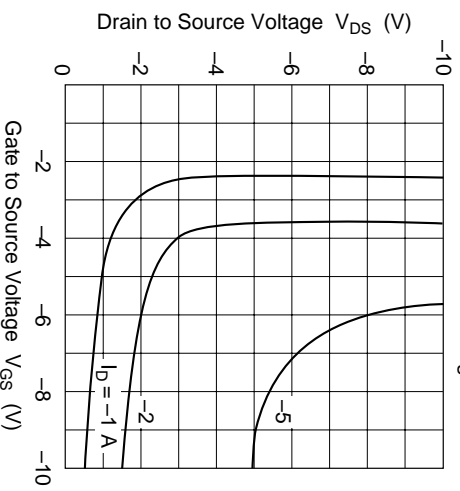
Typical Transfer Characteristics



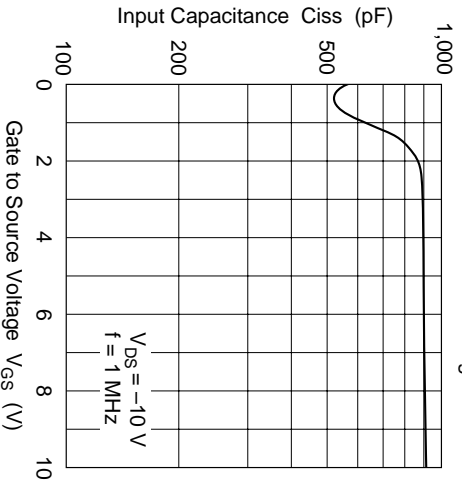
Drain to Source Saturation Voltage $V_{DS(sat)}$ vs. Drain Current



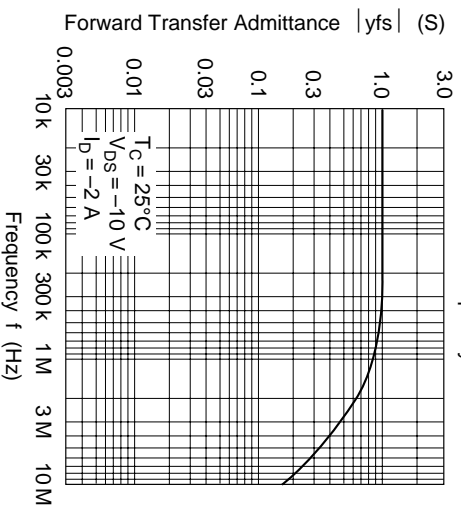
Drain to Source Voltage V_{DS} vs. Gate to Source Voltage V_{GS}

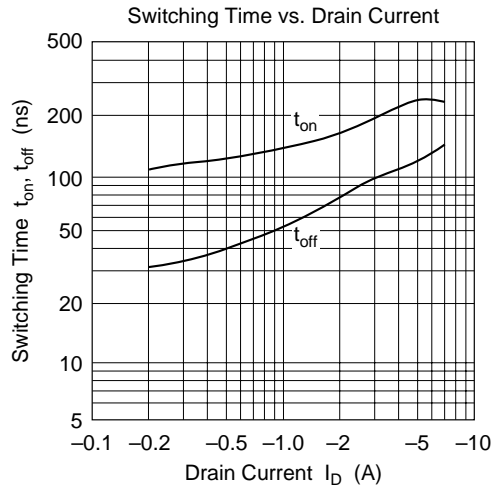


Input Capacitance vs. Gate to Source Voltage

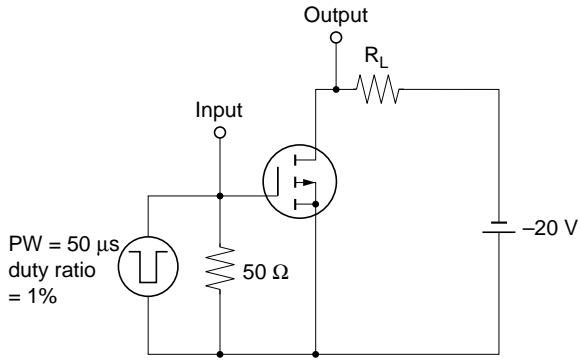


Forward Transfer Admittance vs. Frequency

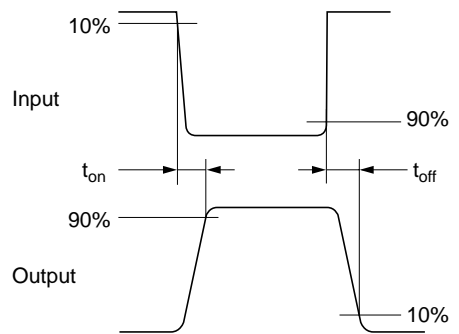




Switching Time Test Circuit



Waveforms



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Hitachi, Ltd.

Semiconductor & Integrated Circuits.
Nippon Bldg., 2-6-2, Ohte-machi, Chiyoda-ku, Tokyo 100-0004, Japan
Tel: Tokyo (03) 3270-2111 Fax: (03) 3270-5109

URL North America : <http://semiconductor.hitachi.com/>
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For further information write to:

Hitachi Semiconductor
(America) Inc.
179 East Tasman Drive,
San Jose, CA 95134
Tel: <1> (408) 433-1990
Fax: <1> (408) 433-0223

Hitachi Europe GmbH
Electronic components Group
Dornacher Straße 3
D-85622 Feldkirchen, Munich
Germany
Tel: <49> (89) 9 9180-0
Fax: <49> (89) 9 29 30 00

Hitachi Europe Ltd.
Electronic Components Group.
Whitebrook Park
Lower Cookham Road
Maidenhead
Berkshire SL6 8YA, United Kingdom
Tel: <44> (1628) 585000
Fax: <44> (1628) 778322

Hitachi Asia Pte. Ltd.
16 Collyer Quay #20-00
Hitachi Tower
Singapore 049318
Tel: 535-2100
Fax: 535-1533

Hitachi Asia Ltd.
Taipei Branch Office
3F, Hung Kuo Building, No.167,
Tun-Hwa North Road, Taipei (105)
Tel: <886> (2) 2718-3666
Fax: <886> (2) 2718-8180

Hitachi Asia (Hong Kong) Ltd.
Group III (Electronic Components)
7/F., North Tower, World Finance Centre,
Harbour City, Canton Road, Tsim Sha Tsui,
Kowloon, Hong Kong
Tel: <852> (2) 735 9218
Fax: <852> (2) 730 0281
Telex: 40815 HITEC HX

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