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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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H5N2515P

Silicon N Channel MOS FET
High Speed Power Switching

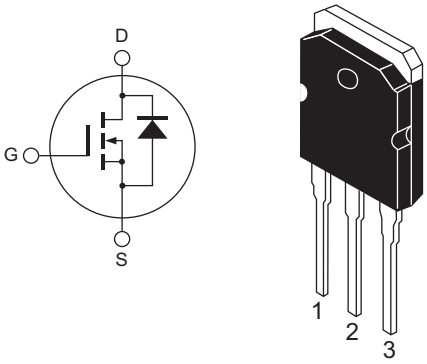
REJ03G0413-0100
Rev.1.00
Sep.28.2004

Features

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

Outline

TO-3P



1. Gate
2. Drain (Flange)
3. Source

Absolute Maximum Ratings

(Ta = 25°C)

Item	Symbol	Ratings	Unit
Drain to Source voltage	V_{DSS}	250	V
Gate to Source voltage	V_{GSS}	±30	V
Drain current	I_D	55	A
Drain peak current	$I_{D\ (pulse)}^{Note1}$	165	A
Body-Drain diode reverse Drain current	I_{DR}	55	A
Body-Drain diode reverse Drain peak current	$I_{DR\ (pulse)}^{Note1}$	165	A
Avalanche current	I_{AP}^{Note3}	19	A
Avalanche energy	E_{AR}^{Note3}	22.5	mJ
Channel dissipation	Pch^{Note2}	200	W
Channel to case thermal impedance	θch-c	0.625	°C/W
Channel temperature	Tch	150	°C
Storage temperature	Tstg	–55 to +150	°C

Notes: 1. PW ≤ 10 µs, duty cycle ≤ 1%
2. Value at Tc = 25°C
3. STch = 25°C, Tch ≤ 150°C

Electrical Characteristics

(Ta = 25°C)

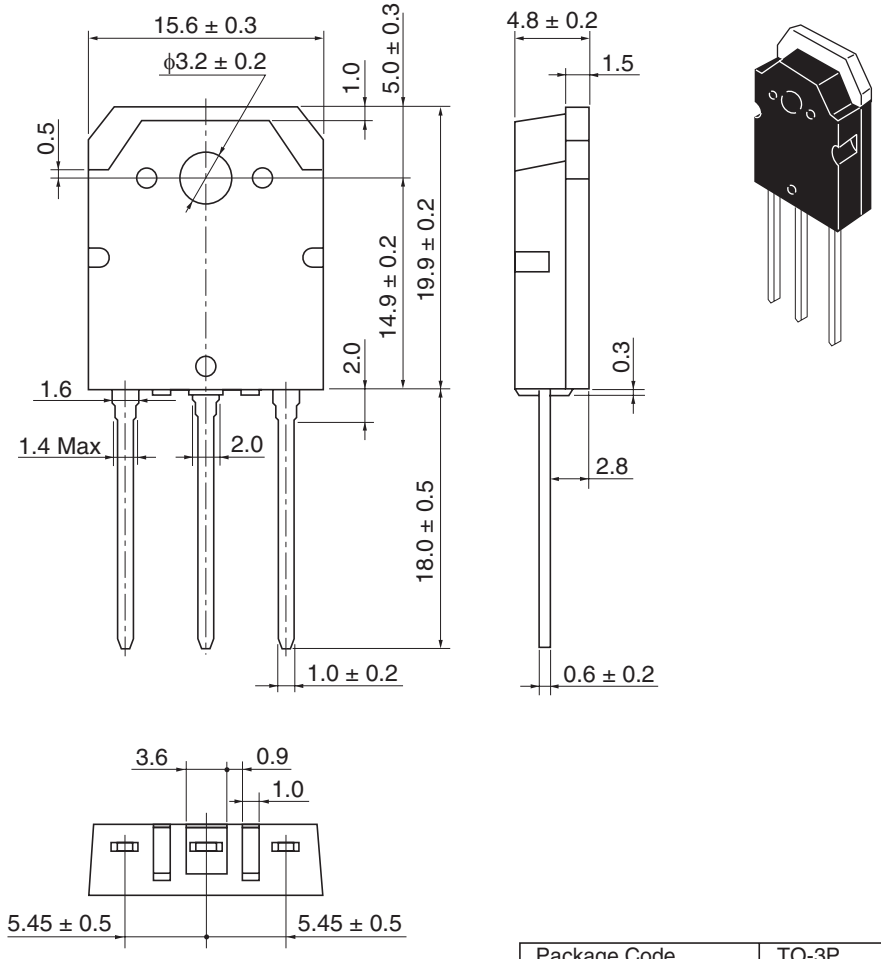
Item	Symbol	Min	Typ	Max	Unit	Test conditions
Drain to Source breakdown voltage	$V_{(BR)DSS}$	250	—	—	V	I_D = 10 mA, V_{GS} = 0
Zero Gate voltage Drain current	I_{DSS}	—	—	1	µA	V_{DS} = 250 V, V_{GS} = 0
Gate to Source leak current	I_{GSS}	—	—	±0.1	µA	V_{GS} = ±30 V, V_{DS} = 0
Gate to Source cutoff voltage	$V_{GS(off)}$	3.0	—	4.5	V	V_{DS} = 10 V, I_D = 1 mA
Forward transfer admittance	|yfs|	23	39	—	S	I_D = 27.5 A, V_{DS} = 10 V Note4
Static Drain to Source on state resistance	$R_{DS(on)}$	—	0.039	0.044	Ω	I_D = 27.5 A, V_{GS} = 10 V Note4
Input capacitance	Ciss	—	3800	—	pF	V_{DS} = 25 V V_{GS} = 0 f = 1 MHz
Output capacitance	Coss	—	530	—	pF	
Reverse transfer capacitance	Crss	—	56	—	pF	
Turn-on delay time	$t_{d(on)}$	—	50	—	ns	I_D = 27.5 A V_{GS} = 10 V R_L = 4.55 Ω Rg = 10 Ω
Rise time	t_r	—	240	—	ns	
Turn-off delay time	$t_{d(off)}$	—	170	—	ns	
Fall time	t_f	—	170	—	ns	
Total Gate charge	Qg	—	92	—	nC	V_{DD} = 200 V V_{GS} = 10 V I_D = 55 A
Gate to Source charge	Qgs	—	24	—	nC	
Gate to Drain charge	Qgd	—	38	—	nC	
Body-Drain diode forward voltage	V_{DF}	—	1.03	1.60	V	I_F = 55 A, V_{GS} = 0 Note4
Body-Drain diode reverse recovery time	trr	—	200	—	ns	I_F = 55 A, V_{GS} = 0 diF/dt = 100 A/µs
Body-Drain diode reverse recovery charge	Qrr	—	1.4	—	µC	

Notes: 4. Pulse test

Package Dimensions

As of January, 2003

Unit: mm



Package Code	TO-3P
JEDEC	—
JEITA	Conforms
Mass (reference value)	5.0 g

Ordering Information

Part Name	Quantity	Shipping Container
H5N2515P-E	30 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.

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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

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