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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H5N2003P

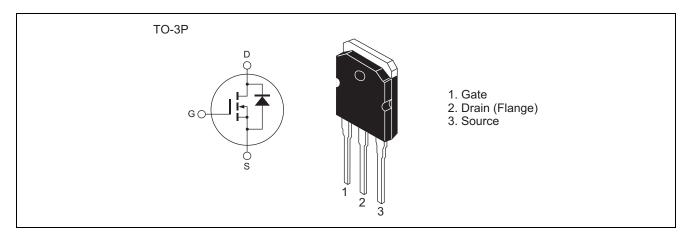
Silicon N Channel MOS FET High Speed Power Switching

REJ03G0235-0100Z Rev.1.00 Apr.09.2004

Features

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

Outline



Absolute Maximum Ratings

 $(Ta = 25^{\circ}C)$

Item	Symbol	Ratings	Unit	
Drain to Source voltage	V_{DSS}	200	V	
Gate to Source voltage	V_{GSS}	±30	V	
Drain current	I _D	60	A	
Drain peak current	I _{D (pulse)} Note1	240	А	
Body-Drain diode reverse Drain current	I _{DR}	60	А	
Body-Drain diode reverse Drain peak current	I _{DR (pulse)} Note1	240	А	
Avalanche current	I _{AP} Note3	40	А	
Channel dissipation	Pch Note2	150	W	
Channel to case thermal impedance	θch-c	0.833	°C/W	
Channel temperature	Tch	150	°C	
Storage temperature	Tstg	-55 to +150	°C	

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

2. Value at Tc = 25°C

3. Tch ≤ 150°C

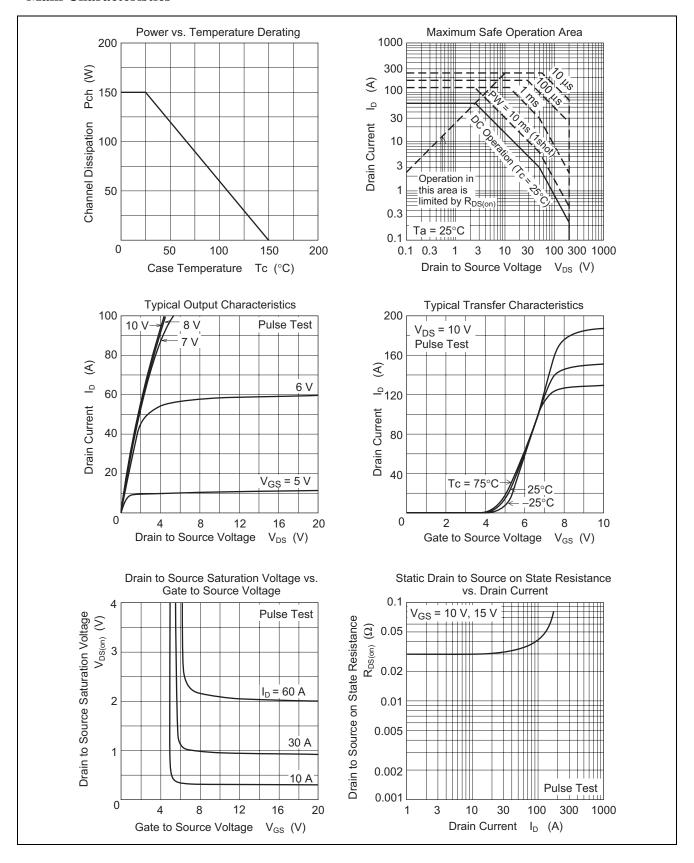
Electrical Characteristics

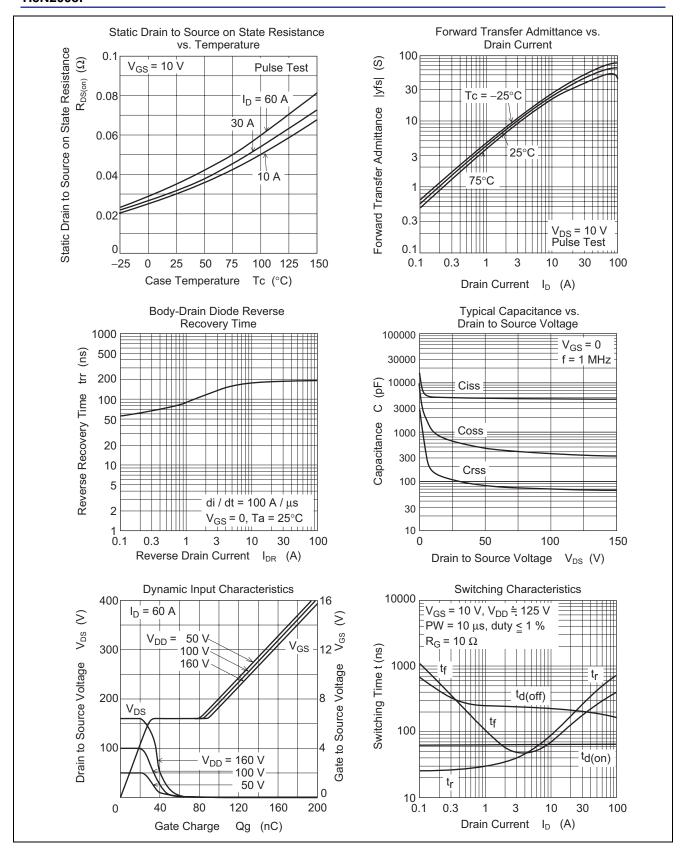
 $(Ta = 25^{\circ}C)$

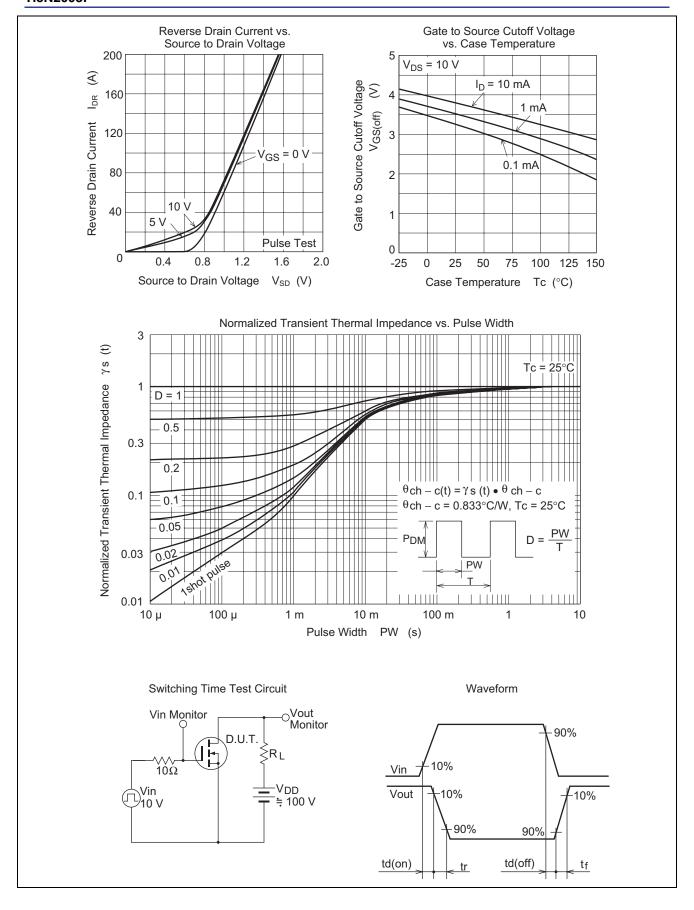
Item	Symbol	Min	Тур	Max	Unit	Test conditions
Drain to Source breakdown voltage	$V_{(BR)DSS}$	200	_	_	V	$I_D = 10 \text{ mA}, V_{GS} = 0$
Zero Gate voltage drain current	I _{DSS}	_	_	1	μΑ	V _{DS} = 200 V, V _{GS} = 0
Gate to Source leak current	I _{GSS}	_	_	±0.1	μΑ	$V_{GS} = \pm 30 \text{ V}, V_{DS} = 0$
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	yfs	26	44	_	S	$I_D = 30 \text{ A}, V_{DS} = 10 \text{ V}^{\text{Note4}}$
Static Drain to Source on state	R _{DS(on)}	_	0.032	0.042	Ω	$I_D = 30 \text{ A}, V_{GS} = 10 \text{ V}^{\text{Note4}}$
resistance						
Input capacitance	Ciss	_	5150	_	pF	V _{DS} = 25 V
Output capacitance	Coss	_	660	_	рF	$V_{GS} = 0$
Reverse transfer capacitance	Crss	_	110	_	рF	f = 1 MHz
Turn-on delay time	td(on)	_	65	_	ns	I _D = 30 A
Rise time	tr	_	260	_	ns	V _{GS} = 10 V
Turn-off delay time	td(off)	_	200	_	ns	$R_L = 3.33 \Omega$
Fall time	tf	_	180	_	ns	$Rg = 10 \Omega$
Total Gate charge	Qg	_	132	_	nC	V _{DD} = 160 V
Gate to Source charge	Qgs	_	30	_	nC	V _{GS} = 10 V
Gate to Drain charge	Qgd	_	60	_	nC	$I_D = 60 \text{ A}$
Body-Drain diode forward voltage	V_{DF}	_	1.0	1.5	V	$I_F = 60 \text{ A}, V_{GS} = 0^{\text{Note4}}$
Body-Drain diode reverse recovery time	trr	_	190	_	ns	I _F = 60 A, V _{GS} = 0
Body-Drain diode reverse recovery	Qrr	_	1.4	_	μС	diF/dt = 100 A/μs
charge						

Notes: 4. Pulse test

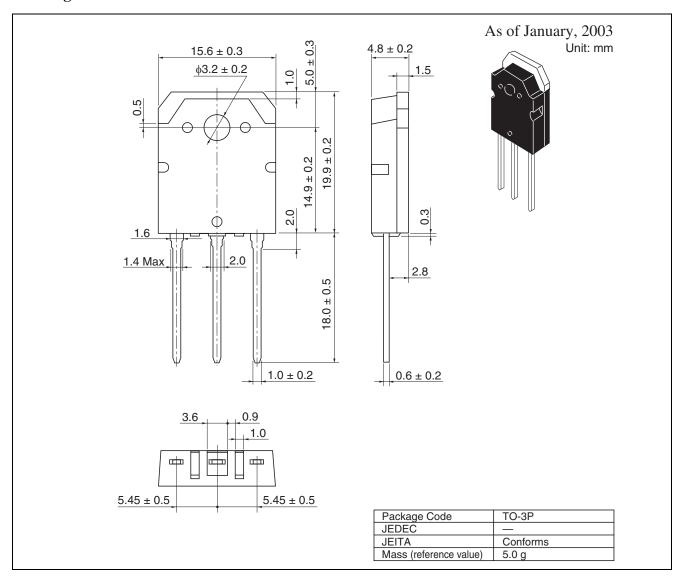
Main Characteristics







Package Dimensions



Ordering Information

Part Name	Quantity	Shipping Container
H5N2003P-E	30 pcs	Plastic magazine

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