H5N2502CF

Silicon N Channel MOS FET
High Speed Power Switching

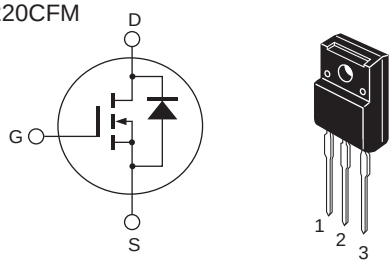
REJ03G0480-0100
Rev.1.00
Nov.26.2004

Features

- Low on-resistance
- Low leakage current
- High Speed Switching

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

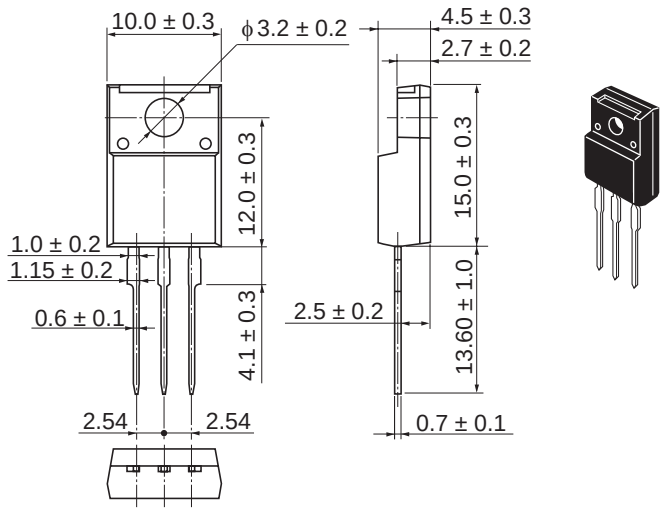
(Ta = 25°C)

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}	—	—	1	µA	V_{DS} = 250 V, V_{GS} = 0
Gate to source cutoff voltage	$V_{GS(off)}$	3.0	—	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	$\|y_{fs}\|$	10	17	—	S	I_D = 9 A, V_{DS} = 10 V Note 4
Input capacitance	Ciss	—	2300	—	pF	V_{DS} = 25 V V_{GS} = 0 f = 1MHz
Output capacitance	Coss	—	290	—	pF	
Reverse transfer capacitance	Crss	—	80	—	pF	
Turn-on delay time	$t_{d(on)}$	—	40	—	ns	I_D = 9 A R_L = 13.9 Ω V_{GS} = 10 V R_g = 10 Ω
Rise time	t_r	—	65	—	ns	
Turn-off delay time	$t_{d(off)}$	—	140	—	ns	
Fall time	t_f	—	40	—	ns	
Total gate charge	Qg	—	75	—	nC	V_{DD} = 200 V V_{GS} = 10 V I_D = 18 A
Gate to source charge	Qgs	—	12	—	nC	
Gate to drain charge	Qgd	—	38	—	nC	
Body–drain diode forward voltage	V_{DF}	—	0.85	1.3	V	I_F = 18 A, V_{GS} = 0 Note4
Body–drain diode reverse recovery time	t_{rr}	—	200	—	ns	I_F = 18 A, V_{GS} = 0 diF/ dt = 100 A/µs
Body–drain diode reverse recovery time	Qrr	—	1.4	—	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
H5N2502CF	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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