

HAT2184WP

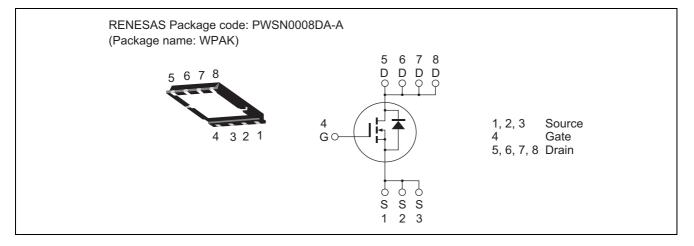
Silicon N Channel Power MOS FET Power Switching

REJ03G0536-0500 Rev.5.00 Nov 27, 2006

Features

- Low on-resistance
- Low drive current
- High density mounting

Outline



Absolute Maximum Ratings

			$(Ta = 25^{\circ}C)$
Item	Symbol	Ratings	Unit
Drain to source voltage	V _{DSS}	150	V
Gate to source voltage	V _{GSS}	±30	V
Drain current	I _D	14	А
Drain peak current	Note1 I _{D (pulse)}	28	А
Body-drain diode reverse drain current	I _{DR}	14	А
Body-drain diode reverse drain peak current	Note1 I _{DR (pulse)}	28	А
Avalanche current	I _{AP} ^{Note3}	14	А
Avalanche energy	E _{AR} ^{Note3}	14.7	mJ
Channel dissipation	Pch Note2	25	W
Channel to case thermal impedance	θch-c	5	°C/W
Channel temperature	Tch	150	°C
Storage temperature	Tstg	-55 to +150	°C

Notes: 1. $PW \le 10 \ \mu s$, duty cycle $\le 1\%$

2. Value at Tc = 25°C

3. STch = 25° C, Tch $\leq 150^{\circ}$ C



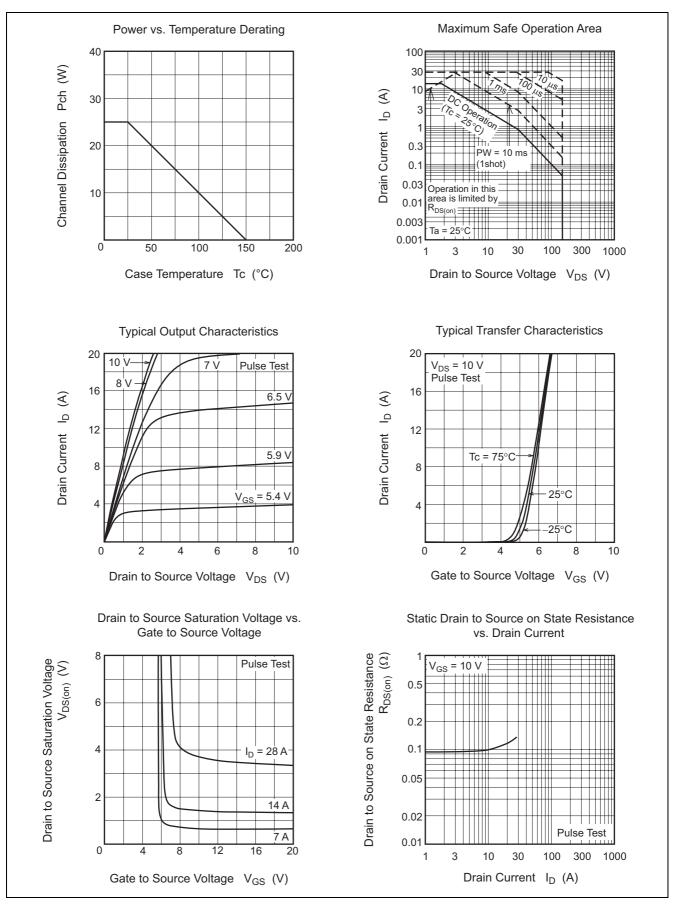
Electrical Characteristics

						$(Ta = 25^{\circ}C)$
Item	Symbol	Min	Тур	Max	Unit	Test conditions
Drain to source breakdown voltage	V _{(BR)DSS}	150	—	_	V	$I_D = 10 \text{ mA}, V_{GS} = 0$
Zero gate voltage drain current	I _{DSS}	—	—	1	μΑ	$V_{DS} = 150 \text{ V}, \text{ V}_{GS} = 0$
Gate to source leak current	I _{GSS}	_	—	±0.1	μΑ	$V_{GS} = \pm 30$ 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	y _{fs}	6	10	_	S	$I_D = 7 \text{ A}, V_{DS} = 10 \text{ V}^{Note4}$
Static drain to source on state	R _{DS(on)}	_	0.097	0.11	Ω	$I_D = 7 \text{ A}, V_{GS} = 10 \text{ V}^{Note4}$
resistance						
Input capacitance	Ciss	—	710	—	pF	V _{DS} = 25 V
Output capacitance	Coss	—	160	—	pF	V _{GS} = 0 f = 1 MHz
Reverse transfer capacitance	Crss	—	13	—	pF	
Turn-on delay time	t _{d(on)}	_	26	_	ns	$ I_D = 7 A V_{GS} = 10 V R_L = 10.7 \Omega Rg = 10 \Omega $
Rise time	tr	_	31	_	ns	
Turn-off delay time	t _{d(off)}	_	53	_	ns	
Fall time	t _f	_	7	_	ns	
Total gate charge	Qg	_	15	_	nC	V _{DD} = 120 V
Gate to source charge	Qgs		4.3		nC	V _{GS} = 10 V I _D = 14 A
Gate to drain charge	Qgd	_	5.6	_	nC	
Body-drain diode forward voltage	V _{DF}	_	0.85	1.4	V	$I_F = 14 \text{ A}, V_{GS} = 0^{Note4}$
Body-drain diode reverse recovery time	t _{rr}	_	95		ns	$I_F = 14 \text{ A}, V_{GS} = 0$
						di _F /dt = 100 A/µs

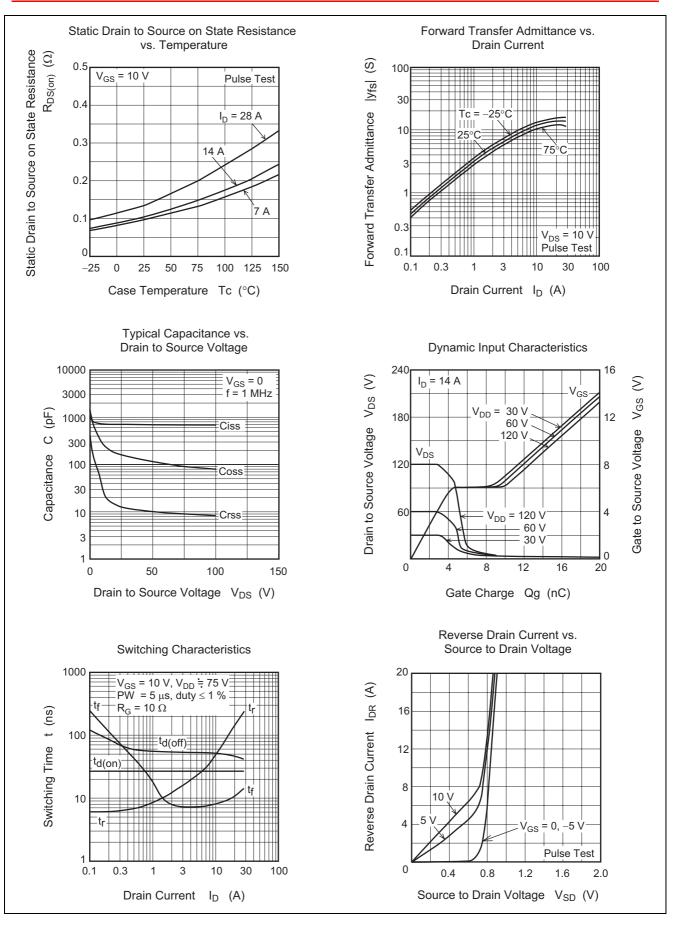
Notes: 4. Pulse test



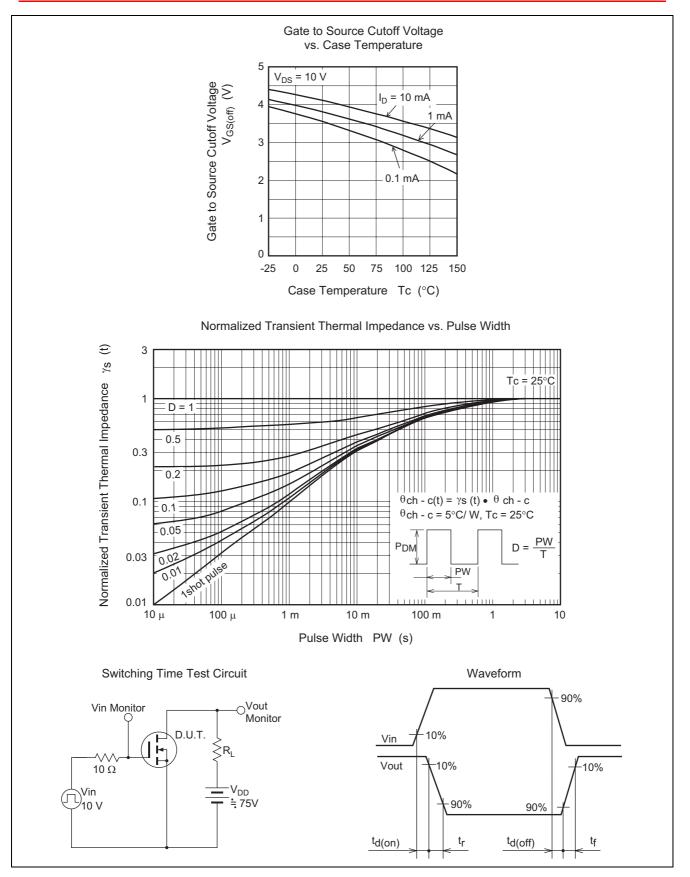
Main Characteristics





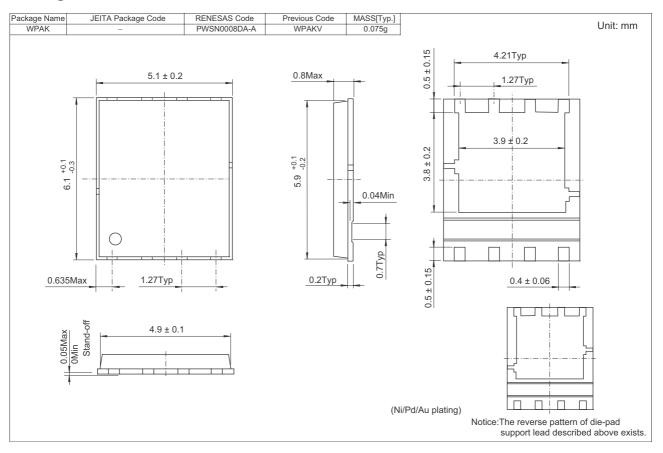








Package Dimensions



Ordering Information

Part Name	Quantity	Shipping Container
HAT2184WP-EL-E	2500 pcs	Taping

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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