To our customers,

Old Company Name in Catalogs and Other Documents

On April 1st, 2010, NEC Electronics Corporation merged with Renesas Technology Corporation, and Renesas Electronics Corporation took over all the business of both companies. Therefore, although the old company name remains in this document, it is a valid Renesas Electronics document. We appreciate your understanding.

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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H5N2512CF

Silicon N Channel MOS FET
High Speed Power Switching

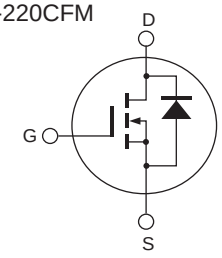
REJ03G0481-0100
Rev.1.00
Nov.26.2004

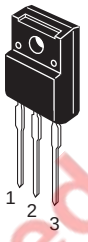
Features

- Low on-resistance
- Low leakage current
- High Speed Switching
- Built-in fast recovery diode

Outline

TO-220CFM





1. Gate
2. Drain
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	18	A
Drain peak current	$I_{D(pulse)}$ Note 1	72	A
Body-drain diode reverse drain current	I_{DR}	18	A
Body-drain diode reverse drain peak current	$I_{DR(pulse)}$ Note 1	72	A
Avalanche current	I_{AP} Note 3	18	A
Channel dissipation	Pch Note 2	35	W
Channel to case Thermal Impedance	θch-c	3.57	°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. Tch ≤ 150°C

Electrical Characteristics

(Ta = 25°C)

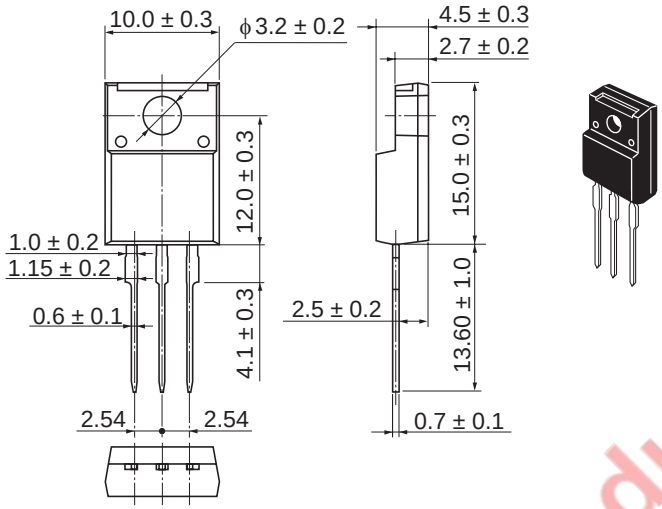
Item	Symbol	Min	Typ	Max	Unit	Test Conditions
Drain to source breakdown voltage	$V_{(BR)DSS}$	250	—	—	V	I_D = 10 mA, V_{GS} = 0
Gate to source leak current	I_{GSS}	—	—	±0.1	µA	V_{GS} = ±30 V, V_{DS} = 0
Zero gate voltage drain current	I_{DSS}	—	—	10	µA	V_{DS} = 250 V, V_{GS} = 0
Gate to source cutoff voltage	$V_{GS(off)}$	1.5	—	4.0	V	I_D = 1 mA, V_{DS} = 10 V
Static drain to source on state resistance	$R_{DS(on)}$	—	0.082	0.105	Ω	I_D = 9 A, V_{GS} = 10 V Note 4
Forward transfer admittance	$\|y_{fs}\|$	9	16	—	S	I_D = 9 A, V_{DS} = 10 V Note 4
Input capacitance	Ciss	—	2200	—	pF	V_{DS} = 25 V V_{GS} = 0 f = 1MHz
Output capacitance	Coss	—	300	—	pF	
Reverse transfer capacitance	Crss	—	85	—	pF	
Turn-on delay time	$t_{d(on)}$	—	32	—	ns	I_D = 9 A R_L = 13.9 Ω V_{GS} = 10 V R_g = 10 Ω
Rise time	t_r	—	60	—	ns	
Turn-off delay time	$t_{d(off)}$	—	160	—	ns	
Fall time	t_f	—	60	—	ns	
Total gate charge	Qg	—	81	—	nC	V_{DD} = 200 V V_{GS} = 10 V I_D = 18 A
Gate to source charge	Qgs	—	10	—	nC	
Gate to drain charge	Qgd	—	38	—	nC	
Body–drain diode forward voltage	V_{DF}	—	0.9	1.4	V	I_F = 18 A, V_{GS} = 0 Note4
Body–drain diode reverse recovery time	t_{rr}	—	110	—	ns	I_F = 18 A, V_{GS} = 0 diF/ dt = 100 A/µs
Body–drain diode reverse recovery time	Qrr	—	0.39	—	µC	

Notes: 4. Pulse test

Package Dimensions

As of January, 2003

Unit: mm



Package Code	TO-220CFM
JEDEC	—
JEITA	—
Mass (reference value)	1.9 g

Ordering Information

Part Name	Quantity	Shipping Container
H5N3007CF	50	Stick

Note: Therefore especially small contact area of terminal, miss contact may occur if inadequate soldering condition is applied.
Contact Renesas sales office for any question regarding recommended soldering condition of Renesas.

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RENESAS SALES OFFICES

http://www.renesas.com

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