H5N2510DL, H5N2510DS

Silicon N Channel MOS FET
High Speed Power Switching

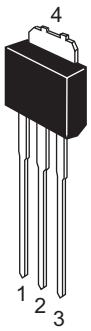
REJ03G1110-0200
(Previous: ADE-208-1379)
Rev.2.00
Sep 07, 2005

Features

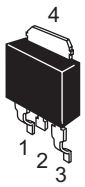
- Low on-resistance
- Low drive current
- High speed switching

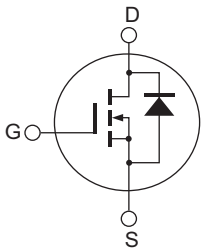
Outline

RENESAS Package code: PRSS0004ZD-B
(Package name: DPAK (L)-(2))



RENESAS Package code: PRSS0004ZD-C
(Package name: DPAK (S))





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

Absolute Maximum Ratings

(Ta = 25°C)

Item	Symbol	Value	Unit
Drain to source voltage	V_{DSS}	250	V
Gate to source voltage	V_{GSS}	±20	V
Drain current	I_D	5	A
Drain peak current	$I_{D\ (pulse)}$ Note 1	20	A
Body-drain diode reverse drain current	I_{DR}	5	A
Body-drain diode reverse drain peak current	$I_{DR\ (pulse)}$ Note 1	20	A
Channel dissipation	Pch Note 2	25	W
Channel to case thermal Impedance	θ ch-c	5	°C/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

Electrical Characteristics

(Ta = 25°C)

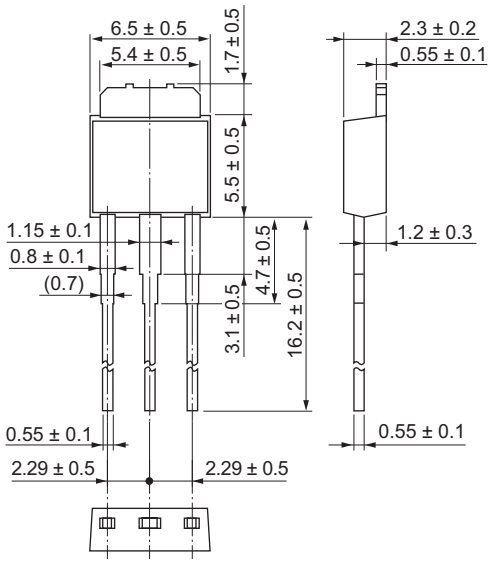
Item	Symbol	Min	Typ	Max	Unit	Test Conditions
Drain to source breakdown voltage	$V_{(BR)\ DSS}$	250	—	—	V	I_D = 10 mA, V_{GS} = 0
Gate to source leak current	I_{GSS}	—	—	±0.1	µA	V_{GS} = ±20 V, V_{DS} = 0
Zero gate voltage drain current	I_{DSS}	—	—	1	µA	V_{DS} = 250 V, V_{GS} = 0
Gate to source cutoff voltage	$V_{GS\ (off)}$	1.0	—	2.5	V	V_{DS} = 10 V, I_D = 1 mA
Static drain to source on state resistance	$R_{DS\ (on)}$	—	0.68	0.89	Ω	I_D = 2.5 A, V_{GS} = 10 V Note 3
	$R_{DS\ (on)}$	—	0.72	0.97	Ω	I_D = 2.5 A, V_{GS} = 10 V Note 3
Forward transfer admittance	$\|y_{fs}\|$	3.2	5.3	—	S	I_D = 2.5 A, V_{DS} = 4 V Note 3
Input capacitance	Ciss	—	365	—	pF	V_{DS} = 25 V
Output capacitance	Coss	—	42	—	pF	V_{GS} = 0
Reverse transfer capacitance	Crss	—	12	—	pF	f = 1 MHz
Total gate charge	Qg	—	15.8	—	nC	V_{DD} = 200 V
Gate to source charge	Qgs	—	1.2	—	nC	V_{GS} = 10 V
Gate to drain charge	Qgd	—	5.4	—	nC	I_D = 5 A
Turn-on delay time	$t_{d\ (on)}$	—	15	—	ns	I_D = 2.5 A
Rise time	t_r	—	18.5	—	ns	V_{GS} = 10 V
Turn-off delay time	$t_{d\ (off)}$	—	65	—	ns	R_L = 50 Ω
Fall time	t_f	—	10	—	ns	Rg = 10 Ω
Body-drain diode forward voltage	V_{DF}	—	1.0	1.5	V	I_F = 5 A, V_{GS} = 0
Body-drain diode reverse recovery time	t_{rr}	—	91	—	ns	I_F = 5 A, V_{GS} = 0
Body-drain diode reverse recovery charge	Q_{rr}	—	430	—	nC	di_F/dt = 100 A/µs

Note: 3. Pulse test

Package Dimensions

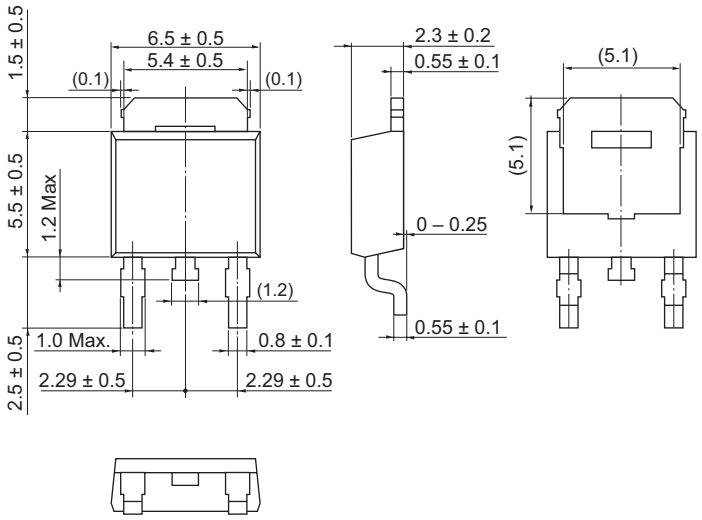
JEITA Package Code	RENESAS Code	Package Name	MASS[Typ.]
—	PRSS0004ZD-B	DPAK(L)-(2) / DPAK(L)-(2)V	0.42g

Unit: mm



JEITA Package Code	RENESAS Code	Package Name	MASS[Typ.]
SC-63	PRSS0004ZD-C	DPAK(S) / DPAK(S)V	0.28g

Unit: mm



Ordering Information

Part Name	Quantity	Shipping Container
H5N2510DL-E	3200 pcs	Box (Sack)
H5N2510DSTL-E	3000 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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