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# 2SK1056, 2SK1057, 2SK1058

Silicon N-Channel MOS FET

# HITACHI

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## Application

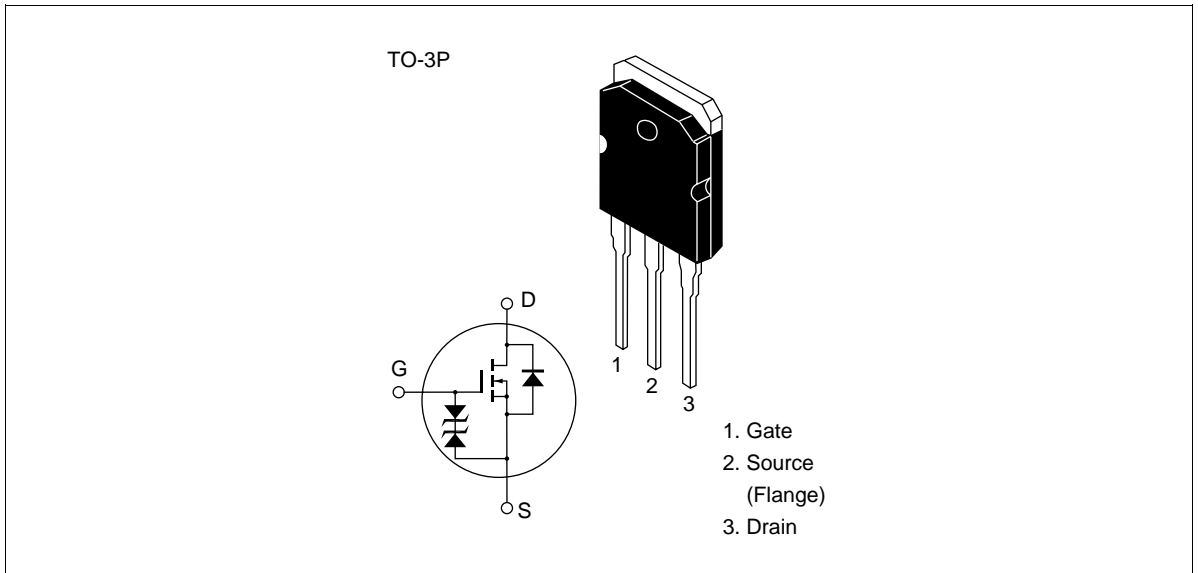
Low frequency power amplifier

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



## Absolute Maximum Ratings (Ta = 25°C)

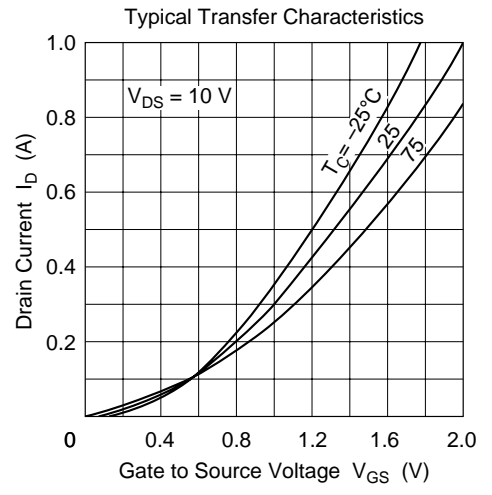
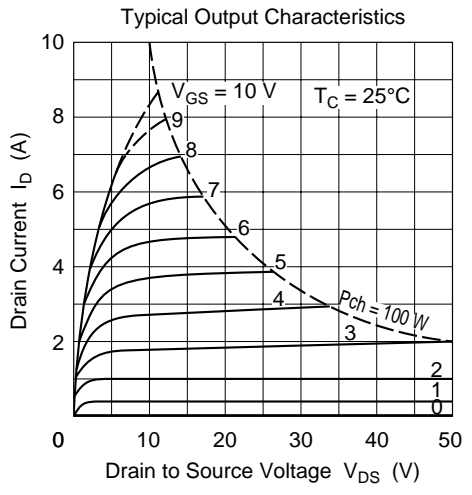
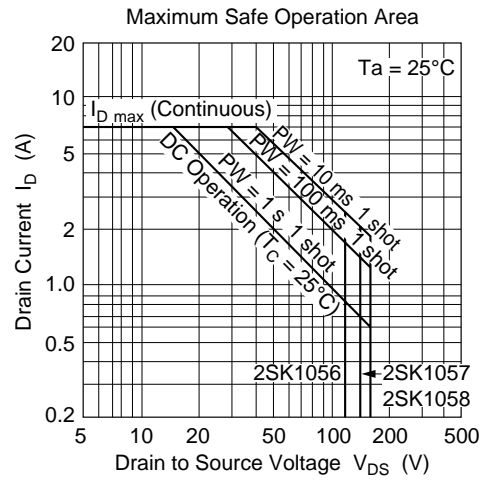
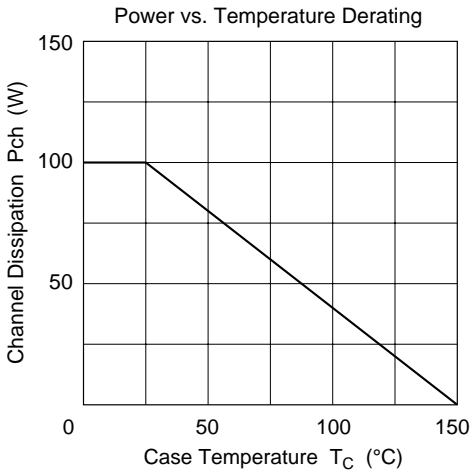
Item		Symbol	Ratings	Unit
Drain to source voltage	2SK1056	$V_{DSX}$	120	V
	2SK1057		140	
	2SK1058		160	
Gate to source voltage		$V_{GSS}$	±15	V
Drain current		$I_D$	7	A
Body to drain diode reverse drain current		$I_{DR}$	7	A
Channel dissipation		$P_{ch}^{*1}$	100	W
Channel temperature		Tch	150	°C
Storage temperature		Tstg	-55 to +150	°C

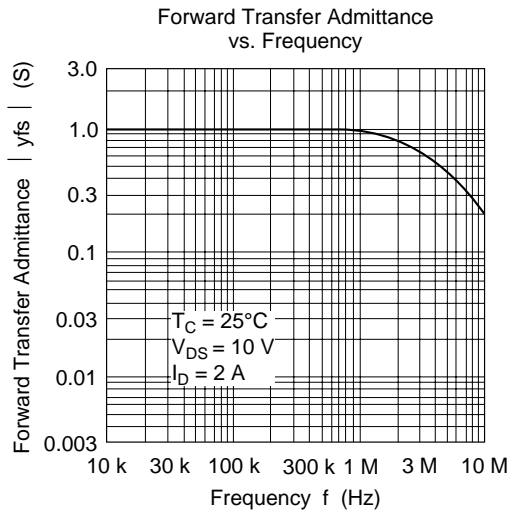
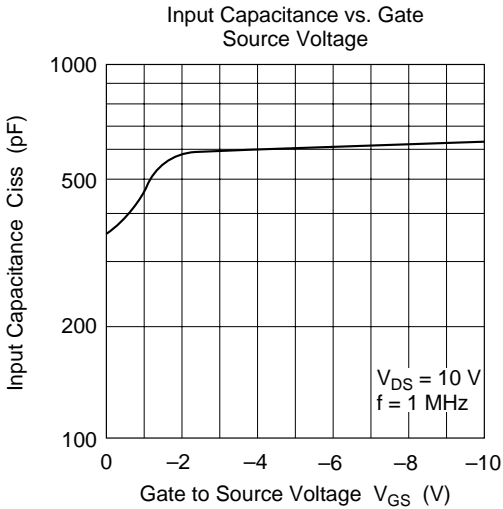
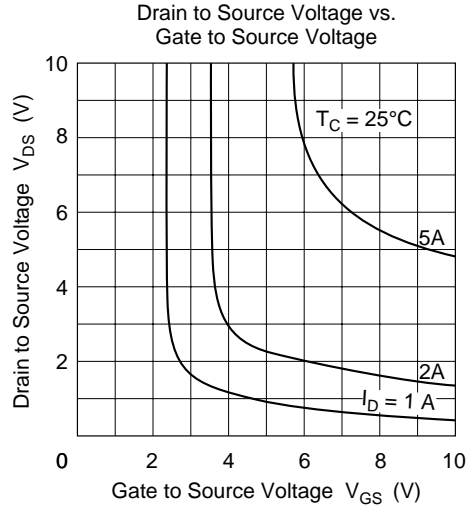
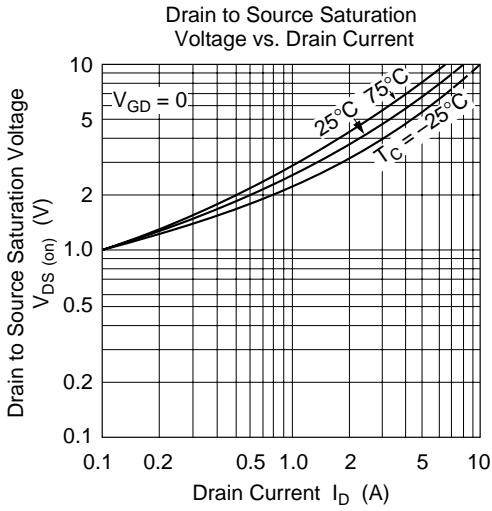
Note: 1. Value at  $T_c = 25^\circ\text{C}$

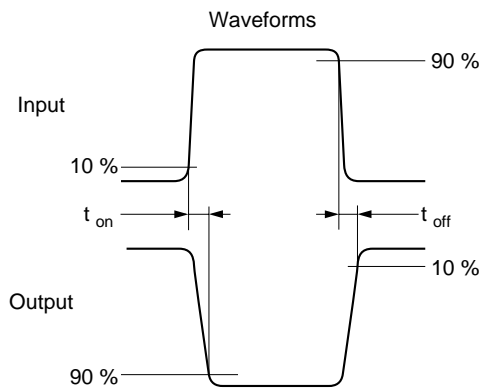
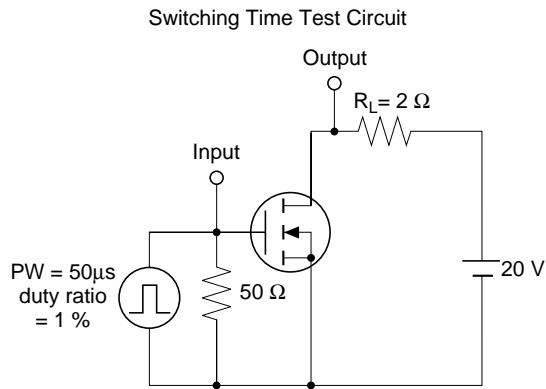
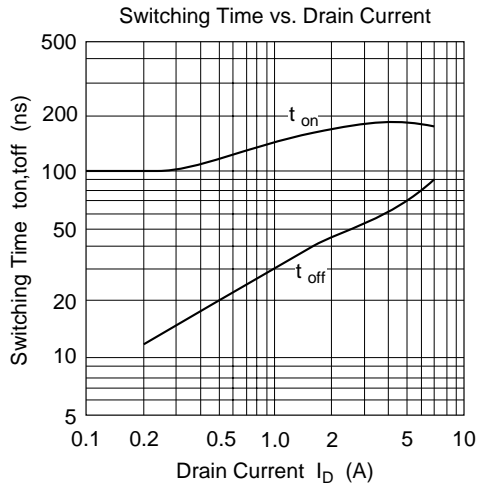
**Electrical Characteristics (Ta = 25°C)**

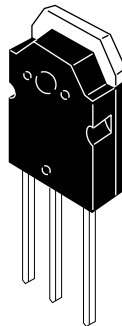
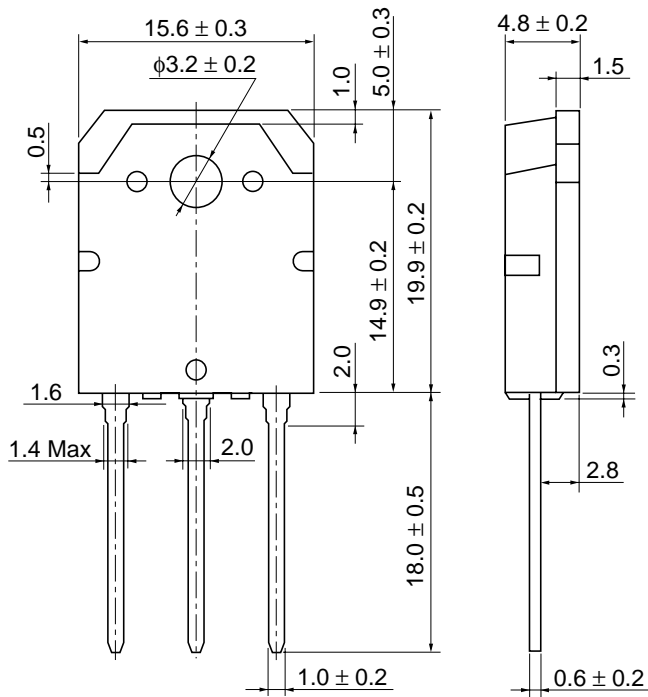
Item	Symbol	Min	Typ	Max	Unit	Test conditions
Drain to source breakdown voltage	2SK1056 $V_{(BR)DSX}$ 2SK1057 2SK1058	120 140 160	—	—	V	$I_D = 10 \text{ mA}, V_{GS} = -10 \text{ V}$
Gate to source breakdown voltage	$V_{(BR)GSS}$	$\pm 15$	—	—	V	$I_G = \pm 100 \mu\text{A}, V_{DS} = 0$
Gate to source cutoff 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	$C_{iss}$	—	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: 1. Pulse test









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

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# HITACHI

## 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/>  
             Europe                : <http://www.hitachi-eu.com/hel/ecg>  
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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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