

HAT2119H

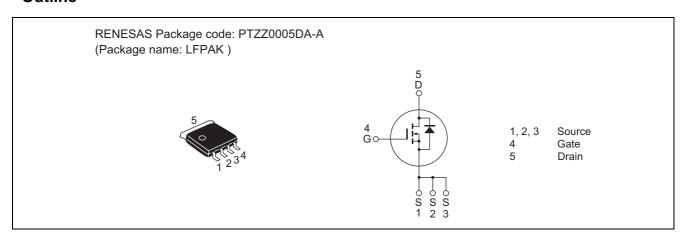
Silicon N Channel MOS FET High Speed Power Switching

REJ03G0176-0300 Rev.3.00 Dec 19, 2006

Features

- Low drive current.
- Low on-resistance
- Low profile

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	5	А
Drain peak current	I _{D(pulse)} Note1	20	Α
Body-drain diode reverse drain current	I _{DR}	5	А
Body-drain diode reverse drain peak current	I _{DR(pulse)} Note1	20	А
Avalanche current	I _{AP} Note3	5	А
Avalanche energy	E _{AR} Note3	1.5	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. $PW \le 10 \mu s$, duty cycle $\le 1\%$

2. Value at Tc = 25°C

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

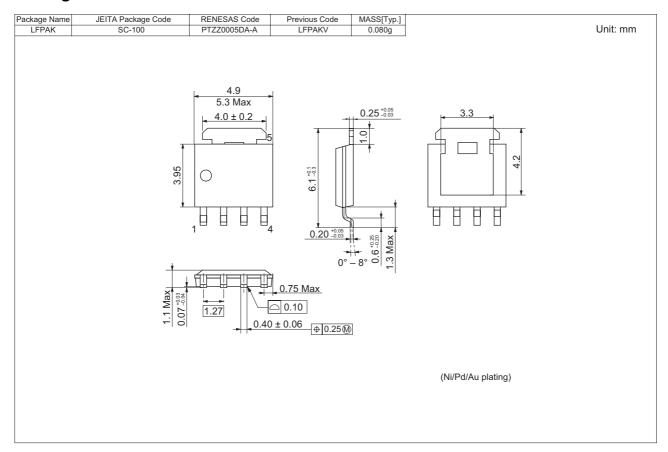
Electrical Characteristics

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

Item	Symbol	Min	Тур	Max	Unit	Test conditions
Drain to source breakdown voltage	$V_{(BR)DSS}$	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	_	4.0	V	$V_{DS} = 10 \text{ V}, I_{D} = 1 \text{ mA}$
Forward transfer admittance	y _{fs}	2.0	4.0	_	S	$I_D = 2.5 \text{ A}, V_{DS} = 10 \text{ V}^{\text{Note4}}$
Static drain to source on state resistance	R _{DS(on)}	_	0.48	0.63	Ω	$I_D = 2.5 \text{ A}, V_{GS} = 10 \text{ V}^{\text{Note4}}$
Input capacitance	Ciss	_	450	_	pF	V _{DS} = 25 V
Output capacitance	Coss	_	60	_	pF	$V_{GS} = 0$
Reverse transfer capacitance	Crss	_	12	_	pF	f = 1 MHz
Turn-on delay time	t _{d(on)}	_	19	_	ns	I _D = 2.5 A
Rise time	t _r	_	10	_	ns	V _{GS} = 10 V
Turn-off delay time	t _{d(off)}	_	48	_	ns	$R_L = 50 \Omega$
Fall time	t _f	_	10	_	ns	$Rg = 10 \Omega$
Total gate charge	Qg	_	14	_	nC	V _{DD} = 200 V
Gate to source charge	Qgs	_	2.5	_	nC	V _{GS} = 10 V
Gate to drain charge	Qgd	_	7	_	nC	$I_D = 5 A$
Body-drain diode forward voltage	V_{DF}	_	0.85	1.30	V	$I_F = 5 \text{ A}, V_{GS} = 0$ Note4
Body-drain diode reverse recovery time	t _{rr}	_	95	_	ns	$I_F = 5 A, V_{GS} = 0$
						di _F /dt = 100 A/μs

Notes: 4. Pulse test

Package Dimensions



Ordering Information

Part No.	Quantity	Shipping Container
HAT2119H-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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