
2SK2220, 2SK2221

Silicon N-Channel MOS FET

HITACHI

November 1996

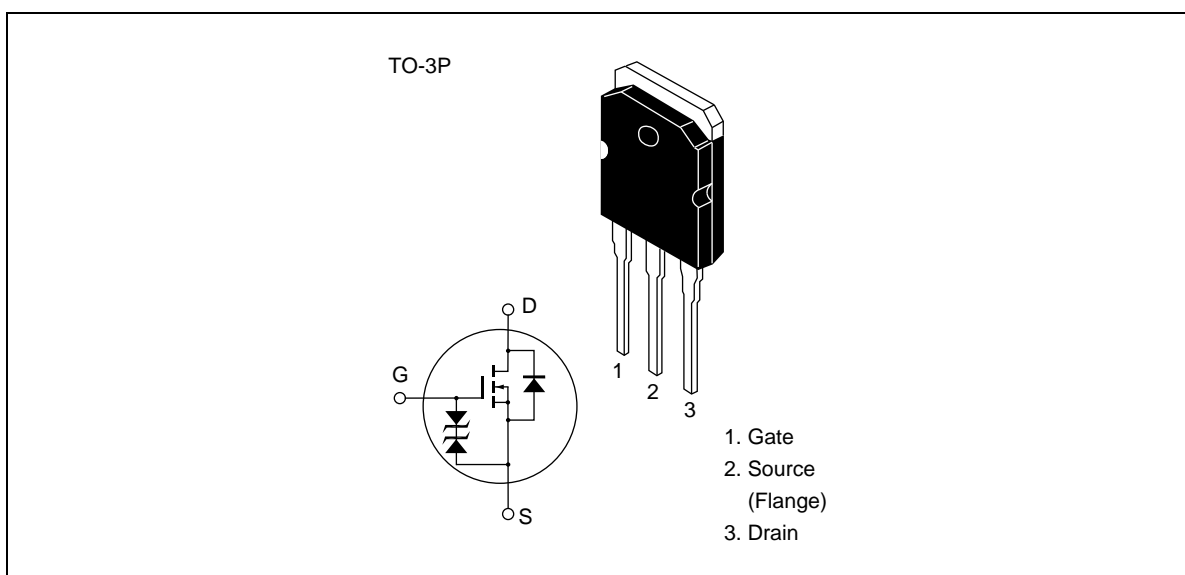
Application

Low frequency power amplifier
Complementary pair with 2SJ351, 2SJ352

Features

- High power gain
- Excellent frequency response
- High speed switching
- Wide area of safe operation
- Enhancement-mode
- Good complementary characteristics
- Equipped with gate protection diodes

Outline



2SK2220, 2SK2221

Ordering Information

Type No.	VDSS
2SK2220	180 V
2SK2221	200 V

Absolute Maximum Ratings (Ta = 25°C)

Item		Symbol	Ratings	Unit
Drain to source voltage	2SK2220	V_{DSX}	180	V
	2SK2221		200	
Gate to source voltage		V_{GSS}	±20	V
Drain current		I_D	8	A
Body to drain diode reverse drain current		I_{DR}	8	A
Channel dissipation		P_{ch}^{*1}	100	W
Channel temperature		Tch	150	°C
Storage temperature		Tstg	-55 to +150	°C

Note 1. Value at Tc = 25 °C

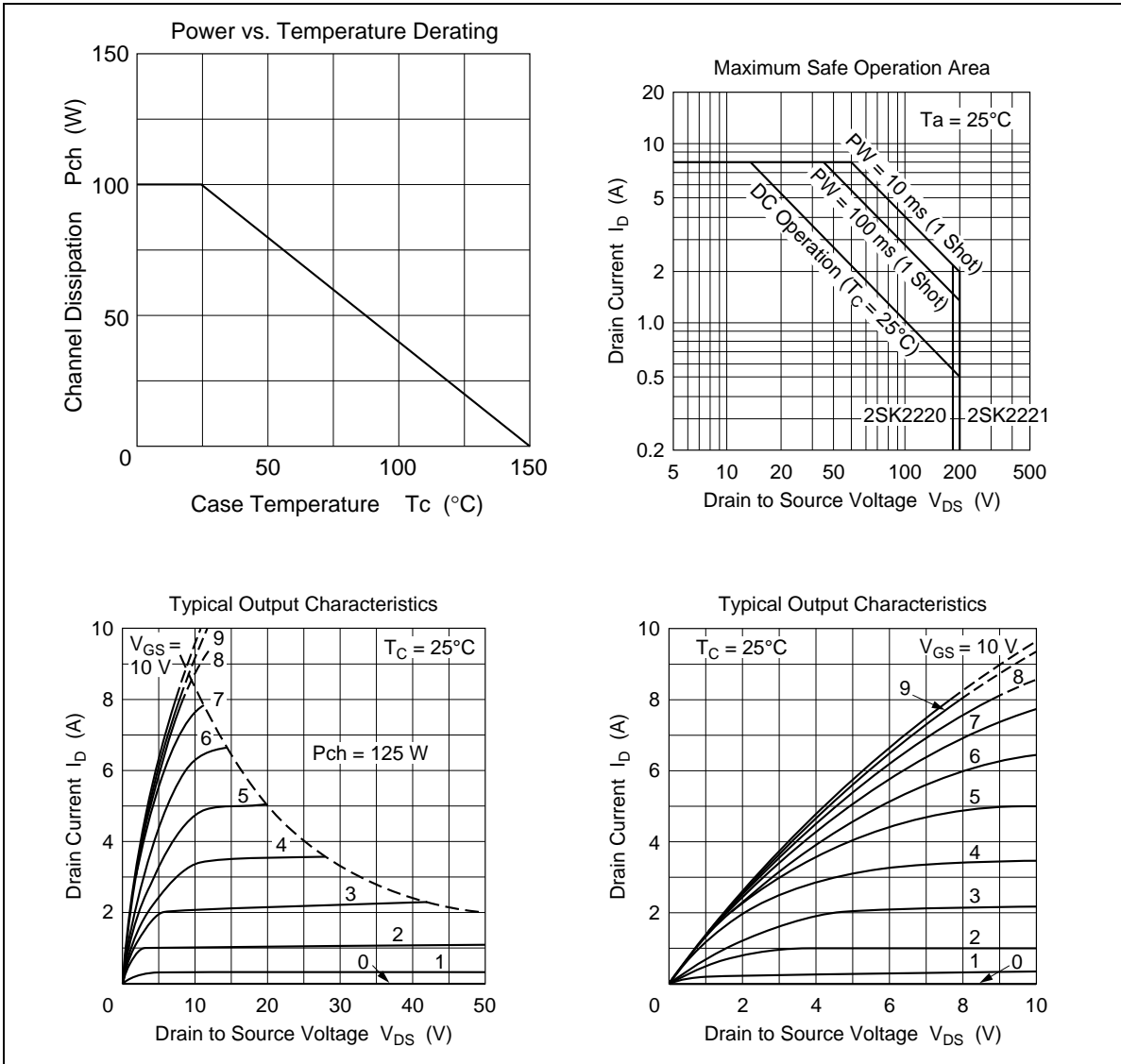
2SK2220, 2SK2221

Electrical Characteristics (Ta = 25°C)

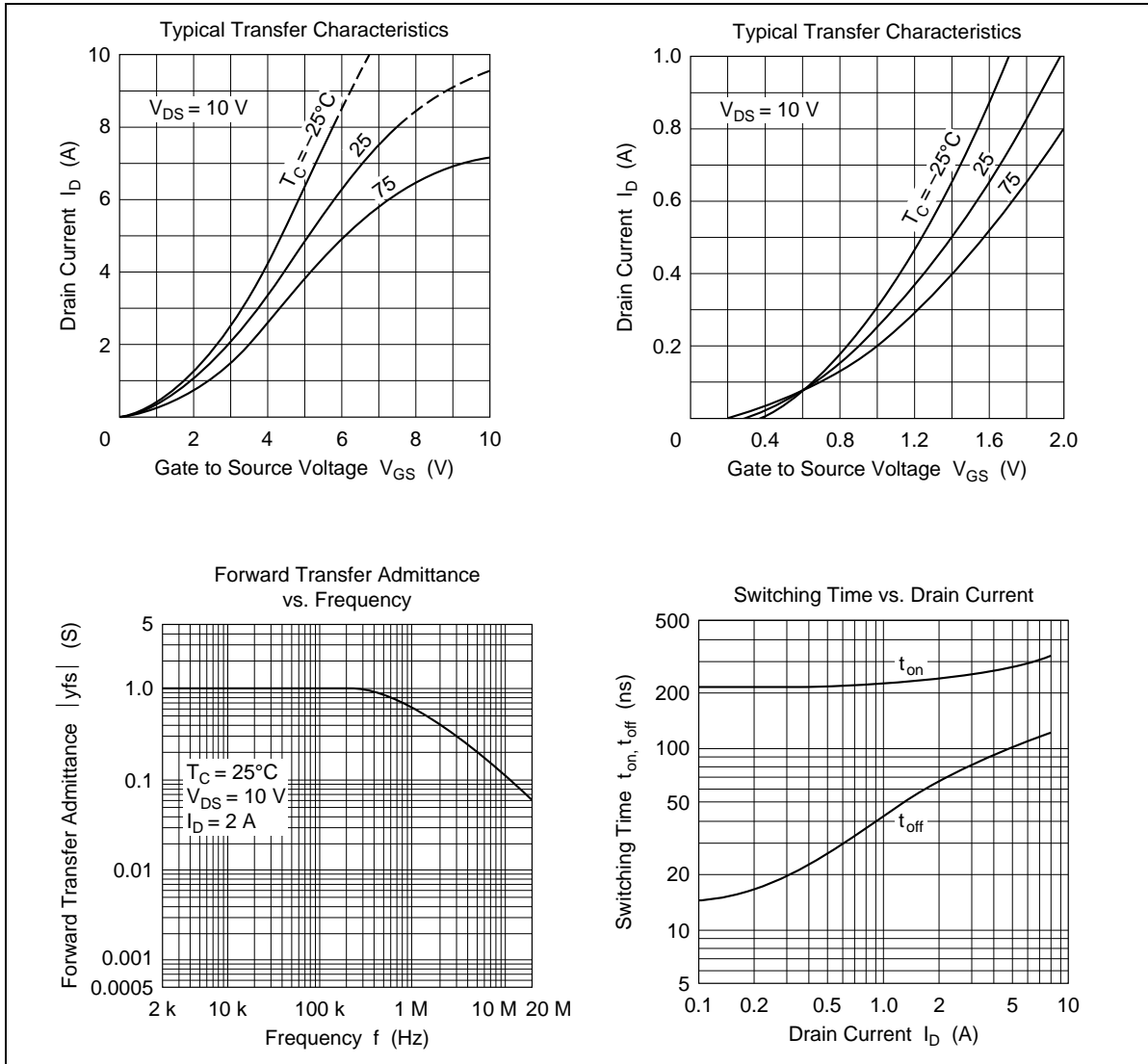
Item	Symbol	Min	Typ	Max	Unit	Test conditions	
Drain to source breakdown voltage	2SK2220	$V_{(BR)DSX}$	180	—	—	V	$I_D = 10 \text{ mA}$, $V_{GS} = -10 \text{ V}$
	2SK2221		200	—	—		
Gate to source breakdown voltage		$V_{(BR)GSS}$	± 20	—	—	V	$I_G = \pm 100 \mu\text{A}$, $V_{DS} = 0$
Gate to source cutoff 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	$I_D = 8 \text{ A}$, $V_{GD} = 0 \text{ V}^{*1}$
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}	—	800	—	pF	
Reverse transfer capacitance		C_{rss}	—	8	—	pF	
Turn-on time		t_{on}	—	250	—	ns	$V_{DD} = 30 \text{ V}$
Turn-off time		t_{off}	—	90	—	ns	$I_D = 4 \text{ A}$

Note 1. Pulse Test

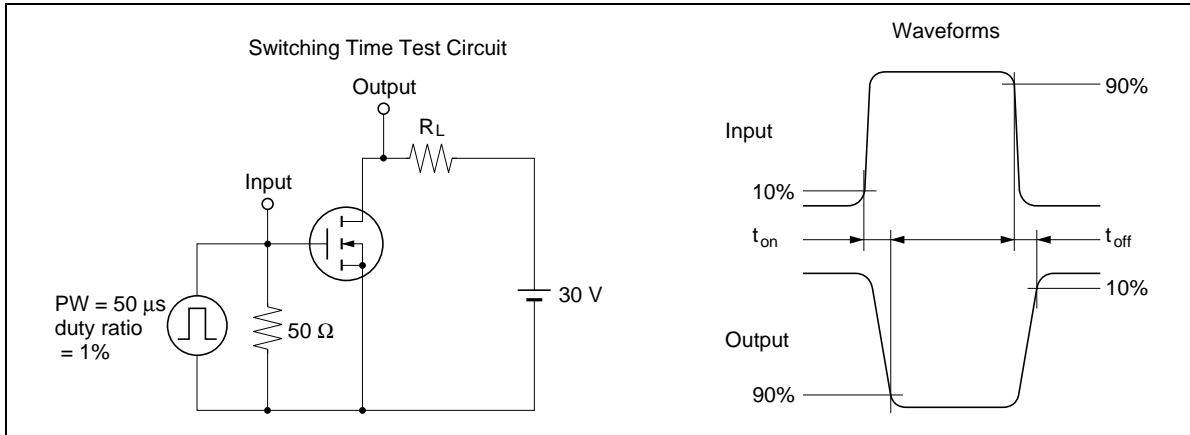
2SK2220, 2SK2221



HITACHI



2SK2220, 2SK2221



Notice

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