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# 2SJ317

Silicon P-Channel MOS FET

# HITACHI

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## Application

High speed power switching

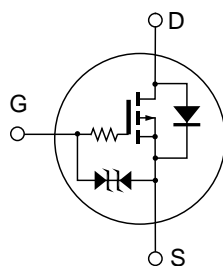
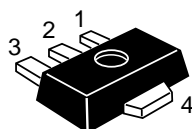
Low voltage operation

## Features

- Very low on-resistance
- High speed switching
- Suitable for camera or VTR motor drive circuit, power switch, solenoid drive and etc.

## Outline

UPAK



1. Gate
2. Drain
3. Source
4. Drain

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

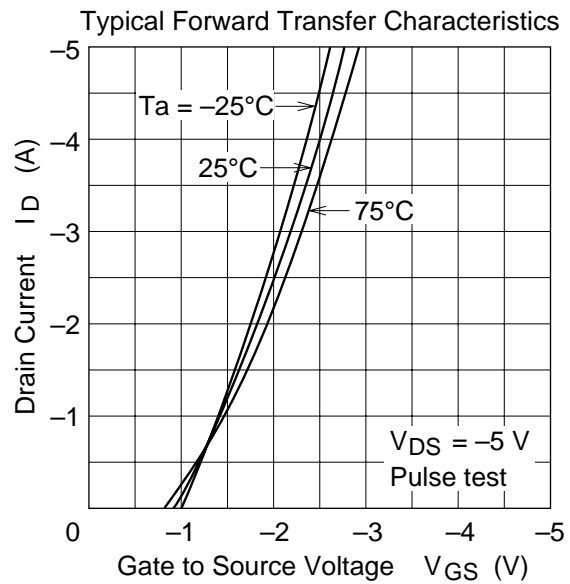
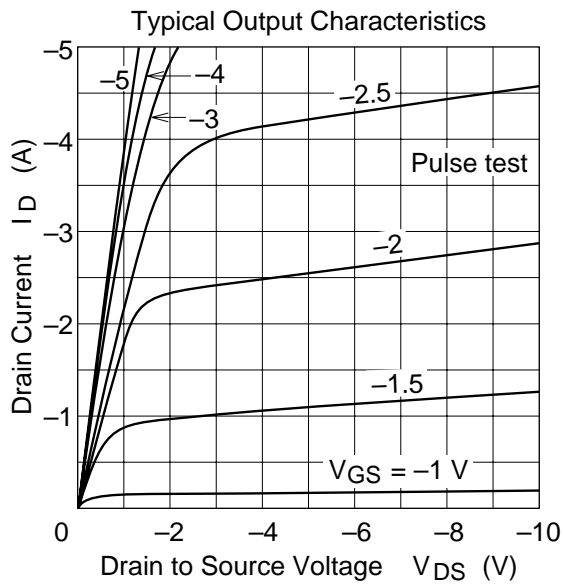
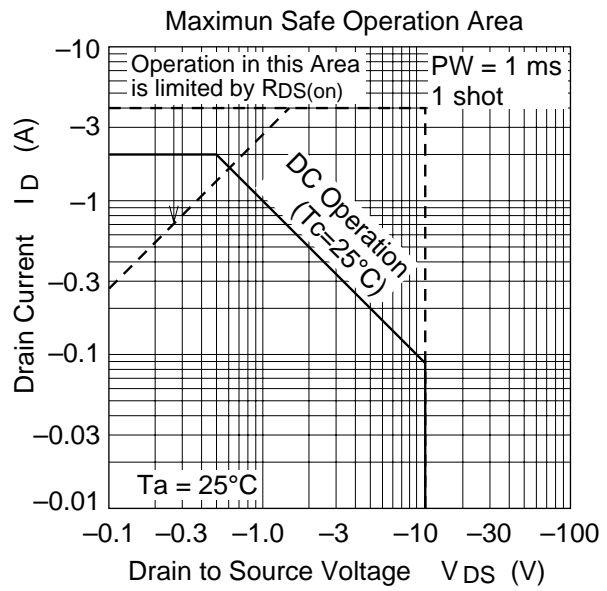
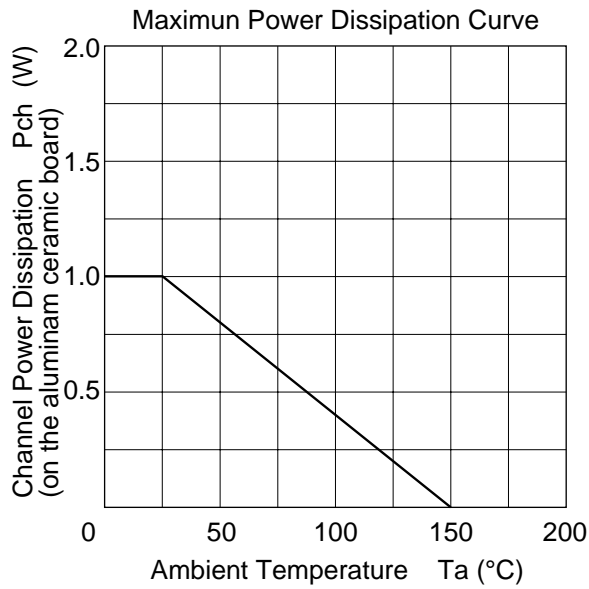
Item	Symbol	Ratings	Unit
Drain to source voltage	$V_{DSS}$	-12	V
Gate to source voltage	$V_{GSS}$	-7	V
Drain current	$I_D$	±2	A
Drain peak current	$I_{D(pulse)}^{*1}$	±4	A
Body to drain diode reverse drain current	$I_{DR}$	2	A
Channel dissipation	Pch <sup>*2</sup>	1	W
Channel temperature	Tch	150	°C
Storage temperature	Tstg	-55 to +150	°C

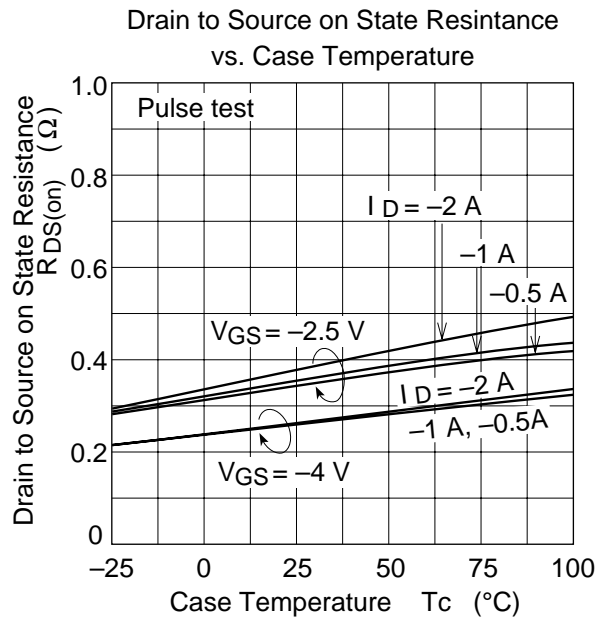
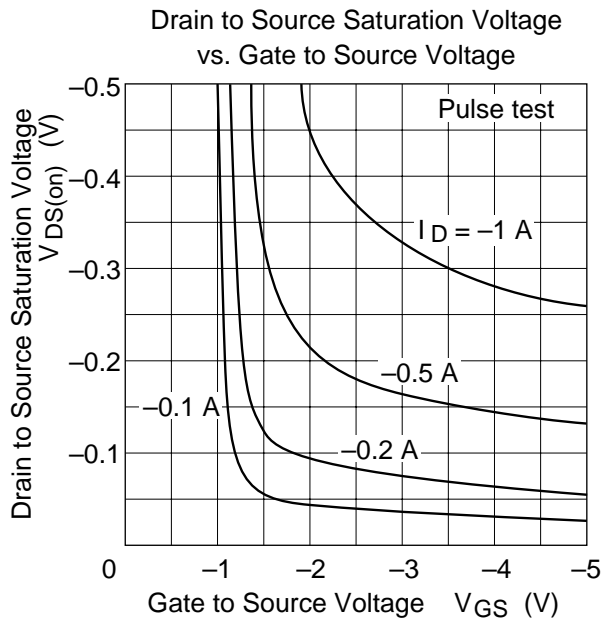
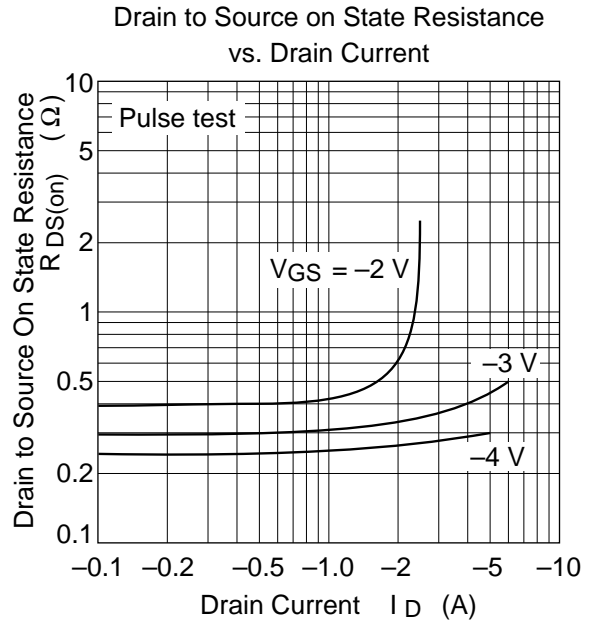
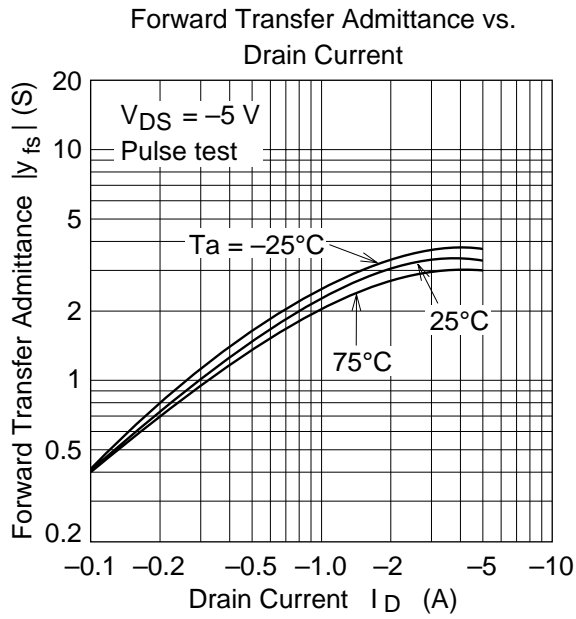
- Notes: 1.  $PW \leq 100 \mu s$ , duty cycle  $\leq 10\%$   
 2. Value on the alumina ceramic board (12.5×20×0.7 mm).  
 3. Marking is "NY".

## Electrical Characteristics (Ta = 25°C)

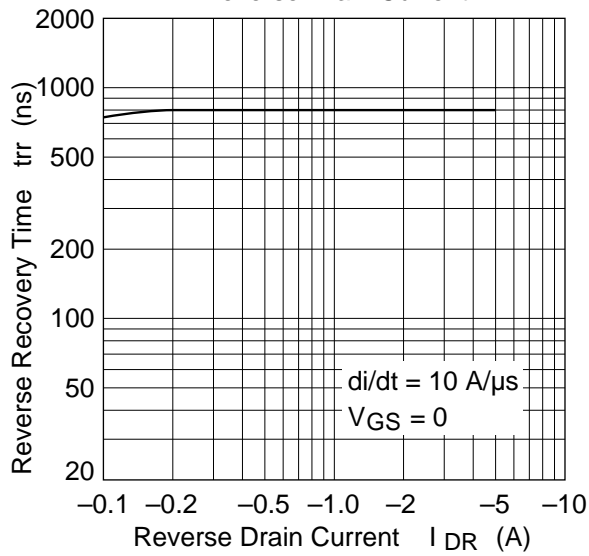
Item	Symbol	Min	Typ	Max	Unit	Test conditions
Drain to source breakdown voltage	$V_{(BR)DSS}$	-12	—	—	V	$I_D = -1 \text{ mA}$ , $V_{GS} = 0$
Gate to source breakdown voltage	$V_{(BR)GSS}$	±7	—	—	V	$I_G = \pm 10 \mu A$ , $V_{DS} = 0$
Gate to source cutoff current	$I_{GSS}$	—	—	±5	μA	$V_{GS} = \pm 6.5 \text{ V}$ , $V_{DS} = 0$
Zero gate voltage drain current	$I_{DSS}$	—	—	-1	μA	$V_{DS} = -8 \text{ V}$ , $V_{GS} = 0$
Gate to source cutoff voltage	$V_{GS(off)}$	-0.4	—	-1.4	V	$I_D = -100 \mu A$ , $V_{DS} = -5 \text{ V}$
Static drain to source on state resistance	$R_{DS(on)1}$	—	0.4	0.7	Ω	$I_D = -0.5 \text{ A}^{*1}$ , $V_{GS} = -2.2 \text{ V}$
	$R_{DS(on)2}$	—	0.28	0.35	Ω	$I_D = -1 \text{ A}^{*1}$ , $V_{GS} = -4 \text{ V}$
Forward transfer admittance	$ y_{fs} $	1.0	2.3	—	S	$I_D = -1 \text{ A}^{*1}$ , $V_{DS} = -5 \text{ V}$
Input capacitance	Ciss	—	63	—	pF	$V_{DS} = -5 \text{ V}$ , $V_{GS} = 0$ ,
Output capacitance	Coss	—	180	—	pF	f = 1 MHz
Reverse transfer capacitance	Crss	—	23	—	pF	
Turn-on time	$t_{on}$	—	500	—	ns	$I_D = -0.2 \text{ A}^{*1}$ , $V_{in} = -4 \text{ V}$ ,
Turn-off time	$t_{off}$	—	2860	—	ns	$R_L = 51 \Omega$

- Note: 1. Pulse test

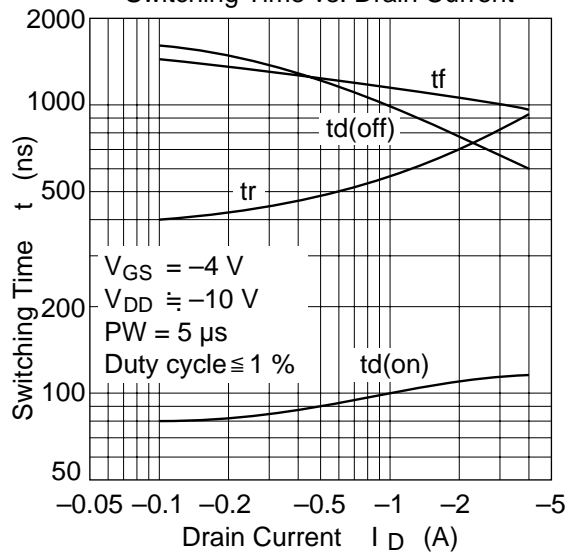




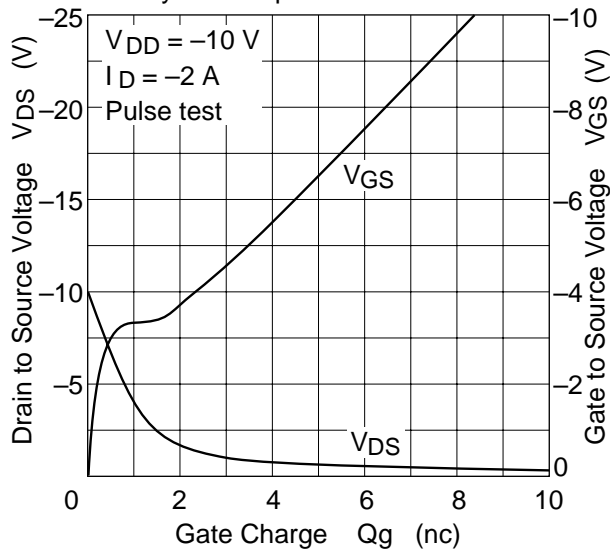
Reverse Recovery Time vs. Reverse Drain Current



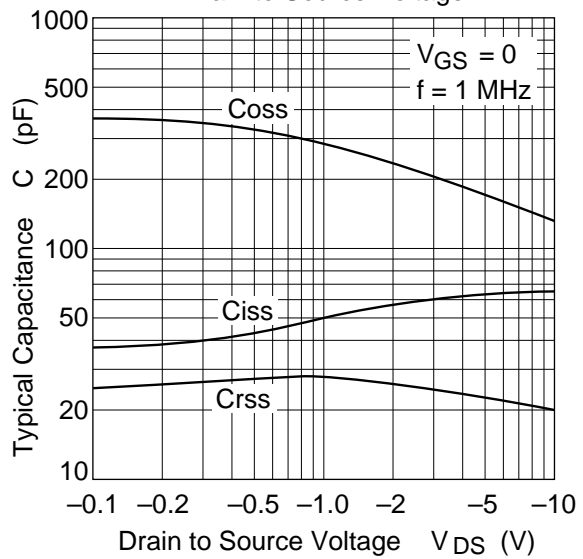
Switching Time vs. Drain Current

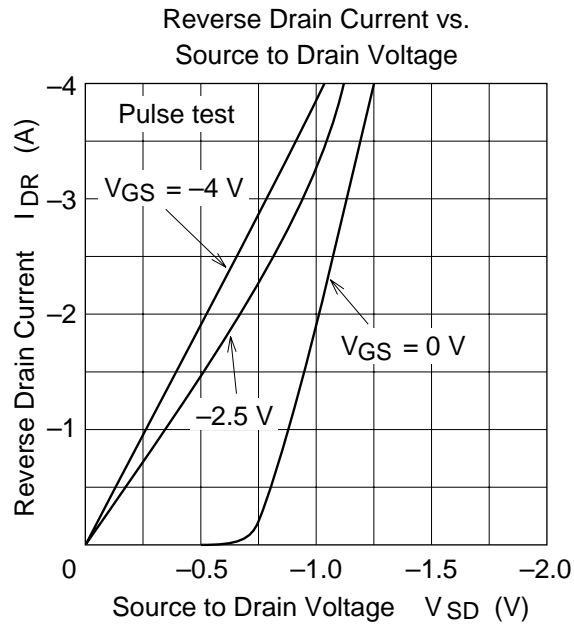


Dynamic Input Characteristics

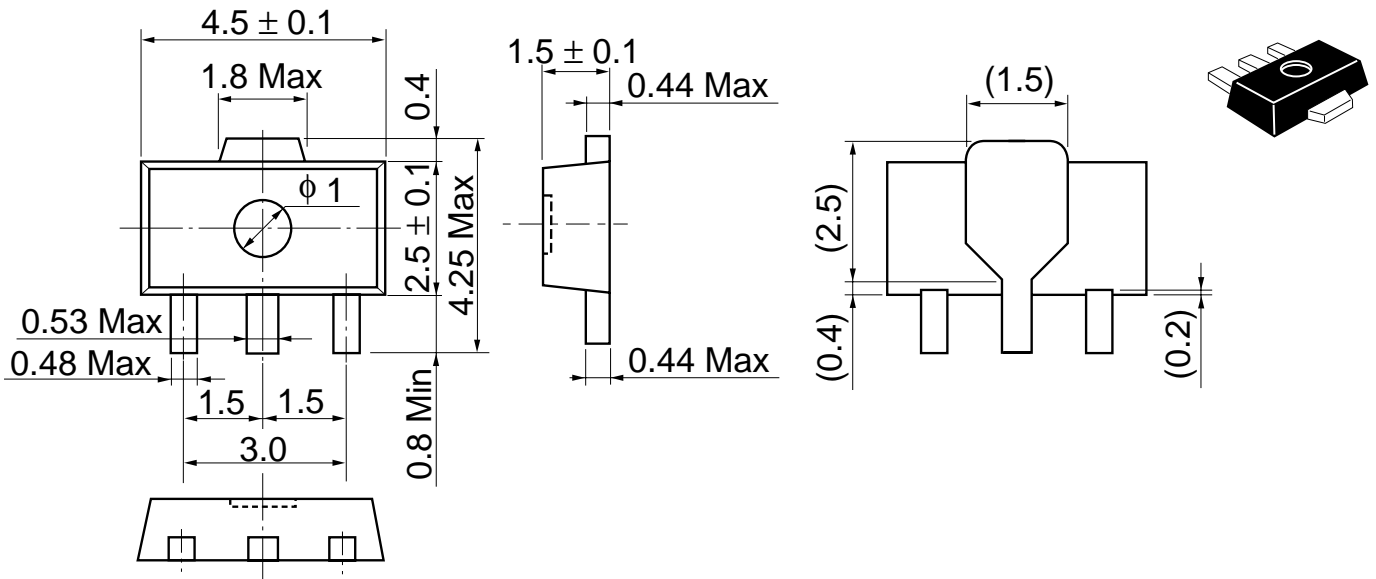


Typical Capacitance vs. Drain to Source Voltage





Unit: mm



Hitachi Code	UPAK
JEDEC	—
EIAJ	Conforms
Weight (reference value)	0.050 g

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