

H5N2008P

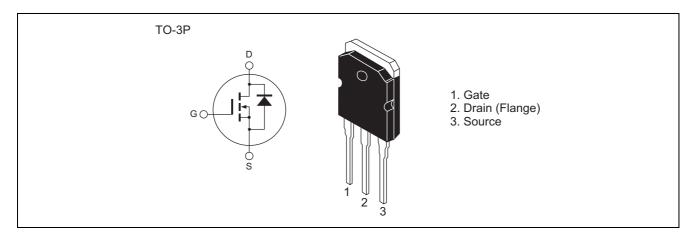
Silicon N Channel MOS FET High Speed Power Switching

REJ03G0390-0300 Rev.3.00 Nov.24.2004

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	96	Α
Drain peak current	I _{D (pulse)} Note1	192	Α
Body-Drain diode reverse Drain current	I _{DR}	96	Α
Body-Drain diode reverse Drain peak current	I _{DR (pulse)} Note1	192	Α
Avalanche current	I _{AP} Note3	48	Α
Avalanche energy	E _{AR} Note3	153	mJ
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. STch = 25° C, Tch $\leq 150^{\circ}$ C

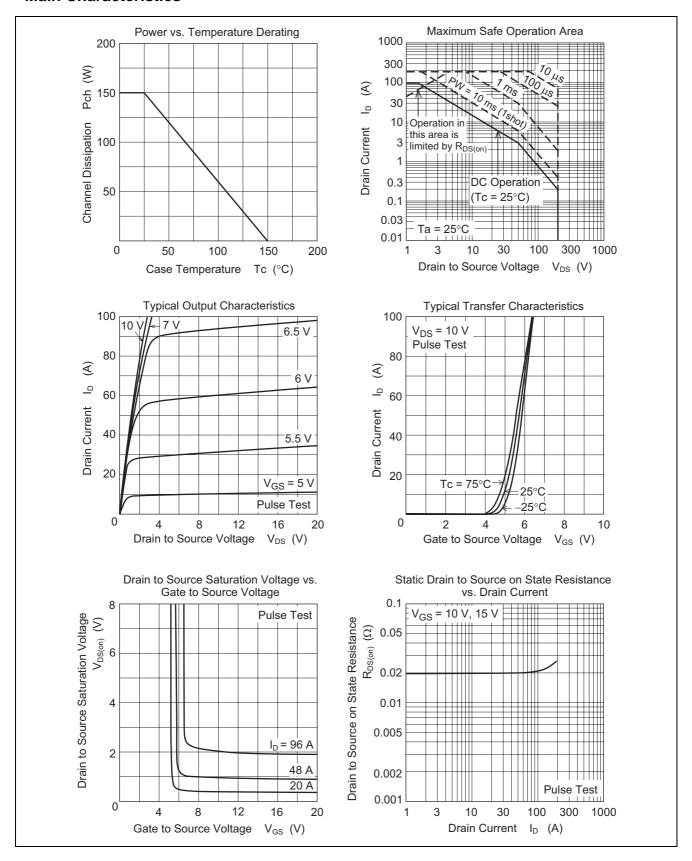
Electrical Characteristics

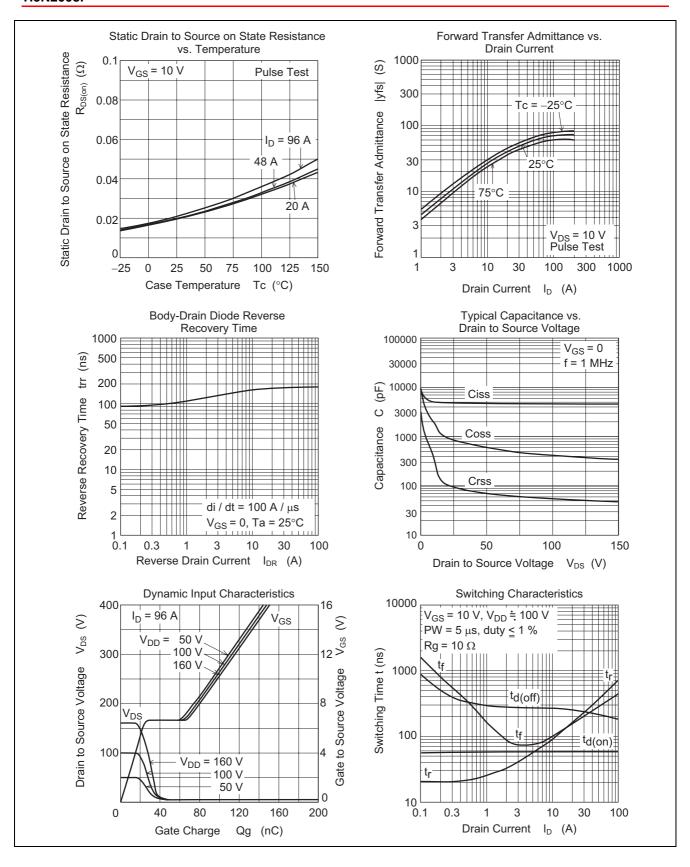
 $(Ta = 25^{\circ}C)$

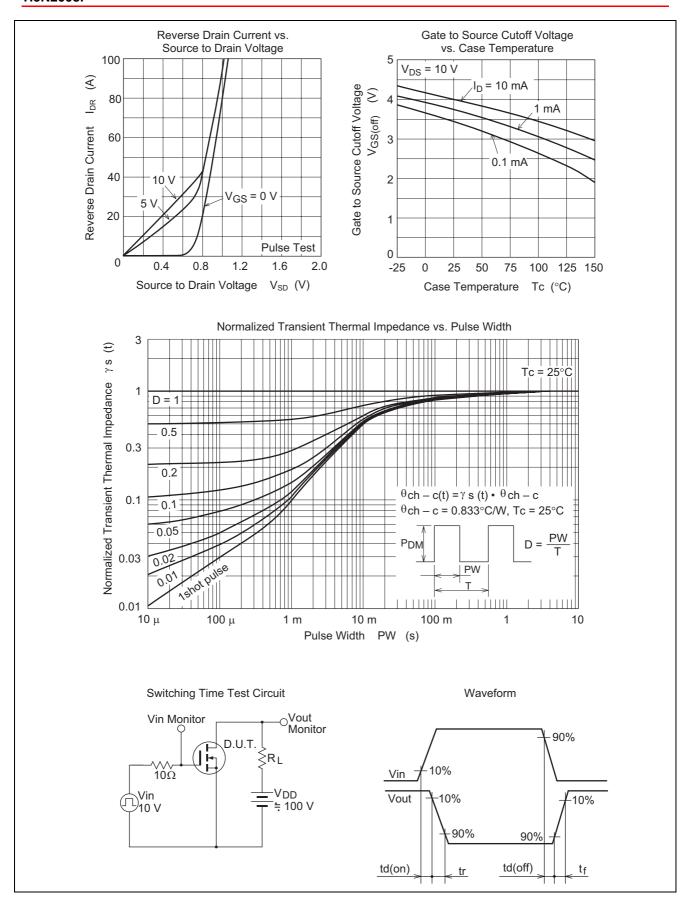
Item	Symbol	Min	Тур	Max	Unit	Test conditions
Drain to Source breakdown voltage	$V_{(BR)DSS}$	200		_	V	$I_D = 10 \text{ mA}, V_{GS} = 0$
Zero Gate voltage Drain current	I _{DSS}	_	_	1	μΑ	$V_{DS} = 200 \text{ V}, V_{GS} = 0$
Gate to Source leak current	I _{GSS}	_	_	±0.1	μΑ	$V_{GS} = \pm 30 \text{ V}, V_{DS} = 0$
Gate to Source cutoff voltage	$V_{GS(off)}$	3.0	_	4.5	V	$V_{DS} = 10 \text{ V}, I_{D} = 1 \text{ mA}$
Forward transfer admittance	yfs	35	58	_	S	$I_D = 48 \text{ A}, V_{DS} = 10 \text{ V}^{\text{Note4}}$
Static Drain to Source on state resistance	R _{DS(on)}	_	0.020	0.023	Ω	$I_D = 48 \text{ A}, V_{GS} = 10 \text{ V}^{Note4}$
	Ciss		4900		pF	V _{DS} = 25 V
Input capacitance						
Output capacitance	Coss	_	850	_	pF	$V_{GS} = 0$
Reverse transfer capacitance	Crss	_	95	_	pF	f = 1 MHz
Turn-on delay time	t _{d(on)}	_	60	_	ns	I _D = 48 A
Rise time	t _r	_	370	_	ns	V _{GS} = 10 V
Turn-off delay time	t _{d(off)}	_	220	_	ns	$R_L = 2.1 \Omega$
Fall time	t _f	_	270	_	ns	$Rg = 10 \Omega$
Total Gate charge	Qg	_	98	_	nC	V _{DD} = 160 V
Gate to Source charge	Qgs	_	25	_	nC	V _{GS} = 10 V
Gate to Drain charge	Qgd	_	44	_	nC	$I_D = 96 A$
Body-Drain diode forward voltage	V_{DF}	_	1.1	1.7	V	$I_F = 96 \text{ A}, V_{GS} = 0^{\text{Note4}}$
Body-Drain diode reverse recovery time	trr	_	180	_	ns	I _F = 96 A, V _{GS} = 0
Body-Drain diode reverse recovery charge	Qrr	_	1.5	_	μС	diF/dt = 100 A/μs

Notes: 4. Pulse test

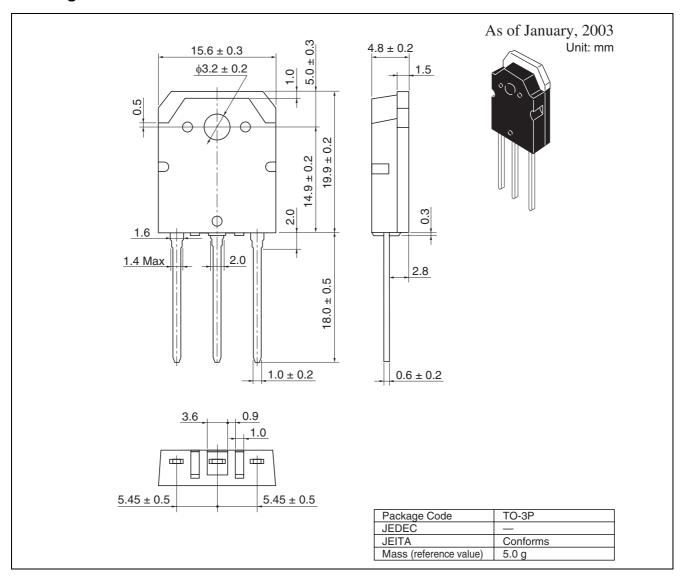
Main Characteristics







Package Dimensions



Ordering Information

Part Name	Quantity	Shipping Container
H5N2008P-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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