

HAT2201WP

Silicon N Channel Power MOS FET Power Switching

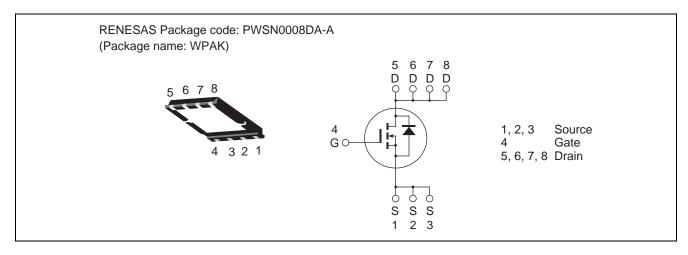
REJ03G1679-0310 Rev.3.10 May 21, 2010

Features

- Capable of 8 V gate drive
- Low drive current
- High density mounting
- Low on-resistance

 $R_{DS(on)} = 34 \text{ m}\Omega \text{ typ.}$ (at $V_{GS} = 10 \text{ V}$)

Outline



Absolute Maximum Ratings

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

Item	Symbol	Ratings	Unit
Drain to source voltage	V _{DSS}	100	V
Gate to source voltage	V _{GSS}	±20	V
Drain current	I _D	15	А
Drain peak current	I _{D(pulse)} Note1	60	А
Body-drain diode reverse drain current	I _{DR}	15	А
Avalanche current	I _{AP} Note 2	15	А
Avalanche energy	E _{AR} Note 2	22.5	mJ
Channel dissipation	Pch Note3	15	W
Channel to case thermal Impedance	θch-c Note3	8.33	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 Tch = 25°C, Rg \geq 50 Ω

3. Tc = 25℃

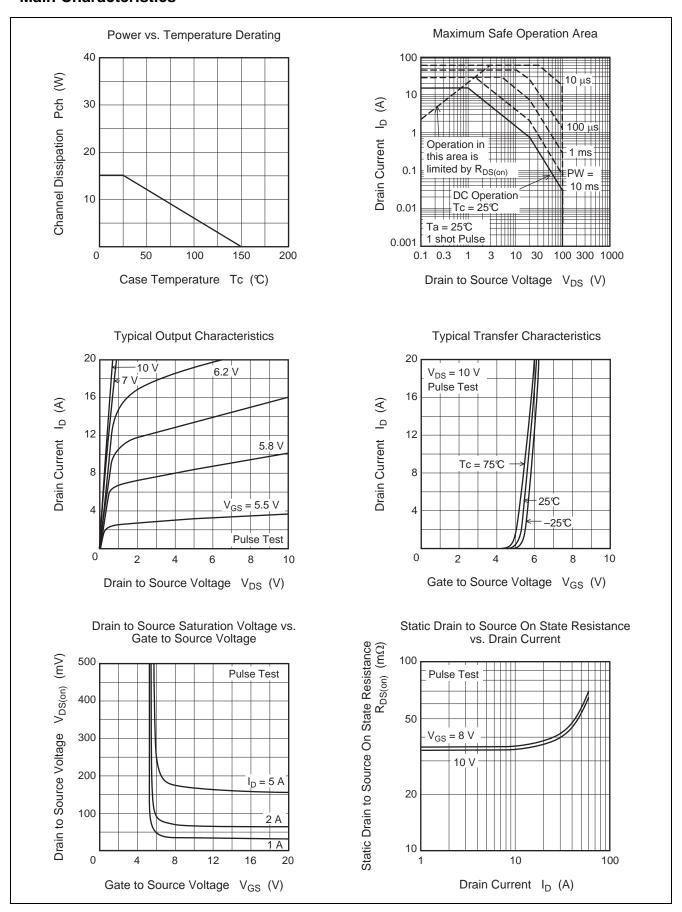
Electrical Characteristics

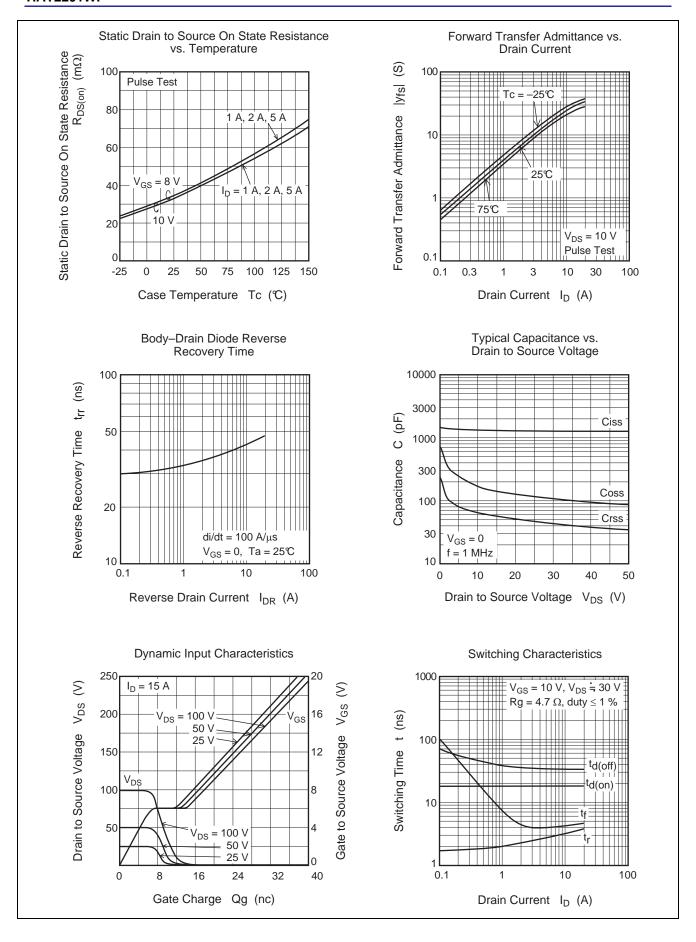
 $(Ta = 25^{\circ}C)$

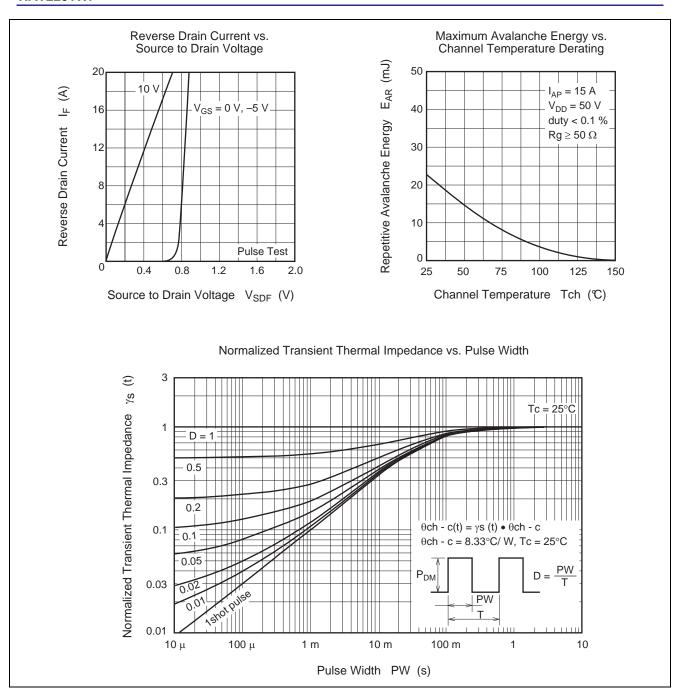
Item	Symbol	Min	Тур	Max	Unit	Test Conditions
Drain to source breakdown voltage	$V_{(BR)DSS}$	100	_	_	V	$I_D = 10 \text{ mA}, V_{GS} = 0$
Gate to source leak current	I _{GSS}	_	_	±0.1	μΑ	$V_{GS} = \pm 20 \text{ V}, V_{DS} = 0$
Zero gate voltage drain current	I _{DSS}	_	_	1	μΑ	$V_{DS} = 100 \text{ V}, V_{GS} = 0$
Gate to source cutoff voltage	$V_{GS(off)}$	3.5	_	5.0	V	$V_{DS} = 10 \text{ V}, I_{D} = 1 \text{ mA}$
Static drain to source on state	R _{DS(on)}	_	34	43	mΩ	$I_D = 7.5 \text{ A}, V_{GS} = 10 \text{ V}^{Note4}$
resistance	R _{DS(on)}	_	35	49	mΩ	$I_D = 7.5 \text{ A}, V_{GS} = 8 \text{ V}^{\text{Note4}}$
Forward transfer admittance	y _{fs}	12	20	_	S	$I_D = 7.5 \text{ A}, V_{DS} = 10 \text{ V}^{\text{Note4}}$
Input capacitance	Ciss	_	1450	_	pF	V _{DS} = 10 V
Output capacitance	Coss	_	180	_	pF	$V_{GS} = 0$
Reverse transfer capacitance	Crss	_	65	_	pF	f = 1 MHz
Gate resistance	Rg	_	0.9	_	Ω	
Total gate charge	Qg	_	21	_	nc	V _{DD} = 50 V
Gate to source charge	Qgs	_	7.6	_	nc	V _{GS} = 10 V
Gate to drain charge	Qgd	_	5.2	_	nc	I _D = 15 A
Turn-on delay time	t _{d(on)}	_	18	_	ns	$V_{GS} = 10 \text{ V}, I_D = 7.5 \text{ A}$
Rise time	t _r	_	3	_	ns	$V_{DD} \cong 30 \text{ V}$
Turn-off delay time	t _{d(off)}	_	33	_	ns	$R_L = 4 \Omega$
Fall time	t _f	_	4.1	_	ns	$Rg = 4.7 \Omega$
Body-drain diode forward voltage	V_{DF}	_	0.84	1.10	V	$I_F = 15 \text{ A}, V_{GS} = 0^{\text{Note4}}$
Body-drain diode reverse recovery time	t _{rr}	_	45	_	ns	$I_F = 15 \text{ A}, V_{GS} = 0$ $di_F/dt = 100 \text{ A}/ \mu \text{s}$

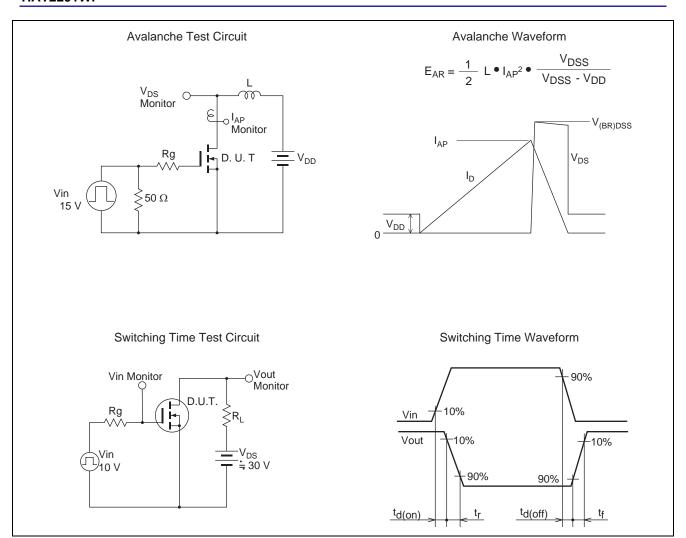
Notes: 4. Pulse test

Main Characteristics

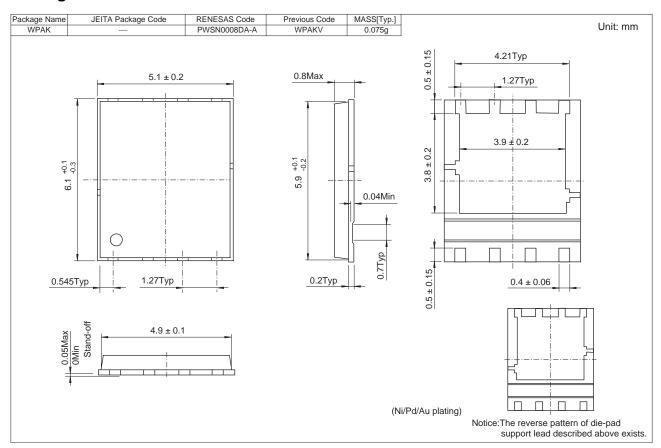








Package Dimensions



Ordering Information

Part No.	Quantity	Shipping Container
HAT2201WP-EL-E	2500 pcs	Taping

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