## Silicon P-Channel MOS FET

# **HITACHI**

November 1996

### **Application**

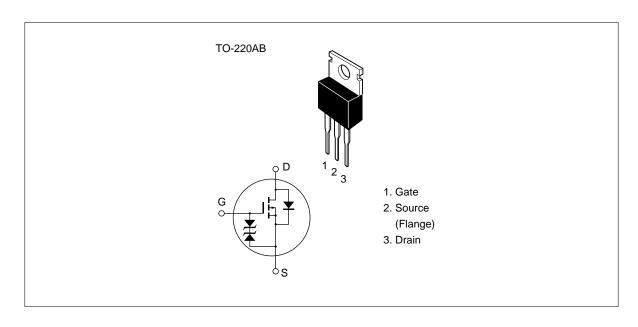
High frequency and low frequency power amplifier, high speed power switching

Complementary pair with 2SK213, 2SK214, 2SK215, 2SK216

#### **Features**

- Suitable for direct mounting
- High forward transfer admittance
- Excellent frequency response
- Enhancement-mode

#### **Outline**



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

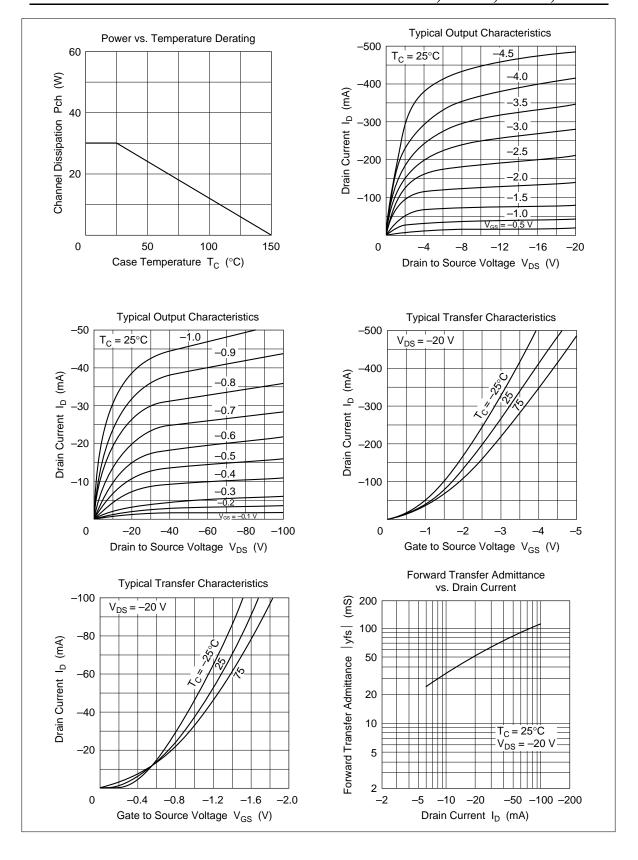
Item		Symbol	Ratings	Unit
Drain to source voltage	2SJ76	$V_{\scriptscriptstyle DSX}$	-140	V
	2SJ77		<del>-160</del>	<del></del>
	2SJ78		-180	
	2SJ79		-200	
Gate to source voltage		$V_{GSS}$	±15	V
Drain current		I <sub>D</sub>	-500	mA
Body to drain diode reverse drain current		I <sub>DR</sub>	-500	mA
Channel dissipation		Pch	1.75	W
		Pch*1	30	W
Channel temperature		Tch	150	°C
Storage temperature		Tstg	-45 to +150	°C

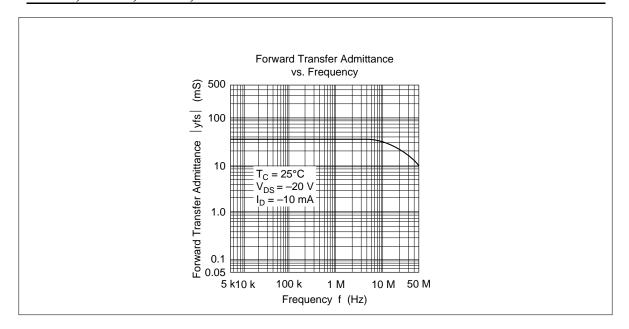
Note 1. Value at  $T_c = 25^{\circ}C$ 

### **Electrical Characteristics** ( $Ta = 25^{\circ}C$ )

Item		Symbol	Min	Тур	Max	Unit	Test conditions
Drain to source	2SJ76	$V_{(BR)DSX}$	-140	_	_	V	$V_{GS} = 2 \text{ V}, I_{D} = -1 \text{ mA}$
breakdown voltage	2SJ77	_	-160	_	_	V	
	2SJ78	_	-180	_	_	V	
	2SJ79		-200	_	_	V	
Gate to source breakdown voltage		$V_{(BR)GSS}$	±15	_	_	V	$I_{G} = \pm 10 \ \mu A, \ V_{DS} = 0$
Gate to source voltage		$V_{GS(on)}$	-0.2	_	-1.5	V	$I_D = -10 \text{ mA}, V_{DS} = -10 \text{ V}^{*1}$
Drain to source saturation voltage		$V_{\text{DS(sat)}}$	_	_	-2.0	V	$I_D = -10 \text{ mA}, V_{GD} = 0^{*1}$
Forward transfer admittance		y <sub>fs</sub>	20	35	_	mS	$I_D = -10 \text{ mA}, V_{DS} = -20 \text{ V}^{*1}$
Input capacitance		Ciss	_	120	_	pF	$V_{DS} = -10 \text{ V}, I_{D} = -10 \text{ mA},$
Reverse transfer capacitance		Crss	_	4.8	_	pF	f = 1 MHz

Note 1. Pulse test





When using this document, keep the following in mind:

- 1. This document may, wholly or partially, be subject to change without notice.
- 2. All rights are reserved: No one is permitted to reproduce or duplicate, in any form, the whole or part of this document without Hitachi's permission.
- 3. Hitachi will not be held responsible for any damage to the user that may result from accidents or any other reasons during operation of the user's unit according to this document.
- 4. Circuitry and other examples described herein are meant merely to indicate the characteristics and performance of Hitachi's semiconductor products. Hitachi assumes no responsibility for any intellectual property claims or other problems that may result from applications based on the examples described herein.
- 5. No license is granted by implication or otherwise under any patents or other rights of any third party or Hitachi, Ltd.
- 6. MEDICAL APPLICATIONS: Hitachi's products are not authorized for use in MEDICAL APPLICATIONS without the written consent of the appropriate officer of Hitachi's sales company. Such use includes, but is not limited to, use in life support systems. Buyers of Hitachi's products are requested to notify the relevant Hitachi sales offices when planning to use the products in MEDICAL APPLICATIONS.

# **HITACHI**

#### Hitachi. Ltd.

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

#### For further information write to:

Hitachi America, Ltd. Semiconductor & IC Div. 2000 Sierra Point Parkway Brisbane, CA. 94005-1835 U S A Tel: 415-589-8300 Fax: 415-583-4207 Hitachi Europe GmbH Electronic Components Group Continental Europe Dornacher Straße 3 D-85622 Feldkirchen München Tel: 089-9 91 80-0 Fax: 089-9 29 30 00 Hitachi Europe Ltd.
Electronic Components Div.
Northern Europe Headquarters
Whitebrook Park
Lower Cookham Road
Maidenhead
Berkshire SL6 8YA
United Kingdom
Tel: 0628-585000
Fax: 0628-778322

Hitachi Asia Pte. Ltd. 16 Collyer Quay #20-00 Hitachi Tower Singapore 0104 Tel: 535-2100 Fax: 535-1533

Hitachi Asia (Hong Kong) Ltd. Unit 706, North Tower, World Finance Centre, Harbour City, Canton Road Tsim Sha Tsui, Kowloon Hong Kong Tel: 27359218 Fax: 27306071