
2SJ317

Silicon P-Channel MOS FET

HITACHI

Application

High speed power switching

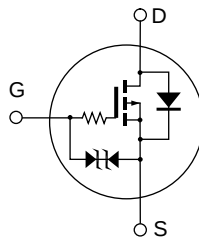
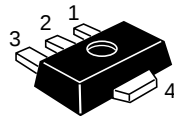
Low voltage operation

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^{*2}	1	W
Channel temperature	Tch	150	°C
Storage temperature	Tstg	-55 to +150	°C

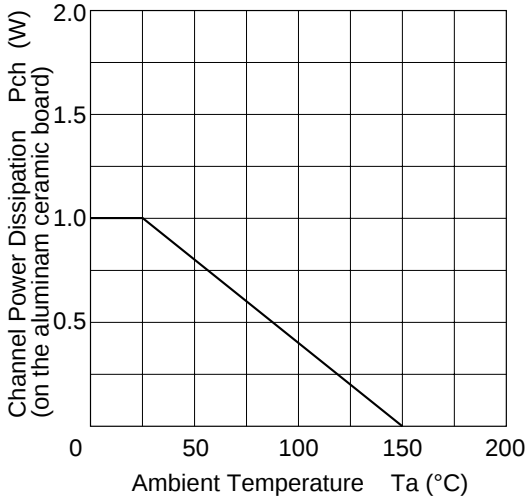
Notes: 1. $PW \leq 100 \mu s$, duty cycle $\leq 10\%$
2. Value on the alumina ceramic board (12.5×20×0.7 mm).
3. Marking is “NY”.

Electrical Characteristics (Ta = 25°C)

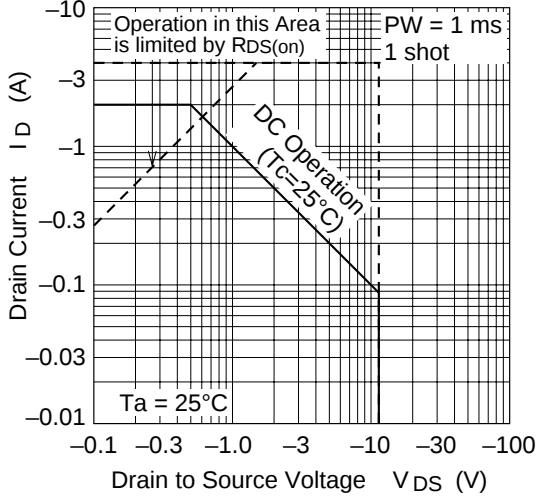
Item	Symbol	Min	Typ	Max	Unit	Test conditions
Drain to source breakdown voltage	$V_{(BR)DSS}$	-12	—	—	V	$I_D = -1 \text{ mA}$, $V_{GS} = 0$
Gate to source breakdown voltage	$V_{(BR)GSS}$	± 7	—	—	V	$I_G = \pm 10 \mu A$, $V_{DS} = 0$
Gate to source cutoff current	I_{GSS}	—	—	± 5	μA	$V_{GS} = \pm 6.5 \text{ V}$, $V_{DS} = 0$
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	$V_{DS} = -5 \text{ V}$, $V_{GS} = 0$, $f = 1 \text{ MHz}$
Output capacitance	Coss	—	180	—	pF	
Reverse transfer capacitance	Crss	—	23	—	pF	
Turn-on time	t_{on}	—	500	—	ns	$I_D = -0.2 \text{ A}^{*1}$, $V_{in} = -4 \text{ V}$, $R_L = 51 \Omega$
Turn-off time	t_{off}	—	2860	—	ns	

Note: 1. Pulse test

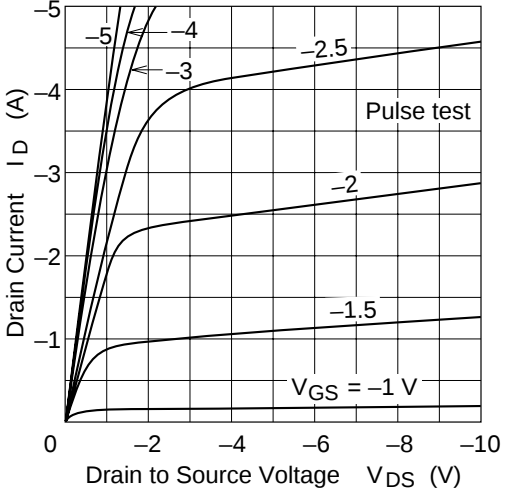
Maximun Power Dissipation Curve



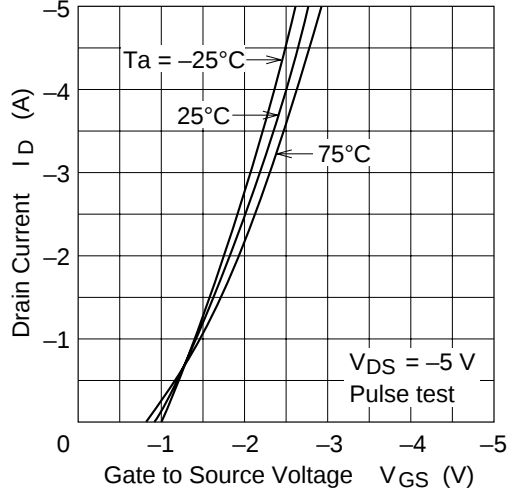
Maximun Safe Operation Area

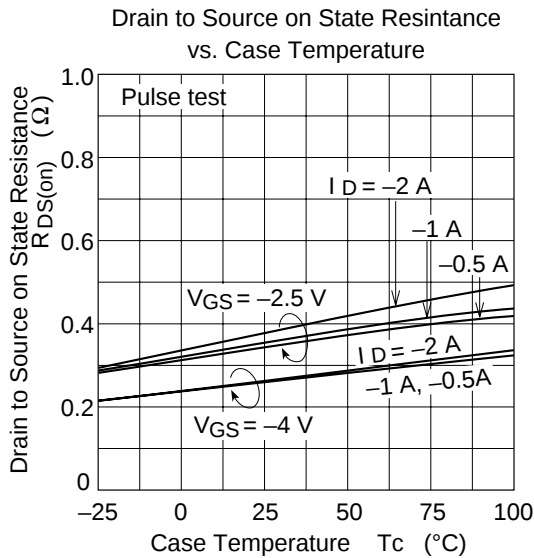
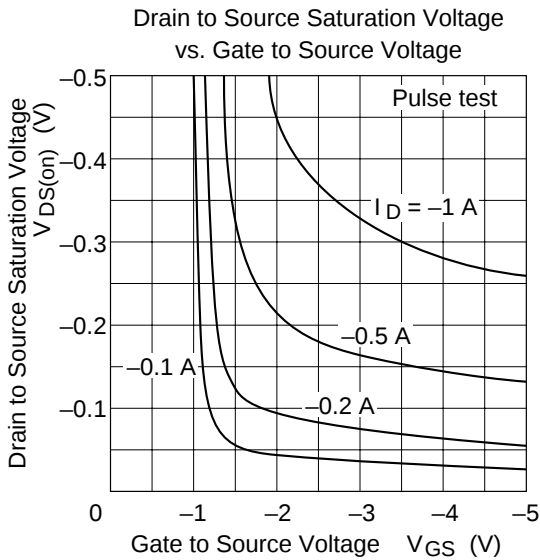
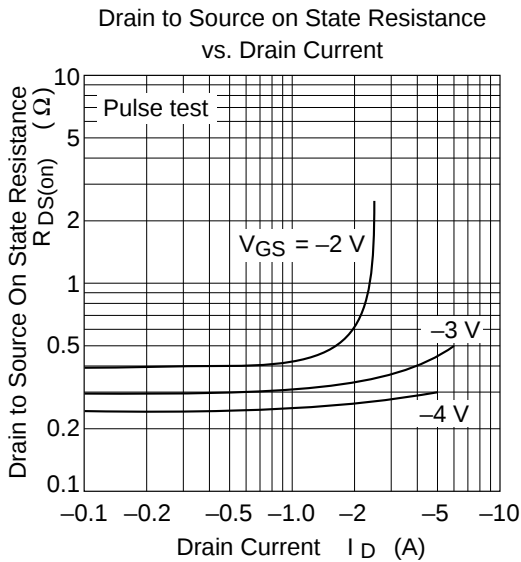
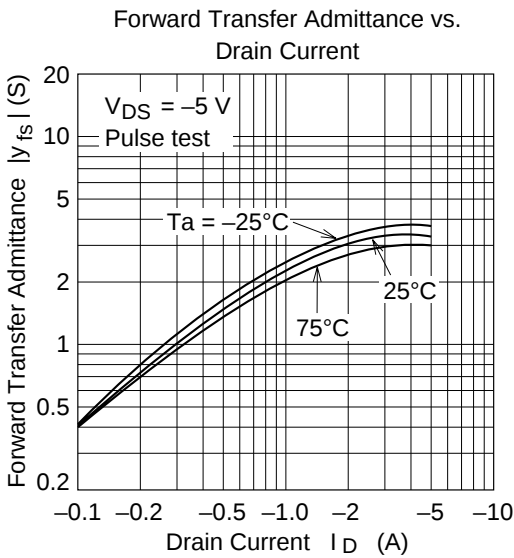


Typical Output Characteristics

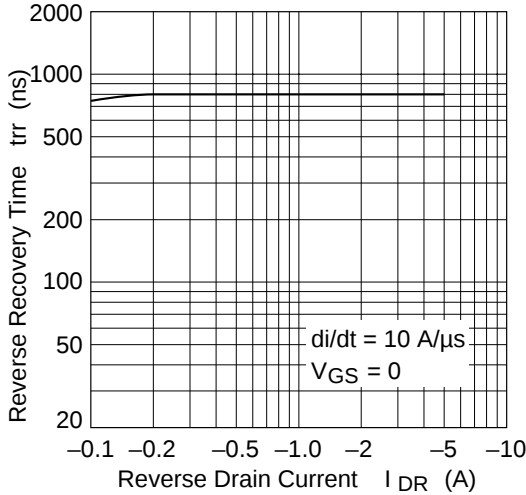


Typical Forward Transfer Characteristics

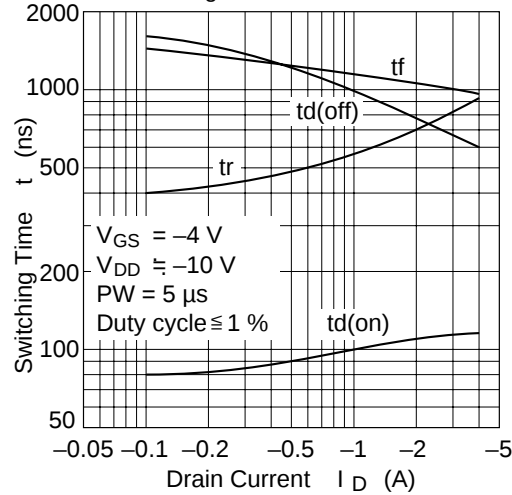




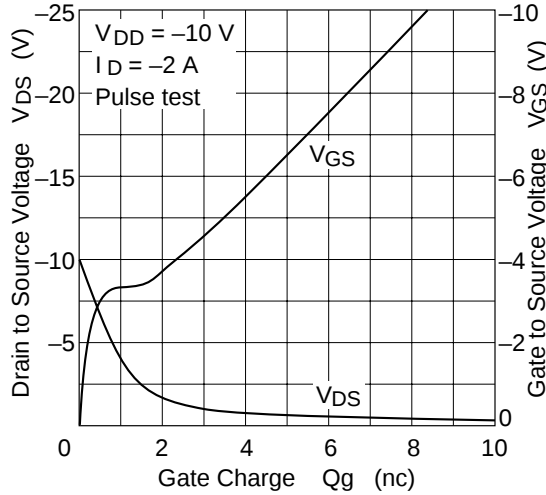
Reverse Recovery Time vs.
Reverse Drain Current



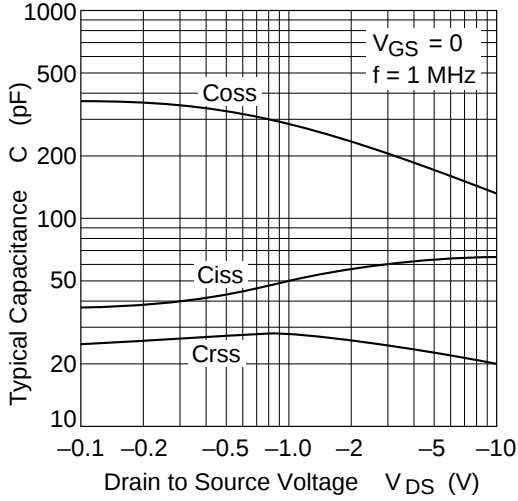
Switching Time vs. Drain Current

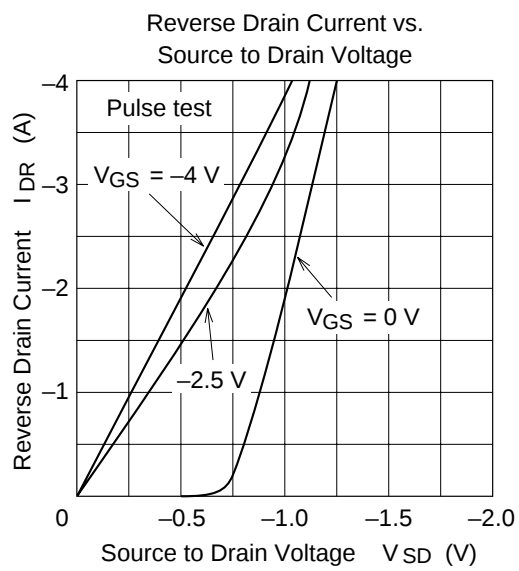


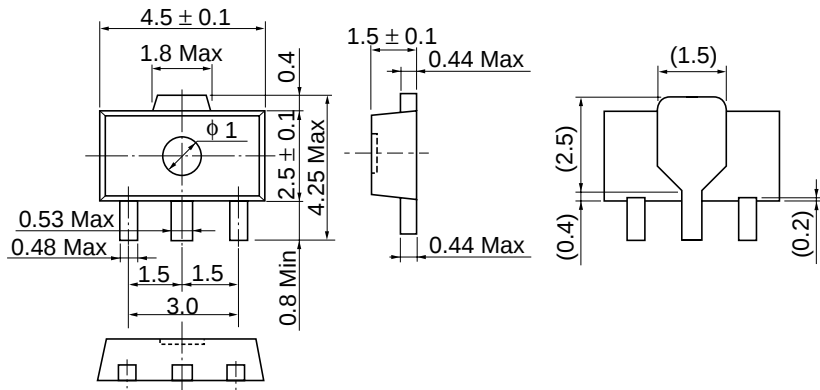
Dynamic Input Characteristics



Typical Capacitance vs.
Drain to Source Voltage







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

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