

H5N2005DL, H5N2005DS

Silicon N Channel MOS FET
High Speed Power Switching

REJ03G1104-0200
(Previous: ADE-208-1373)
Rev.2.00
Sep 07, 2005

Features

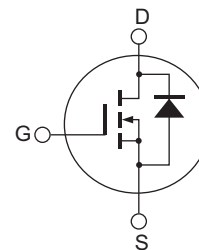
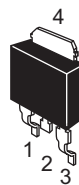
- Low on-resistance
- Low drive current
- High speed switching

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}	200	V
Gate to source voltage	V _{GSS}	±30	V
Drain current	I _D	6	A
Drain peak current	I _{D (pulse)} ^{Note 1}	24	A
Body-drain diode reverse drain current	I _{DR}	6	A
Body-drain diode reverse drain peak current	I _{DR (pulse)} ^{Note 1}	24	A
Channel dissipation	P _{ch} ^{Note 2}	25	W
Channel to case thermal Impedance	θ ch-c	5	°C/W
Channel temperature	T _{ch}	150	°C
Storage temperature	T _{stg}	-55 to +150	°C

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

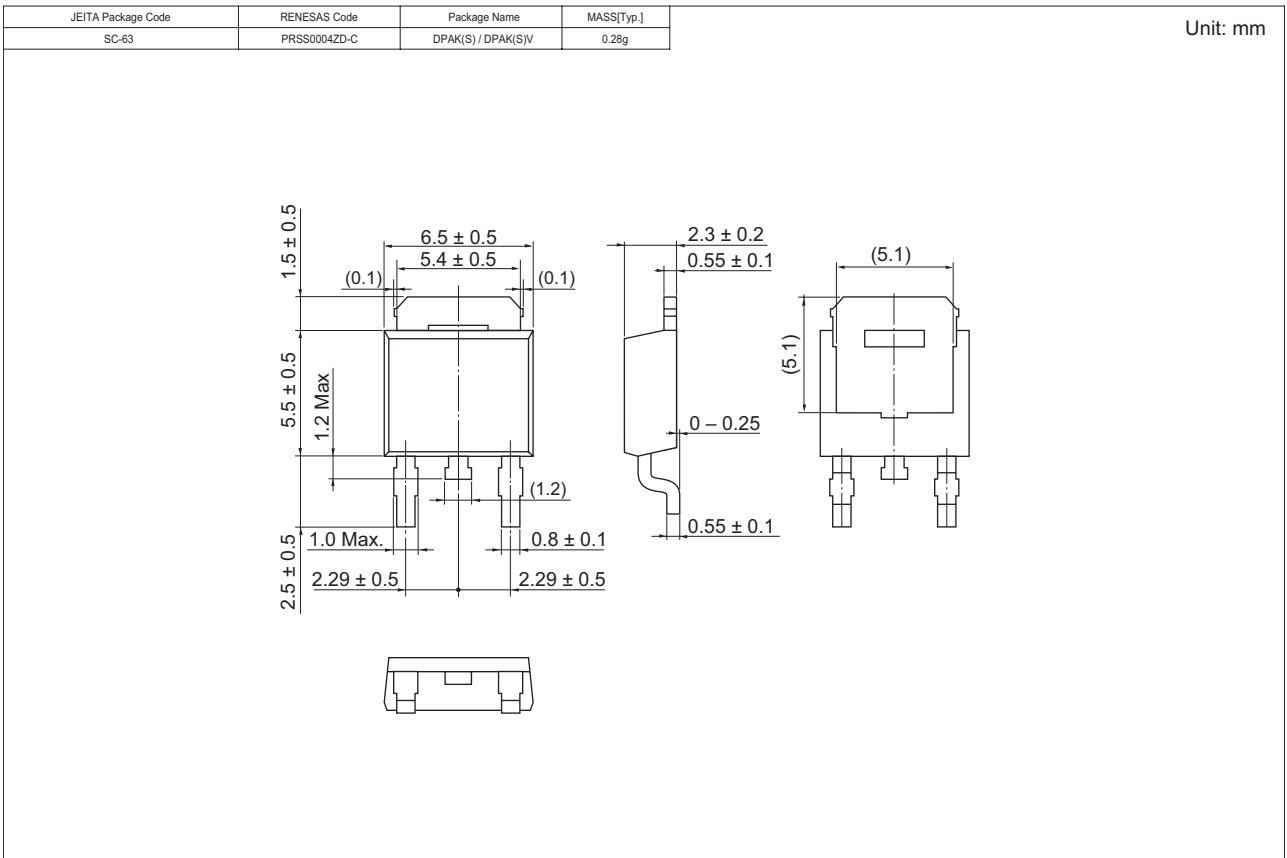
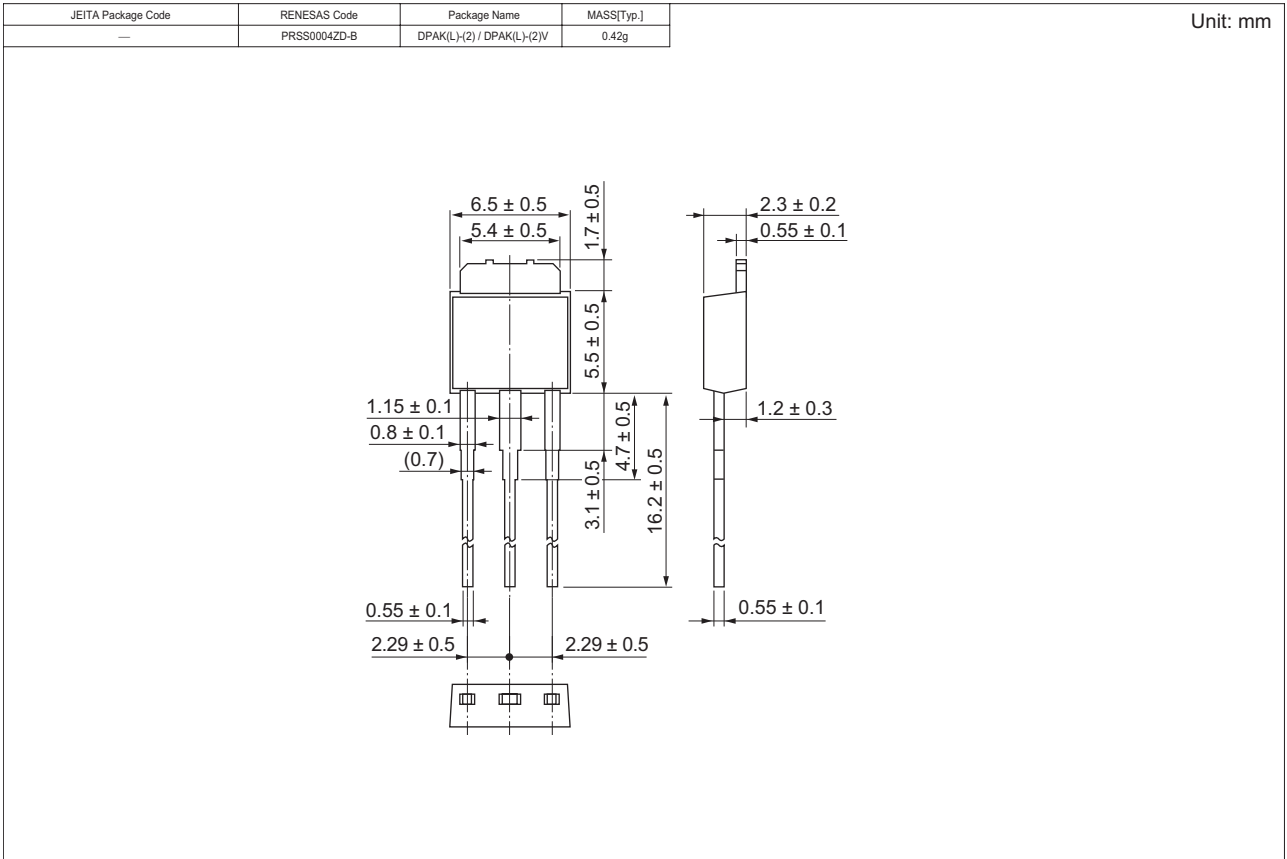
Electrical Characteristics

(Ta = 25°C)

Item	Symbol	Min	Typ	Max	Unit	Test Conditions
Drain to source breakdown voltage	V _{(BR) DSS}	200	—	—	V	I _D = 10 mA, V _{GS} = 0
Gate to source leak current	I _{GSS}	—	—	±0.1	μA	V _{GS} = ±30 V, V _{DS} = 0
Zero gate voltage drain current	I _{DSS}	—	—	1	μA	V _{DS} = 200 V, V _{GS} = 0
Gate to source cutoff voltage	V _{GS (off)}	3.0	—	4.5	V	V _{DS} = 10 V, I _D = 1 mA
Static drain to source on state resistance	R _{DS (on)}	—	0.52	0.65	Ω	I _D = 3 A, V _{GS} = 10 V ^{Note 3}
Forward transfer admittance	y _{fs}	2.0	3.4	—	S	I _D = 3 A, V _{DS} = 10 V ^{Note 3}
Input capacitance	C _{iss}	—	300	—	pF	V _{DS} = 25 V
Output capacitance	C _{oss}	—	44	—	pF	V _{GS} = 0
Reverse transfer capacitance	C _{rss}	—	12.5	—	pF	f = 1 MHz
Total gate charge	Q _g	—	9.8	—	nC	V _{DD} = 160 V
Gate to source charge	Q _{gs}	—	2.0	—	nC	V _{GS} = 10 V
Gate to drain charge	Q _{gd}	—	5.2	—	nC	I _D = 6 A
Turn-on delay time	t _{d (on)}	—	23	—	ns	I _D = 3 A
Rise time	t _r	—	24	—	ns	V _{GS} = 10 V
Turn-off delay time	t _{d (off)}	—	43.5	—	ns	R _L = 33.3 Ω
Fall time	t _f	—	11	—	ns	R _g = 10 Ω
Body-drain diode forward voltage	V _{DF}	—	1.0	1.5	V	I _F = 6 A, V _{GS} = 0
Body-drain diode reverse recovery time	t _{rr}	—	90	—	ns	I _F = 6 A, V _{GS} = 0
Body-drain diode reverse recovery charge	Q _{rr}	—	400	—	nC	di _F /dt = 100 A/μs

Note: 3. Pulse test

Package Dimensions



Ordering Information

Part Name	Quantity	Shipping Container
H5N2005DL-E	3200 pcs	Box (Sack)
H5N2005DSTL-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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