H5N2501LD, H5N2501LS, H5N2501LM

Silicon N Channel MOS FET
High Speed Power Switching

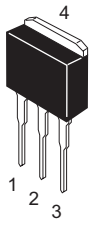
REJ03G1250-0200
Rev.2.00
Jul.21,2005

Features

- Low on-resistance
- Low leakage current
- High speed switching

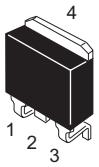
Outline

RENESAS Package code: PRSS0004AE-A
(Package name LDPAK(L))



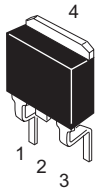
H5N2501LD

RENESAS Package code: PRSS0004AE-B
(Package name LDPAK(S)-(1))

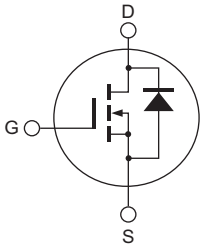


H5N2501LS

RENESAS Package code: PRSS0004AE-C
(Package name LDPAK(S)-(2))



H5N2501LM



1. Gate
2. Drain
3. Source
4. Drain

Absolute Maximum Ratings

(Ta = 25°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	18	A
Drain peak current	$I_{D\ (pulse)}$ Note1	72	A
Body-Drain diode reverse Drain current	I_{DR}	18	A
Avalanche current	I_{AP} Note3	18	A
Channel dissipation	Pch Note2	75	W
Channel temperature	Tch	150	°C
Storage temperature	Tstg	–55 to +150	°C

Notes: 1. PW ≤ 10 µs, duty cycle ≤ 1%
2. Value at Tc = 25°C
3. STch = 25°C, Tch ≤ 150°C

Electrical Characteristics

(Ta = 25°C)

Item	Symbol	Min	Typ	Max	Unit	Test conditions
Drain to Source breakdown voltage	$V_{(BR)DSS}$	250	—	—	V	I_D = 10 mA, V_{GS} = 0
Zero Gate voltage drain current	I_{DSS}	—	—	1	µA	V_{DS} = 250 V, V_{GS} = 0
Gate to Source leak current	I_{GSS}	—	—	±0.1	µA	V_{GS} = ±30 V, V_{DS} = 0
Gate to Source cutoff voltage	$V_{GS(off)}$	3.0	—	4.5	V	V_{DS} = 10 V, I_D = 1 mA
Forward transfer admittance	|yfs|	8	14	—	S	I_D = 9 A, V_{DS} = 10 V Note4
Static Drain to Source on state resistance	$R_{DS(on)}$	—	0.14	0.18	Ω	I_D = 9 A, V_{GS} = 10 V Note4
Input capacitance	Ciss	—	1350	—	pF	V_{DS} = 25 V V_{GS} = 0 f = 1 MHz
Output capacitance	Coss	—	170	—	pF	
Reverse transfer capacitance	Crss	—	50	—	pF	
Turn-on delay time	td(on)	—	30	—	ns	I_D = 9 A V_{GS} = 10 V R_L = 13.9 Ω Rg = 10 Ω
Rise time	tr	—	65	—	ns	
Turn-off delay time	td(off)	—	95	—	ns	
Fall time	tf	—	18	—	ns	
Total Gate charge	Qg	—	45	—	nC	V_{DD} = 200 V V_{GS} = 10 V I_D = 18 A
Gate to Source charge	Qgs	—	8	—	nC	
Gate to Drain charge	Qgd	—	22	—	nC	
Body-Drain diode forward voltage	V_{DF}	—	0.9	1.4	V	I_F = 18 A, V_{GS} = 0 Note4
Body-Drain diode reverse recovery time	trr	—	160	—	ns	I_F = 18 A, V_{GS} = 0 di_F/dt = 100 A/µs
Body-Drain diode reverse recovery charge	Qrr	—	1.0	—	µC	

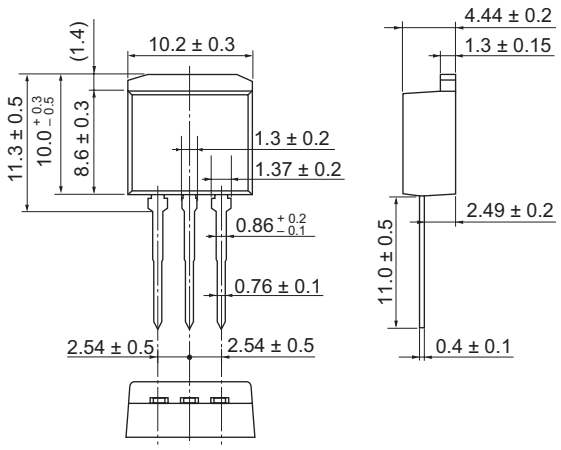
Notes: 4. Pulse test

Package Dimensions

• H5N2501LD

JEITA Package Code	RENESAS Code	Package Name	MASS[Typ.]
—	PRSS0004AE-A	LDPAK(L) / LDPAK(L)V	1.40g

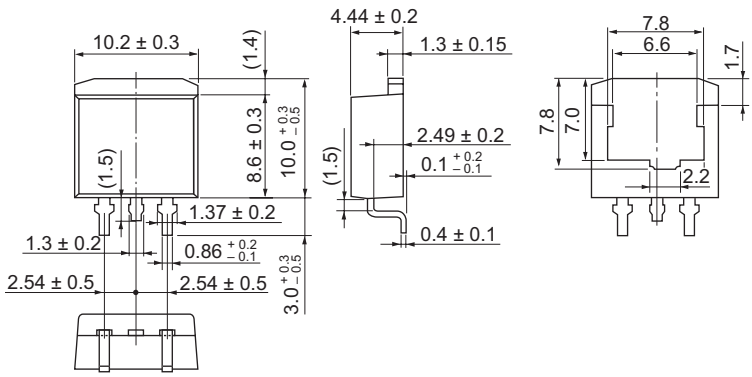
Unit: mm



• H5N2501LS

JEITA Package Code	RENESAS Code	Package Name	MASS[Typ.]
SC-83	PRSS0004AE-B	LDPAK(S)-(1) / LDPAK(S)-(1)V	1.30g

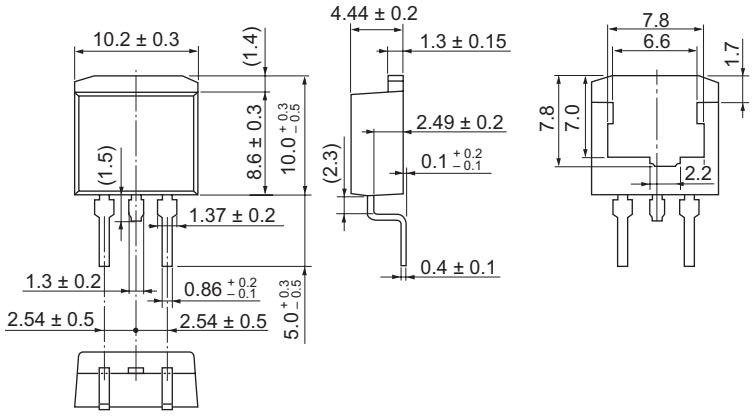
Unit: mm



• H5N2501LM

JEITA Package Code	RENESAS Code	Package Name	MASS[Typ.]
—	PRSS0004AE-C	LDPAK(S)-(2) / LDPAK(S)-(2)V	1.35g

Unit: mm



Ordering Information

Part Name	Quantity	Shipping Container
H5N2501LSTL-E	1000 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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450 Holger Way, San Jose, CA 95134-1368, U.S.A
Tel: <1> (408) 382-7500, Fax: <1> (408) 382-7501

Renesas Technology Europe Limited
Dukes Meadow, Millboard Road, Bourne End, Buckinghamshire, SL8 5FH, U.K.
Tel: <44> (1628) 585-100, Fax: <44> (1628) 585-900

Renesas Technology Hong Kong Ltd.
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Tel: <852> 2265-6688, Fax: <852> 2730-6071

Renesas Technology Taiwan Co., Ltd.
10th Floor, No.99, Fushing North Road, Taipei, Taiwan
Tel: <886> (2) 2715-2888, Fax: <886> (2) 2713-2999

Renesas Technology (Shanghai) Co., Ltd.
Unit2607 Ruijing Building, No.205 Maoming Road (S), Shanghai 200020, China
Tel: <86> (21) 6472-1001, Fax: <86> (21) 6415-2952

Renesas Technology Singapore Pte. Ltd.
1 Harbour Front Avenue, #06-10, Keppel Bay Tower, Singapore 098632
Tel: <65> 6213-0200, Fax: <65> 6278-8001

Renesas Technology Korea Co., Ltd.
Kukje Center Bldg. 18th Fl., 191, 2-ka, Hangang-ro, Yongsan-ku, Seoul 140-702, Korea
Tel: <82> 2-796-3115, Fax: <82> 2-796-2145

Renesas Technology Malaysia Sdn. Bhd.
Unit 906, Block B, Menara Amcorp, Amcorp Trade Centre, No.18, Jalan Persiaran Barat, 46050 Petaling Jaya, Selangor Darul Ehsan, Malaysia
Tel: <603> 7955-9390, Fax: <603> 7955-9510