

To our customers,

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## Old Company Name in Catalogs and Other Documents

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

April 1<sup>st</sup>, 2010  
Renesas Electronics Corporation

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

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EOL announced Product

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## H7N0308CF

Silicon N Channel MOS FET  
High Speed Power Switching

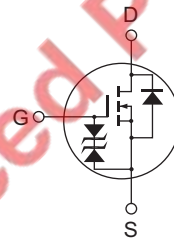
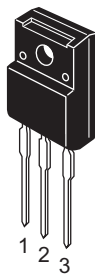
REJ03G1123-0300  
(Previous: ADE-208-1570A)  
Rev.3.00  
Sep 07, 2005

### Features

- Low on-resistance  
 $R_{DS(on)} = 3.8 \text{ m}\Omega$  typ.
- Low drive current
- 4.5 V gate drive device can be driven from 5 V source

### Outline

RENESAS Package code: PRSS0003AE-A  
(Package name: TO-220C\*FM)



1. Gate
2. Drain
3. Source

## Absolute Maximum Ratings

(Ta = 25°C)

Item	Symbol	Value	Unit
Drain to source voltage	V <sub>DSS</sub>	30	V
Gate to source voltage	V <sub>GSS</sub>	±20	V
Drain current	I <sub>D</sub>	60	A
Drain peak current	I <sub>D (pulse)</sub> <sup>Note 1</sup>	240	A
Body-drain diode reverse drain current	I <sub>DR</sub>	60	A
Channel dissipation	P <sub>ch</sub> <sup>Note 2</sup>	30	W
Channel to case thermal impedance	θ <sub>ch-c</sub>	4.17	°C/W
Channel to ambient thermal impedance	θ <sub>ch-a</sub>	62.5	°C/W
Channel temperature	T <sub>ch</sub>	150	°C
Storage temperature	T <sub>stg</sub>	-55 to +150	°C

Notes: 1. PW ≤ 10 μs, duty cycle ≤ 1%

2. Value at Tc = 25°C

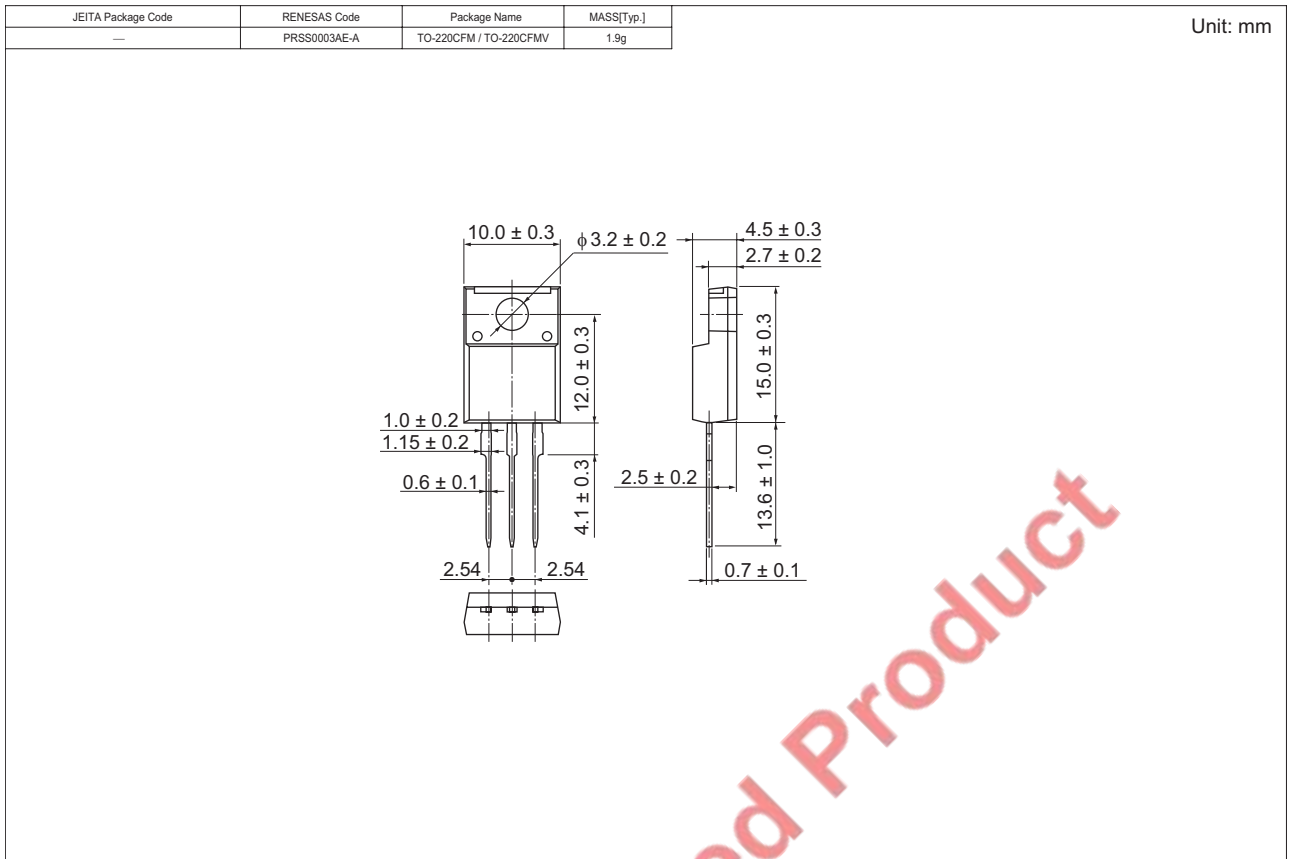
## Electrical Characteristics

(Ta = 25°C)

Item	Symbol	Min	Typ	Max	Unit	Test Conditions
Drain to source breakdown voltage	V <sub>(BR)DSS</sub>	30	—	—	V	I <sub>D</sub> = 10 mA, V <sub>GS</sub> = 0
Gate to source breakdown voltage	V <sub>(BR)GSS</sub>	±20	—	—	V	I <sub>G</sub> = ±100 μA, V <sub>DS</sub> = 0
Gate to source leak current	I <sub>GSS</sub>	—	—	±10	μA	V <sub>GS</sub> = ±16 V, V <sub>DS</sub> = 0
Zero gate voltage drain current	I <sub>DSS</sub>	—	—	10	μA	V <sub>DS</sub> = 30 V, V <sub>GS</sub> = 0
Gate to source cutoff voltage	V <sub>GS(off)</sub>	1.0	—	2.5	V	I <sub>D</sub> = 1 mA, V <sub>DS</sub> = 10 V <sup>Note 3</sup>
Static drain to source on state resistance	R <sub>DS(on)</sub>	—	3.8	4.8	mΩ	I <sub>D</sub> = 30 A, V <sub>GS</sub> = 10 V <sup>Note 3</sup>
		—	6.0	8.5	mΩ	I <sub>D</sub> = 30 A, V <sub>GS</sub> = 4.5 V <sup>Note 3</sup>
Forward transfer admittance	y <sub>fs</sub>	42	70	—	S	I <sub>D</sub> = 30 A, V <sub>DS</sub> = 10 V <sup>Note 3</sup>
Input capacitance	C <sub>iss</sub>	—	3350	—	pF	V <sub>DS</sub> = 10 V
Output capacitance	C <sub>oss</sub>	—	840	—	pF	V <sub>GS</sub> = 0
Reverse transfer capacitance	C <sub>rss</sub>	—	480	—	pF	f = 1 MHz
Total gate charge	Q <sub>g</sub>	—	52	—	nC	V <sub>DD</sub> = 10 V
Gate to source charge	Q <sub>gs</sub>	—	11	—	nC	V <sub>GS</sub> = 10 V
Gate to drain charge	Q <sub>gd</sub>	—	10	—	nC	I <sub>D</sub> = 60 A
Turn-on delay time	t <sub>d(on)</sub>	—	30	—	ns	V <sub>GS</sub> = 10 V, I <sub>D</sub> = 30 A
Rise time	t <sub>r</sub>	—	370	—	ns	R <sub>L</sub> = 0.33 Ω
Turn-off delay time	t <sub>d(off)</sub>	—	80	—	ns	R <sub>g</sub> = 4.7 Ω
Fall time	t <sub>f</sub>	—	27	—	ns	
Body-drain diode forward voltage	V <sub>DF</sub>	—	0.90	—	V	I <sub>F</sub> = 60 A, V <sub>GS</sub> = 0
Body-drain diode reverse recovery time	t <sub>rr</sub>	—	55	—	ns	I <sub>F</sub> = 60 A, V <sub>GS</sub> = 0 di <sub>F</sub> /dt = 50 A/μs

Note: 3. Pulse test

Package Dimensions



Ordering Information

Part Name	Quantity	Shipping Container
H7N0308CF-E	50 pcs	Plastic magazine

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