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Old Company Name in Catalogs and Other Documents

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Renesas Electronics website: <http://www.renesas.com>

April 1st, 2010
Renesas Electronics Corporation

Issued by: Renesas Electronics Corporation (<http://www.renesas.com>)

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EOL announced Product

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H5N2901FN

Silicon N Channel MOS FET
High Speed Power Switching

REJ03G0372-0100Z

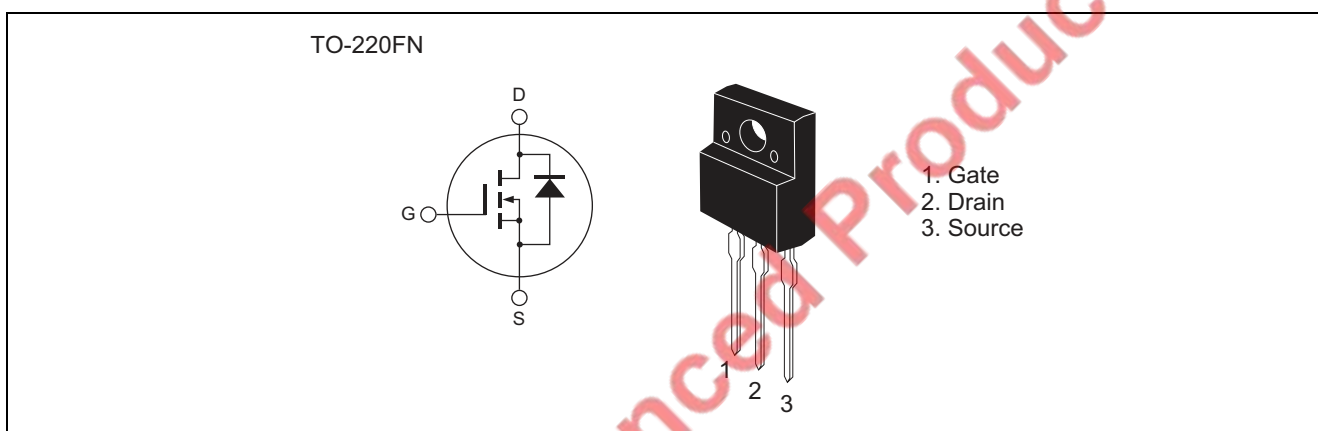
Rev.1.00

May.28.2004

Features

- Low on-resistance
- Low leakage current
- High speed switching

Outline



Absolute Maximum Ratings

(Ta = 25°C)

Item	Symbol	Ratings	Unit
Drain to Source voltage	V_{DSS}	290	V
Gate to Source voltage	V_{GSS}	±30	V
Drain current	I_D	18	A
Drain peak current	$I_{D(pulse)}$ ^{Note1}	72	A
Body-Drain diode reverse Drain current	I_{DR}	18	A
Body-Drain diode reverse Drain peak current	$I_{DR(pulse)}$ ^{Note1}	72	A
Avalanche current	I_{AP} ^{Note3}	6	A
Avalanche energy	E_{AR} ^{Note3}	2.1	mJ
Channel dissipation	P_{ch} ^{Note2}	30	W
Channel to case thermal impedance	θ_{ch-c}	4.17	°C/W
Channel temperature	T_{ch}	150	°C
Storage temperature	T_{stg}	-55 to +150	°C

Notes: 1. $PW \leq 10 \mu s$, duty cycle $\leq 1\%$

2. Value at $T_c = 25^\circ C$

3. $STch = 25^\circ C$, $T_{ch} \leq 150^\circ C$

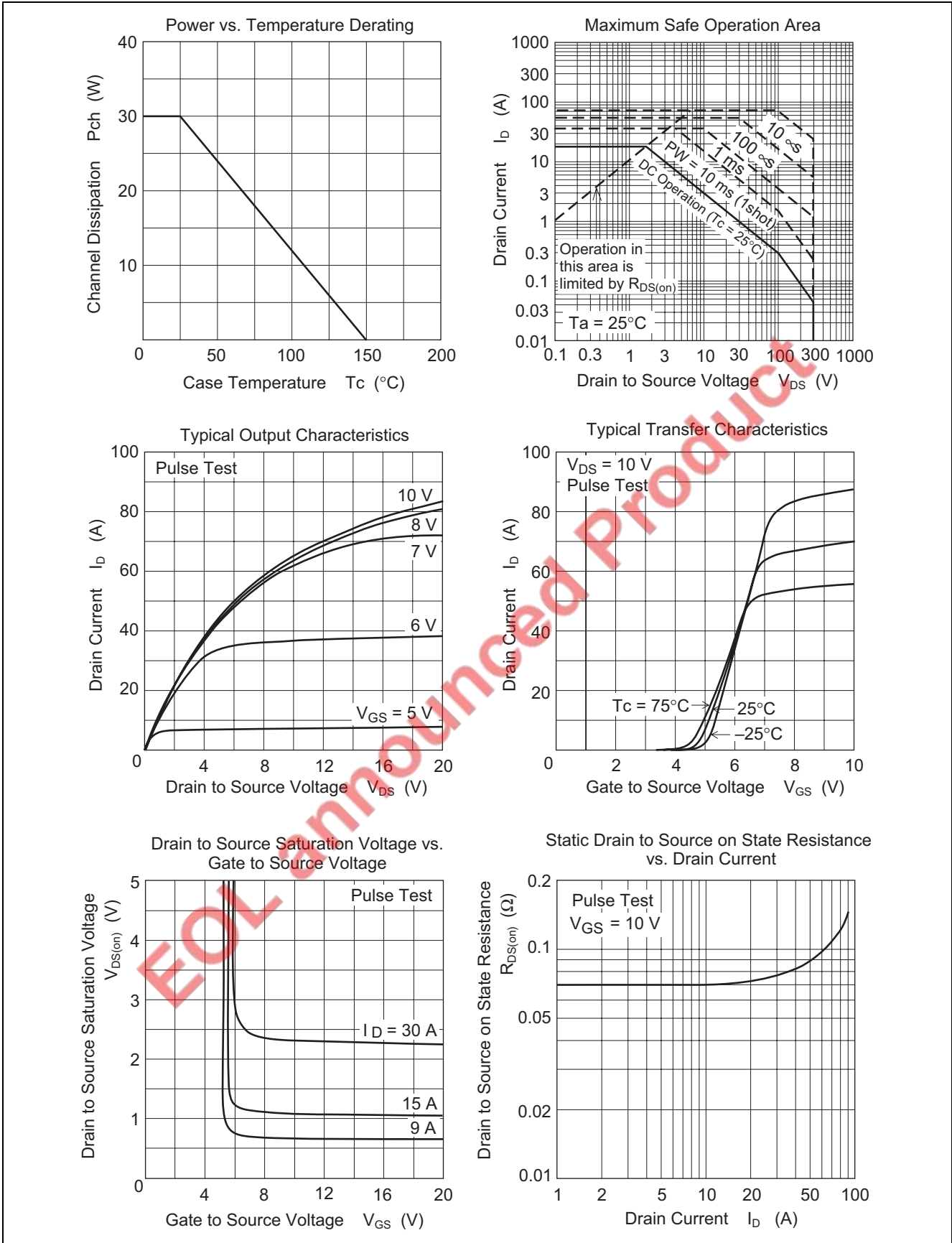
Electrical Characteristics

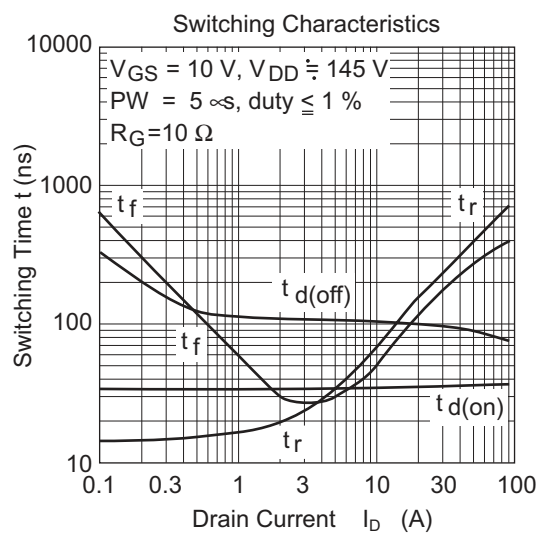
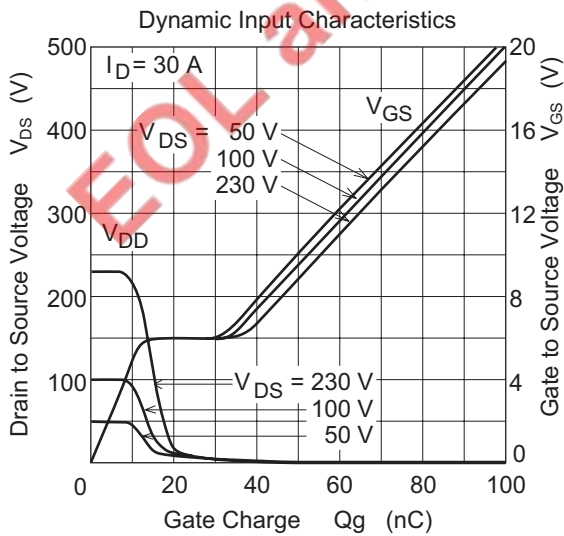
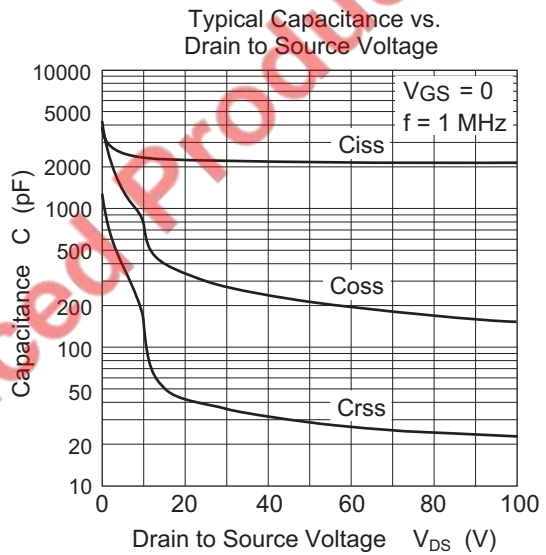
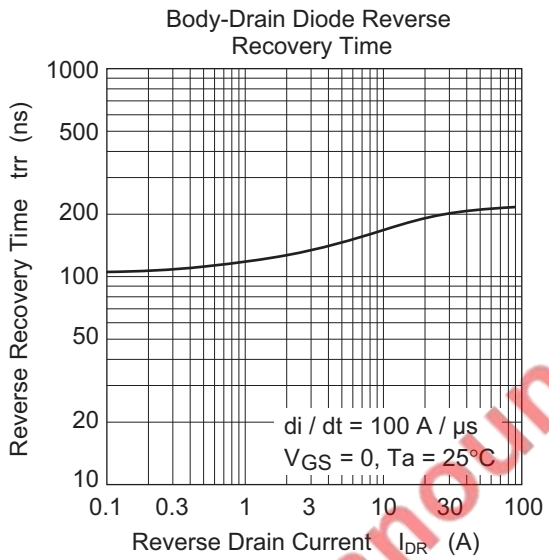
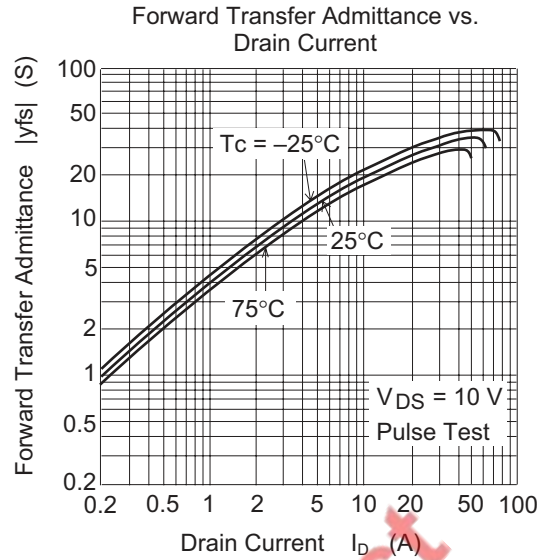
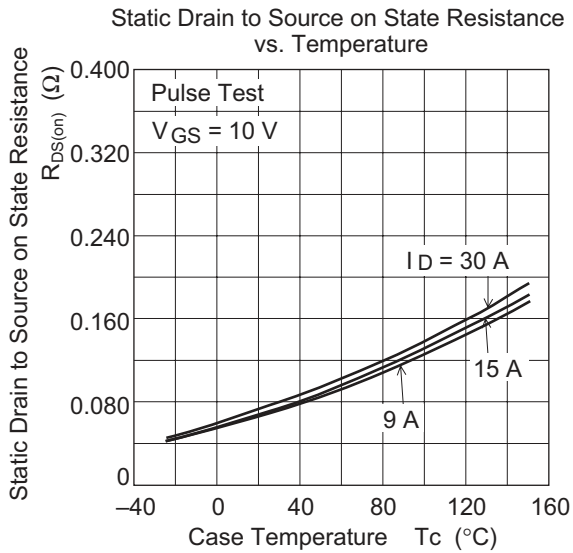
(Ta = 25°C)

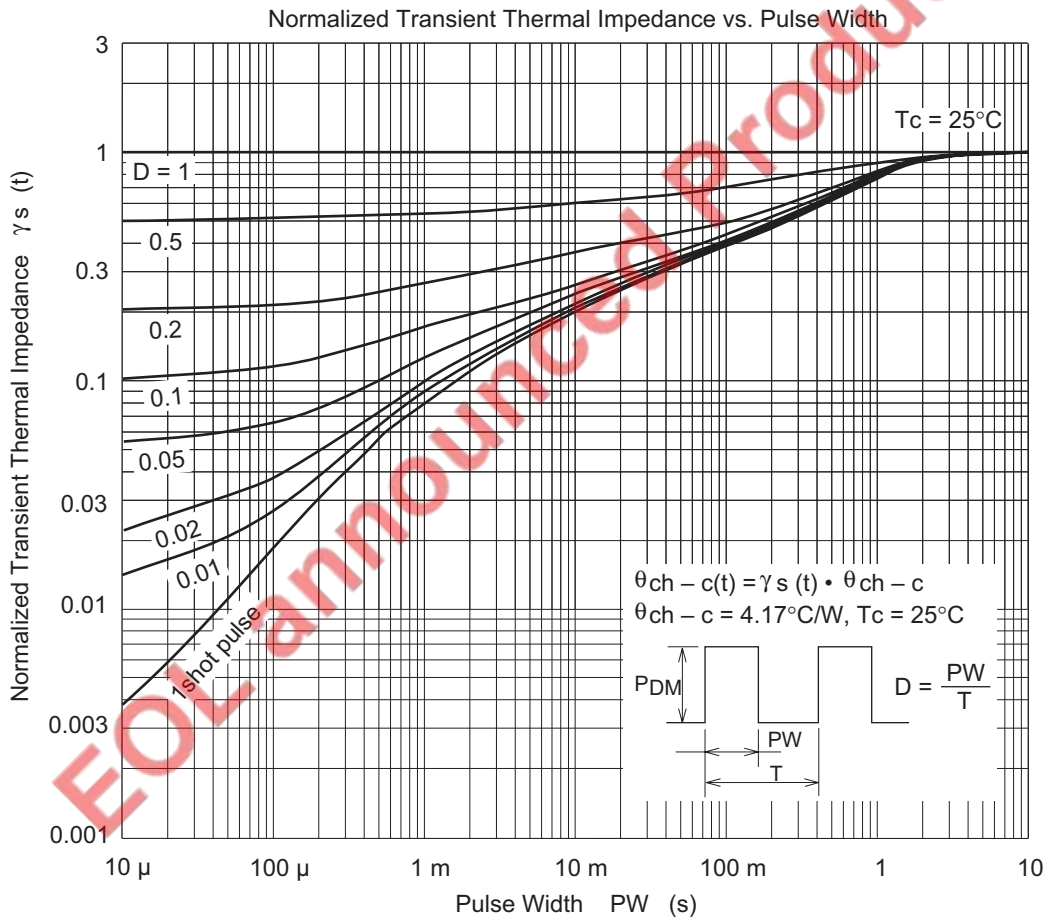
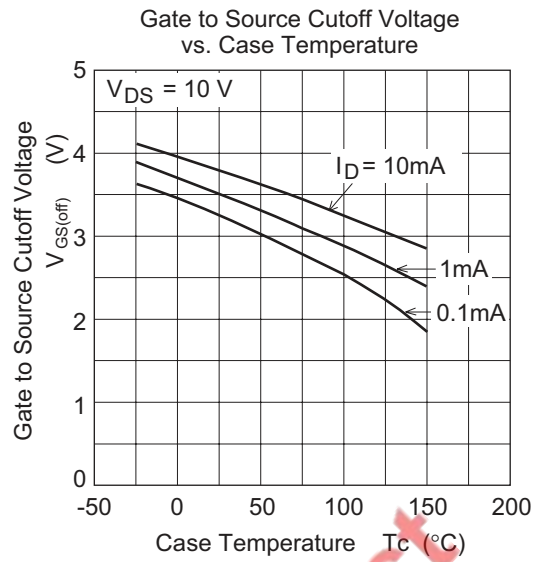
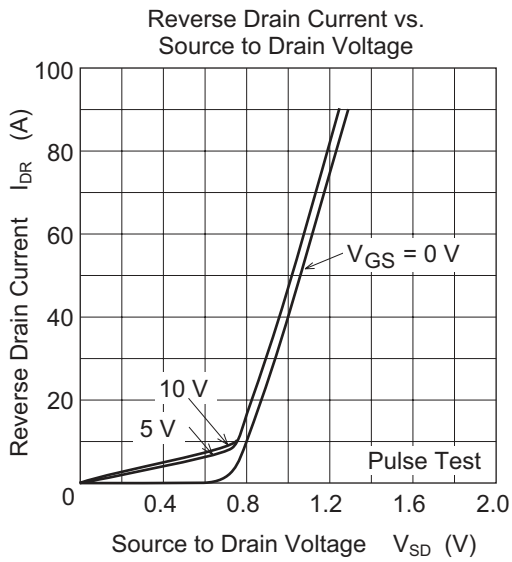
Item	Symbol	Min	Typ	Max	Unit	Test conditions
Drain to Source breakdown voltage	$V_{(BR)DSS}$	290	—	—	V	$I_D = 10 \text{ mA}$, $V_{GS} = 0$
Zero Gate voltage drain current	I_{DSS}	—	—	1	∞ A	$V_{DS} = 290 \text{ V}$, $V_{GS} = 0$
Gate to Source leak current	I_{GSS}	—	—	± 0.1	∞ A	$V_{GS} = \pm 30 \text{ V}$, $V_{DS} = 0$
Gate to Source cutoff voltage	$V_{GS(off)}$	3.0	—	4.0	V	$V_{DS} = 10 \text{ V}$, $I_D = 1 \text{ mA}$
Forward transfer admittance	$ y_{fs} $	10	18	—	S	$I_D = 9 \text{ A}$, $V_{DS} = 10 \text{ V}$ ^{Note4}
Static Drain to Source on state resistance	$R_{DS(on)}$	—	0.070	0.091	Ω	$I_D = 9 \text{ A}$, $V_{GS} = 10 \text{ V}$ ^{Note4}
Input capacitance	C_{iss}	—	2200	—	pF	$V_{DS} = 25 \text{ V}$
Output capacitance	C_{oss}	—	300	—	pF	$V_{GS} = 0$
Reverse transfer capacitance	C_{rss}	—	38	—	pF	$f = 1 \text{ MHz}$
Turn-on delay time	$t_{d(on)}$	—	35	—	ns	$I_D = 9 \text{ A}$
Rise time	t_r	—	60	—	ns	$V_{GS} = 10 \text{ V}$
Turn-off delay time	$t_{d(off)}$	—	110	—	ns	$R_L = 16.1 \Omega$
Fall time	t_f	—	45	—	ns	$R_g = 10 \Omega$
Total Gate charge	Q_g	—	56	—	nC	$V_{DD} = 230 \text{ V}$
Gate to Source charge	Q_{gs}	—	13	—	nC	$V_{GS} = 10 \text{ V}$
Gate to Drain charge	Q_{gd}	—	26	—	nC	$I_D = 18 \text{ A}$
Body-Drain diode forward voltage	V_{DF}	—	0.9	1.5	V	$I_F = 18 \text{ A}$, $V_{GS} = 0$ ^{Note4}
Body-Drain diode reverse recovery time	t_{rr}	—	190	—	ns	$I_F = 18 \text{ A}$, $V_{GS} = 0$
Body-Drain diode reverse recovery charge	Q_{rr}	—	1.3	—	∞ C	$diF/dt = 100 \text{ A}/\infty\text{s}$

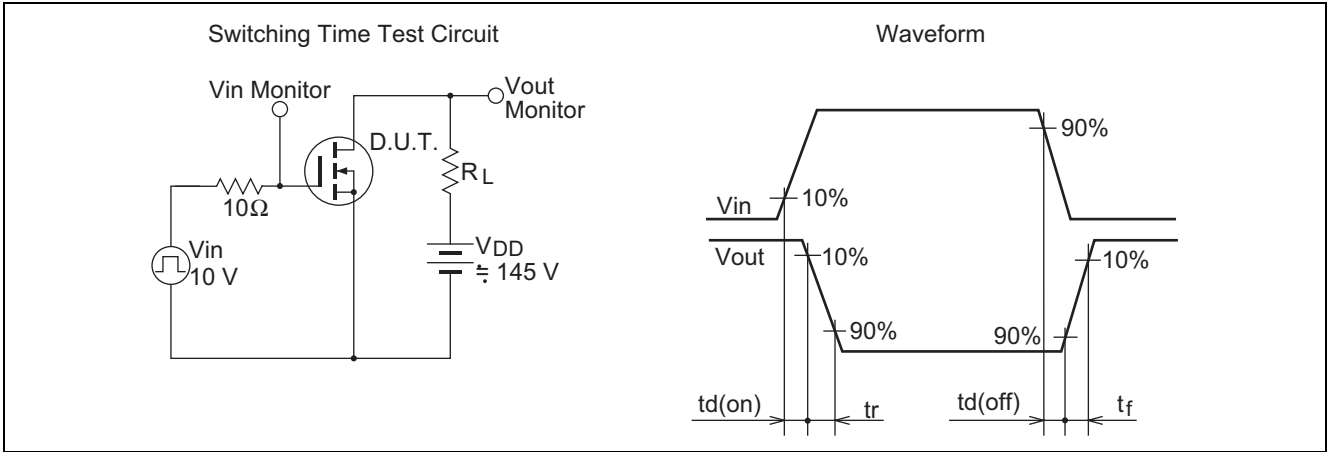
Notes: 4. Pulse test

Main Characteristics









EOL announced Product

Package Dimensions

TO-220FN

EIAJ Package Code	JEDEC Code	Mass (g) (reference value)	Lead Material
—	—	2.0	Cu alloy

Note 1) The dimensional figures indicate representative values unless otherwise the tolerance is specified.

Symbol	Dimension in Millimeters		
	Min	Typ	Max
A	—	—	—
A ₁	—	—	—
A ₂	—	—	—
b	—	—	—
D	—	—	—
E	—	—	—
e	—	—	—
x	—	—	—
y	—	—	—
y ₁	—	—	—
ZD	—	—	—
ZE	—	—	—

Ordering Information

Part Name	Quantity	Shipping Container
H5N2901FN-E	50 pcs	Plastic magazine

Note: For some grades, production may be terminated. Please contact the Renesas sales office to check the state of production before ordering the product.

Renesas Technology Corp. Sales Strategic Planning Div. Nippon Bldg., 2-6-2, Ohte-machi, Chiyoda-ku, Tokyo 100-0004, Japan

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Renesas Technology America, Inc.
450 Holger Way, San Jose, CA 95134-1368, U.S.A
Tel: <1> (408) 382-7500, Fax: <1> (408) 382-7501

Renesas Technology Europe Limited
Dukes Meadow, Millboard Road, Bourne End, Buckinghamshire, SL8 5FH, U.K.
Tel: <44> (1628) 585-100, Fax: <44> (1628) 585-900

Renesas Technology Hong Kong Ltd.
7th Floor, North Tower, World Finance Centre, Harbour City, 1 Canton Road, Tsimshatsui, Kowloon, Hong Kong
Tel: <852> 2265-6688, Fax: <852> 2730-6071

Renesas Technology Taiwan Co., Ltd.
10th Floor, No.99, Fushing North Road, Taipei, Taiwan
Tel: <886> (2) 2715-2888, Fax: <886> (2) 2713-2999

Renesas Technology (Shanghai) Co., Ltd.
Unit2607 Ruijing Building, No.205 Maoming Road (S), Shanghai 200020, China
Tel: <86> (21) 6472-1001, Fax: <86> (21) 6415-2952

Renesas Technology Singapore Pte. Ltd.
1 Harbour Front Avenue, #06-10, Keppel Bay Tower, Singapore 098632
Tel: <65> 6213-0200, Fax: <65> 6278-8001