To all our customers

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Renesas Technology Corp.
Customer Support Dept.
April 1, 2003

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Keep safety first in your circuit designs!

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   Remember to give due consideration to safety when making your circuit designs, with appropriate measures such as (i) placement of substitutive, auxiliary circuits, (ii) use of nonflammable material or (iii) prevention against any malfunction or mishap.

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2SJ317

Silicon P-Channel MOS FET

ADE-208-1191 (Z)
1st. Edition
Mar. 2001

Application

High speed power switching

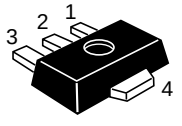
Low voltage operation

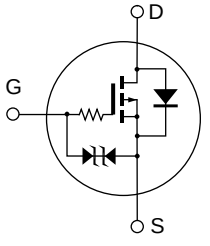
Features

- 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

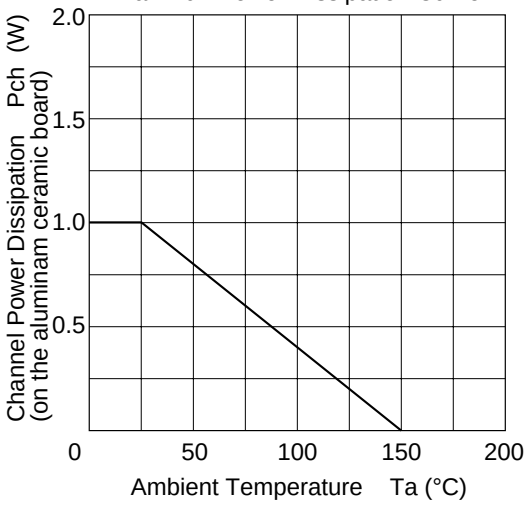
Notes: 1. PW ≤ 100 µs, duty cycle ≤ 10%
2. Value on the alumina ceramic board (12.5×20×0.7 mm).
3. Marking is “NY”.

Electrical Characteristics (Ta = 25°C)

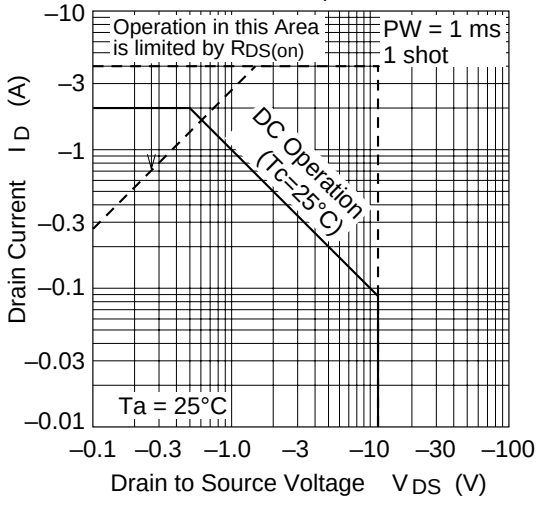
Item	Symbol	Min	Typ	Max	Unit	Test conditions
Drain to source breakdown voltage	$V_{(BR)DSS}$	–12	—	—	V	I_D = –1 mA, V_{GS} = 0
Gate to source breakdown voltage	$V_{(BR)GSS}$	±7	—	—	V	I_G = ±10 µA, V_{DS} = 0
Gate to source cutoff current	I_{GSS}	—	—	±5	µA	V_{GS} = ±6.5 V, V_{DS} = 0
Zero gate voltage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

Note: 1. Pulse test

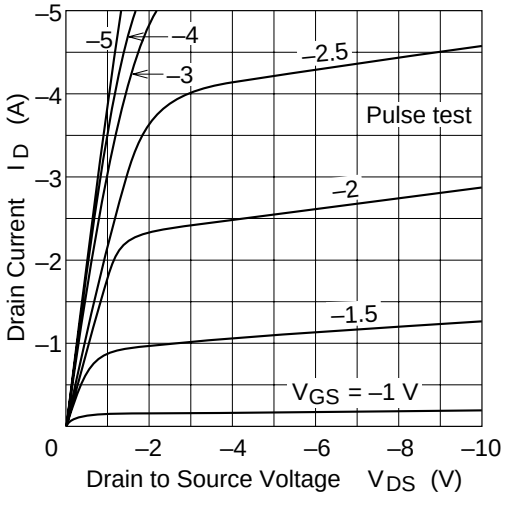
Maximun Power Dissipation Curve



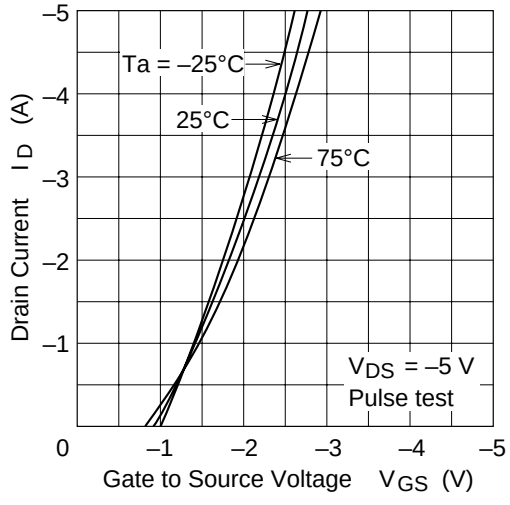
Maximun Safe Operation Area



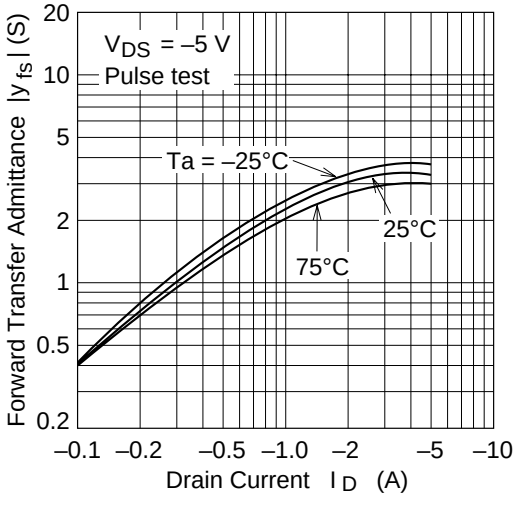
Typical Output Characteristics



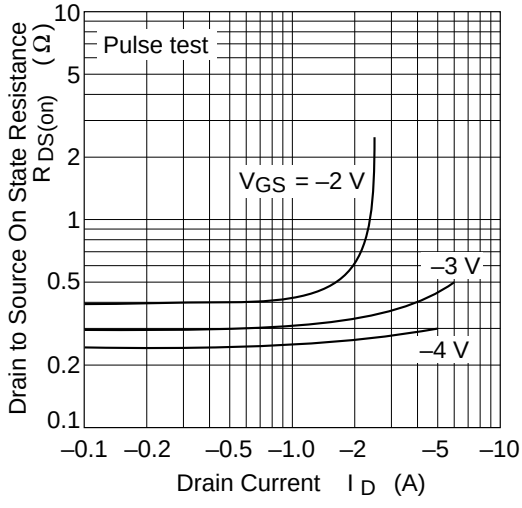
Typical Forward Transfer Characteristics



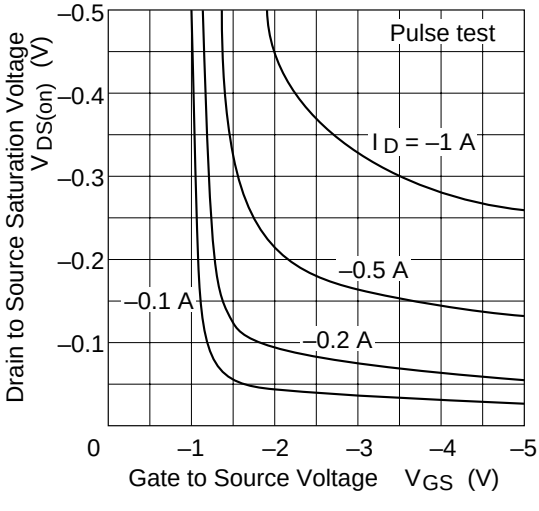
Forward Transfer Admittance vs. Drain Current



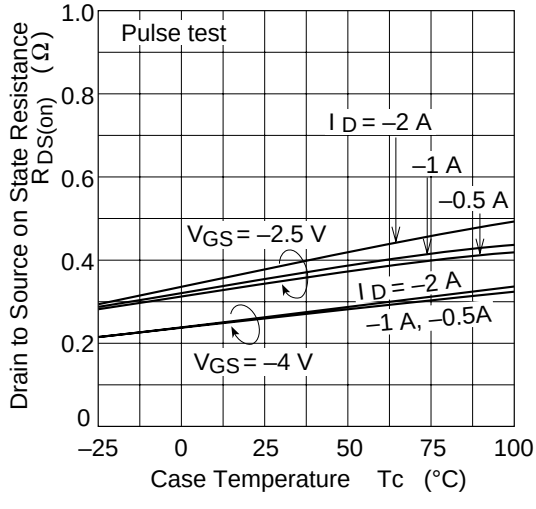
Drain to Source on State Resistance vs. Drain Current



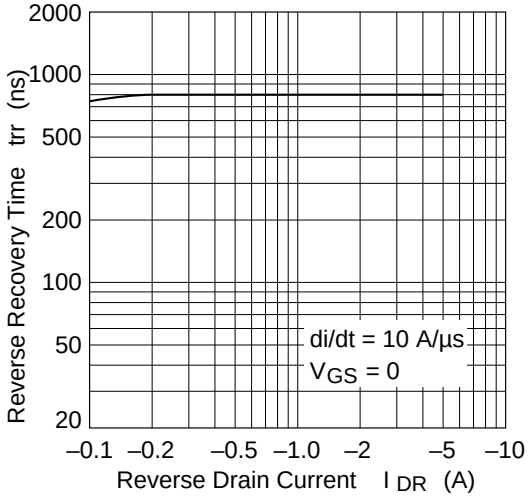
Drain to Source Saturation Voltage vs. Gate to Source Voltage



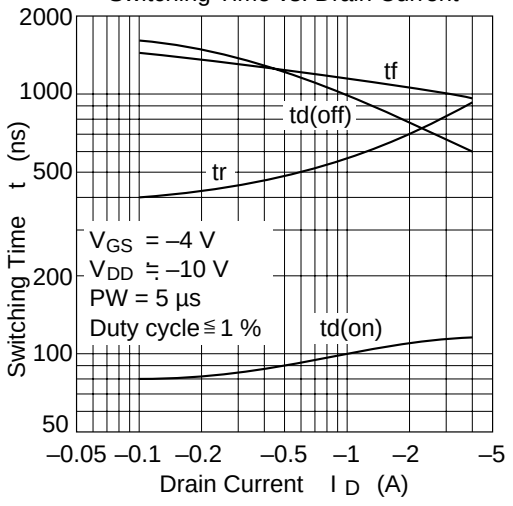
Drain to Source on State Resintance vs. Case Temperature



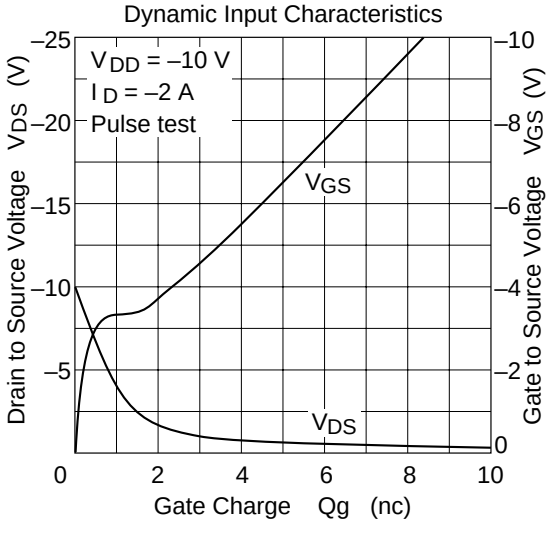
Reverse Recovery Time vs.
Reverse Drain Current



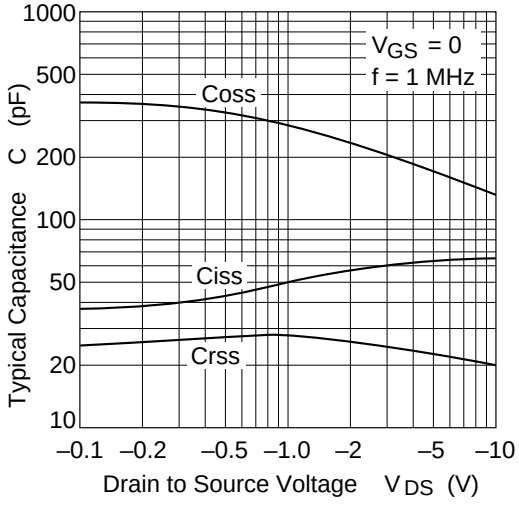
Switching Time vs. Drain Current

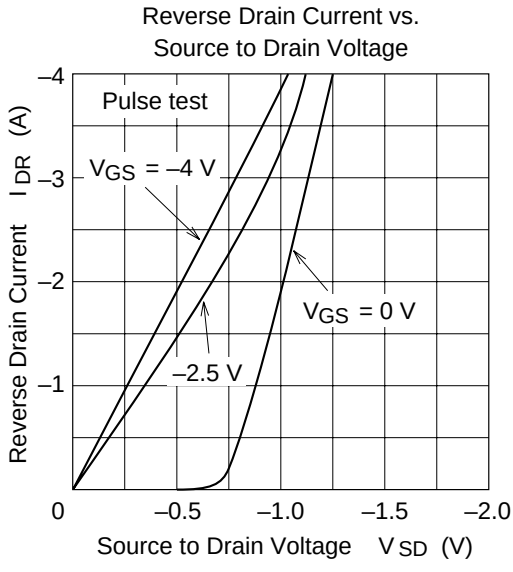


Dynamic Input Characteristics



Typical Capacitance vs.
Drain to Source Voltage

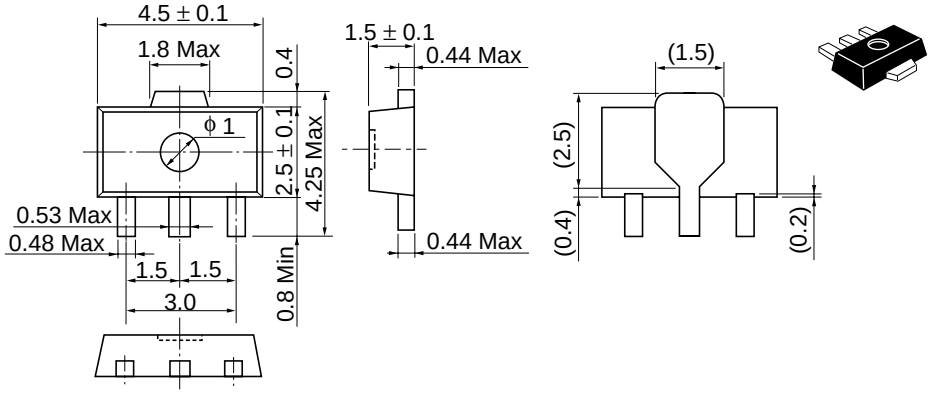



Reverse Drain Current vs.
Source to Drain Voltage
Pulse test
VGS = –4 V
–2.5 V
VGS = 0 V
Reverse Drain Current IDR (A)
Source to Drain Voltage VSD (V)
–4
–3
–2
–1
0
–0.5
–1.0
–1.5
–2.0

Package Dimensions

As of January, 2001

Unit: mm



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

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