

HAT2193WP

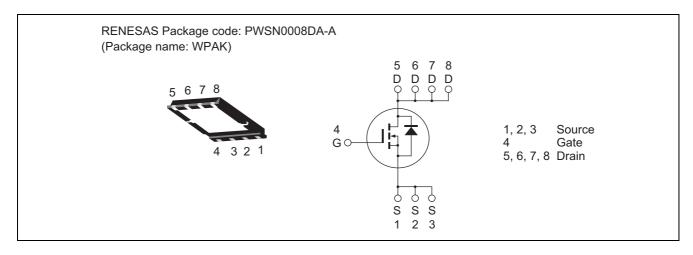
Silicon N Channel Power MOS FET Power Switching

REJ03G1252-0200 Rev.2.00 Jun 25, 2009

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}	250	V
Gate to source voltage	V _{GSS}	±30	V
Drain current	I _D	7	Α
Drain peak current	I _{D (pulse)} Note1	14	А
Body-drain diode reverse drain current	I _{DR}	7	А
Body-drain diode reverse drain peak current	I _{DR (pulse)} Note1	14	А
Avalanche current	I _{AP} Note3	3.5	Α
Avalanche energy	E _{AR} Note3	0.7	mJ
Channel dissipation	Pch Note2	20	W
Channel to case thermal impedance	θch-c	6.25	°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

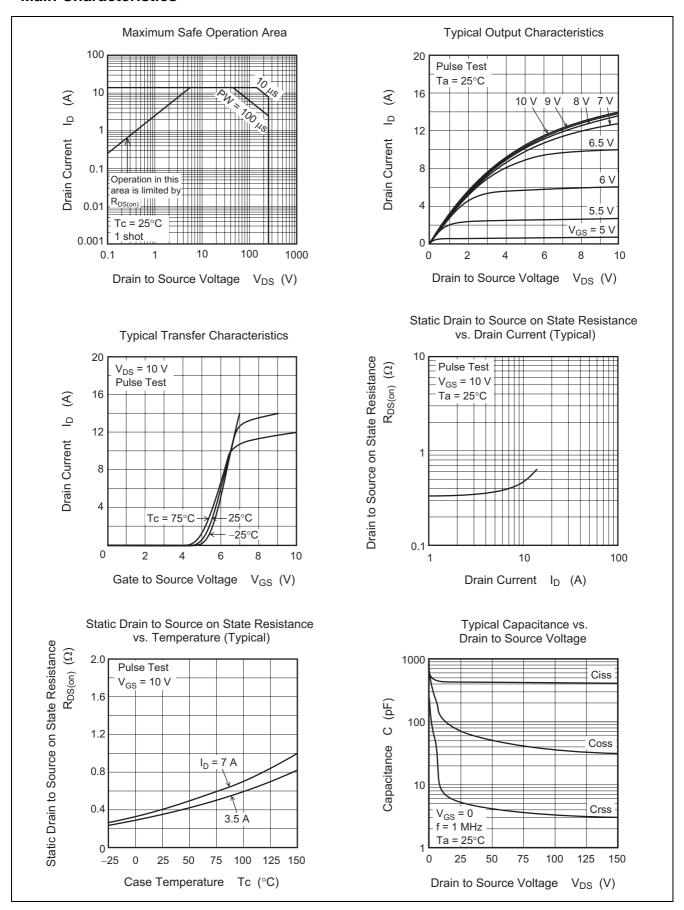
Electrical Characteristics

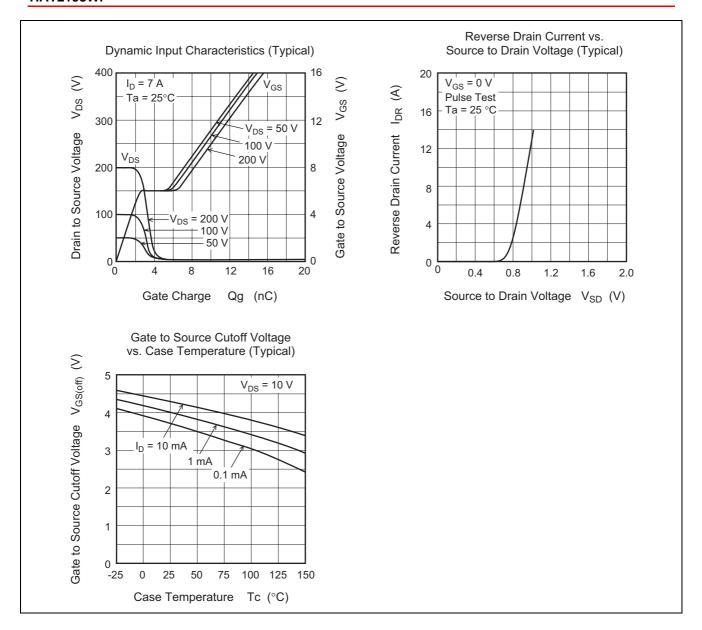
 $(Ta = 25^{\circ}C)$

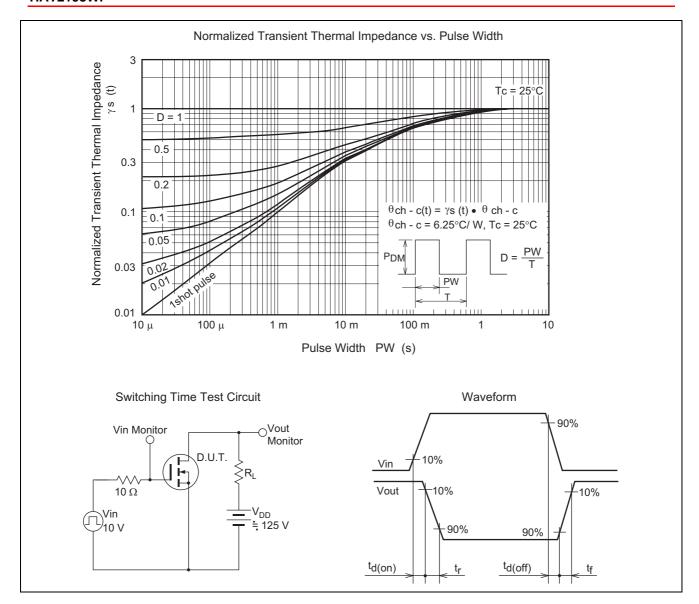
Item	Symbol	Min	Тур	Max	Unit	Test conditions
Drain to source breakdown voltage	$V_{(BR)DSS}$	250	_	_	V	$I_D = 10 \text{ mA}, V_{GS} = 0$
Zero gate voltage drain current	I _{DSS}	_	_	1	μΑ	$V_{DS} = 250 \text{ V}, V_{GS} = 0$
Gate to source leak current	I _{GSS}	_	_	±0.1	μΑ	$V_{GS} = \pm 30 \text{ V}, V_{DS} = 0$
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	3	5	_	S	$I_D = 3.5 \text{ A}, V_{DS} = 10 \text{ V}^{\text{Note4}}$
Static drain to source on state	R _{DS(on)}	_	0.35	0.40	Ω	$I_D = 3.5 \text{ A}, V_{GS} = 10 \text{ V}^{\text{Note4}}$
resistance						
Input capacitance	Ciss	—	430	_	pF	V _{DS} = 25 V
Output capacitance	Coss	—	70	_	pF	$V_{GS} = 0$
Reverse transfer capacitance	Crss	_	5	_	pF	f = 1 MHz
Turn-on delay time	t _{d(on)}	_	24	_	ns	$I_D = 3.5 \text{ A}$
Rise time	t _r	_	17	_	ns	V _{GS} = 10 V
Turn-off delay time	t _{d(off)}	_	46	_	ns	$R_L = 35.7 \Omega$
Fall time	t _f	_	8	_	ns	$Rg = 10 \Omega$
Total gate charge	Qg	_	10	_	nC	V _{DD} = 200 V
Gate to source charge	Qgs	_	2.5	_	nC	V _{GS} = 10 V
Gate to drain charge	Qgd	_	4	_	nC	$I_D = 7 A$
Body-drain diode forward voltage	V_{DF}	_	0.9	1.4	V	$I_F = 7 \text{ A}, V_{GS} = 0^{\text{Note4}}$
Body-drain diode reverse recovery time	trr	_	110	_	ns	$I_F = 7 \text{ A}, V_{GS} = 0$
						$di_F/dt = 100 A/\mu s$

Notes: 4. Pulse test

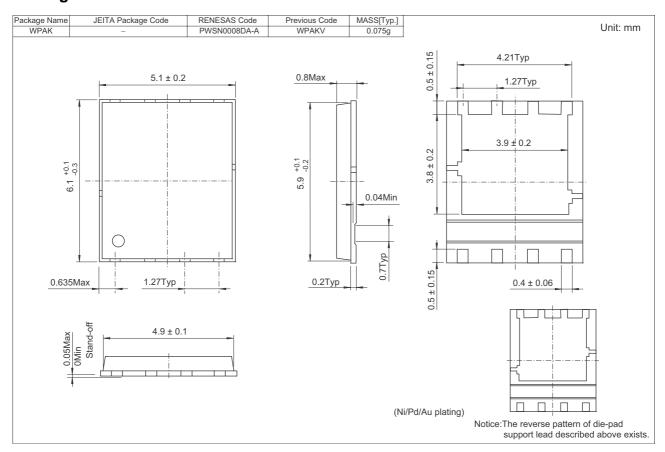
Main Characteristics







Package Dimensions



Ordering Information

Part No.	Quantity	Shipping Container		
HAT2193WP-EL-E	2500 pcs	Taping		

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