



H7P1002DL, H7P1002DS

Silicon P Channel MOS FET
High Speed Power Switching

REJ03G1601-0100
Rev.1.00
Nov 16, 2007

Features

- Low on-resistance
 $R_{DS(on)} = 85 \text{ m}\Omega \text{ typ.}$
- Low drive current
- 4.5 V gate drive device can driven from 5 V source

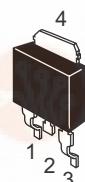
Outline

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

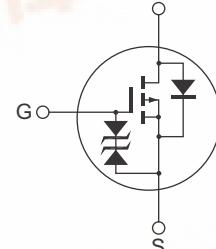


H7P0601DL

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



H7P0601DS



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

Absolute Maximum Ratings

(Ta = 25°C)

Item	Symbol	Rating	Unit
Drain to source voltage	V _{DSS}	-100	V
Gate to source voltage	V _{GSS}	±20	V
Drain current	I _D	-15	A
Drain peak current	I _D (pulse) ^{Note1}	-60	A
Body-drain diode reverse drain current	I _{DR}	-15	A
Avalanche current	I _{AP} ^{Note3}	-12	A
Avalanche energy	E _{AR} ^{Note3}	14.4	mJ
Channel dissipation	P _{ch} ^{Note2}	30	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 T_c = 25°C

3. Value at T_{ch} = 25°C, R_g ≥ 50 Ω

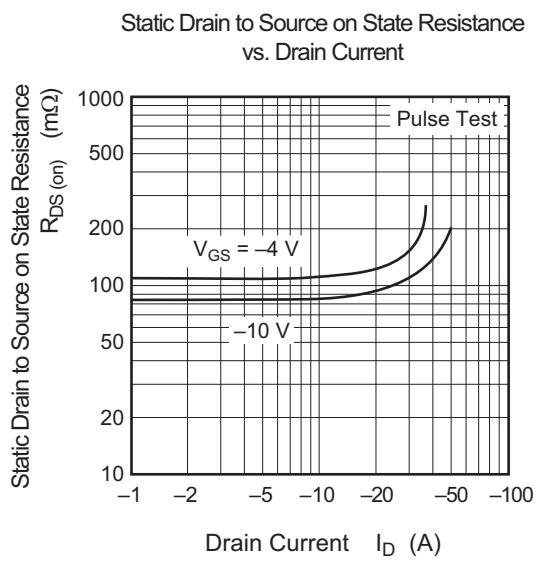
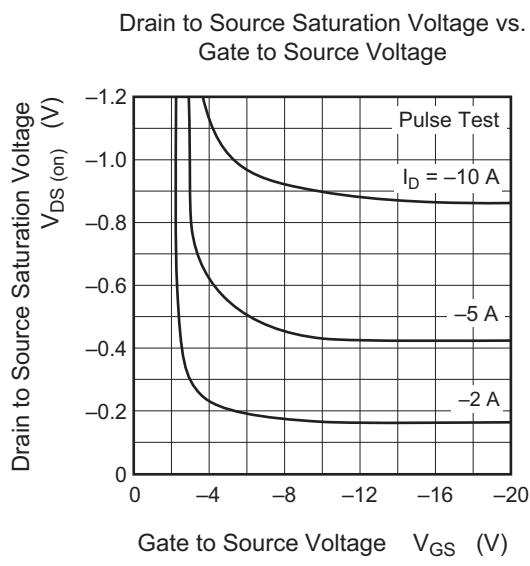
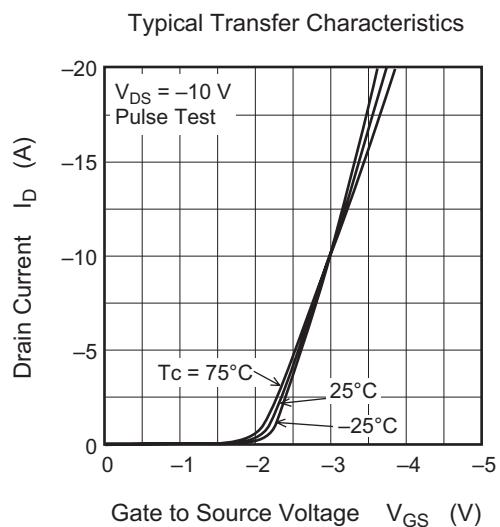
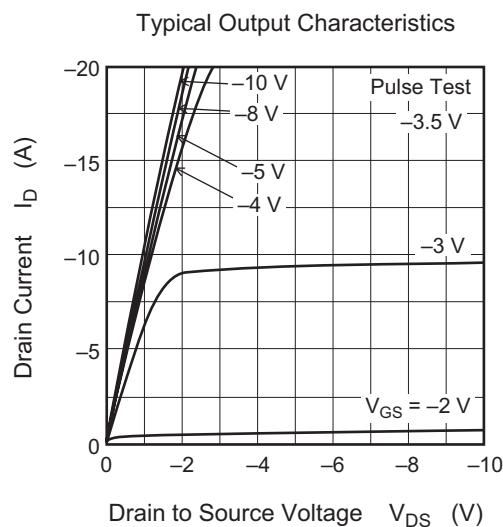
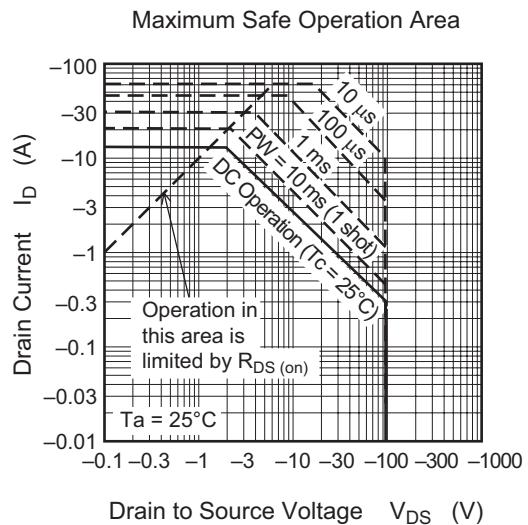
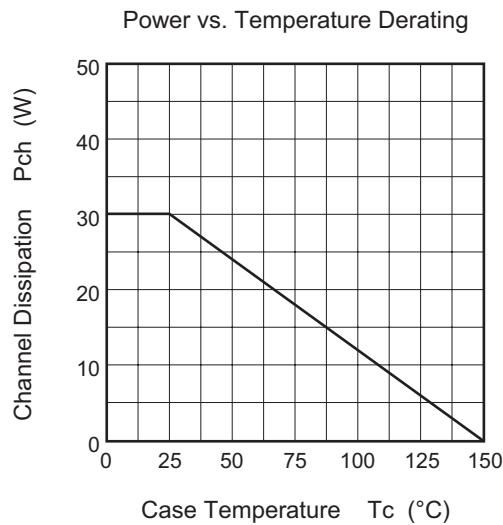
Electrical Characteristics

(Ta = 25°C)

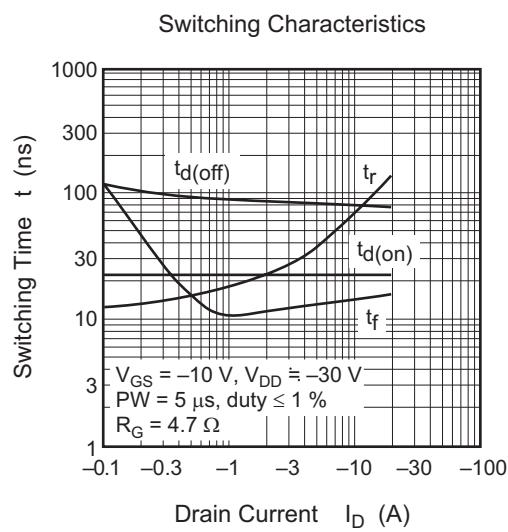
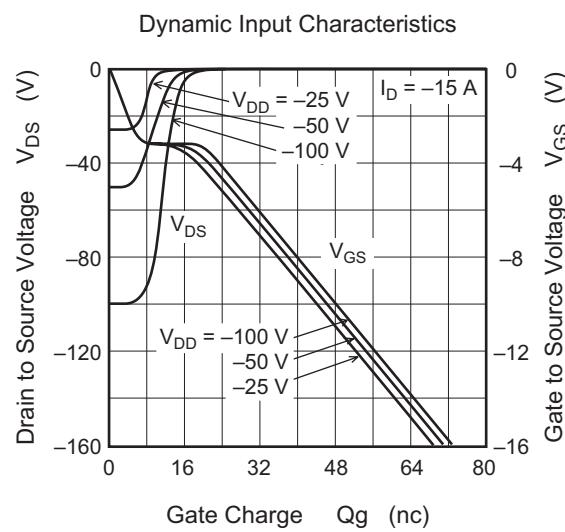
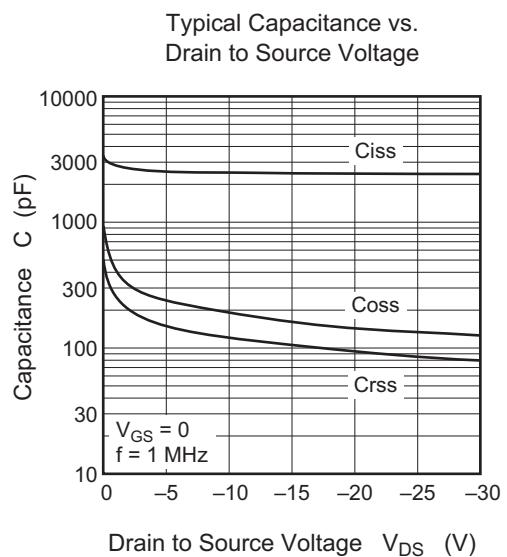
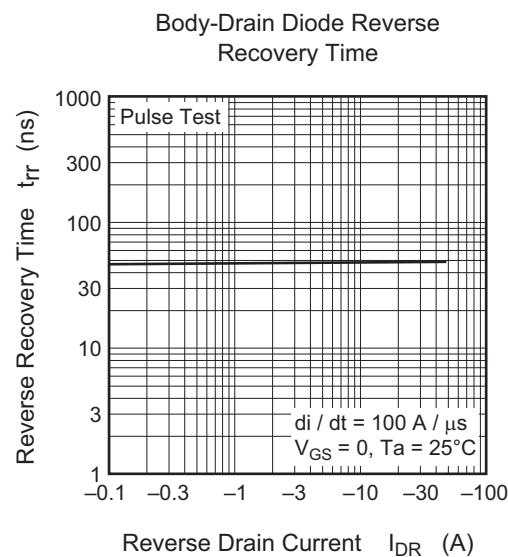
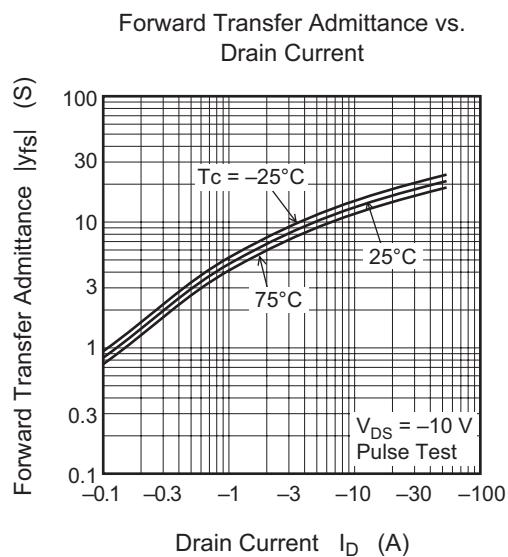
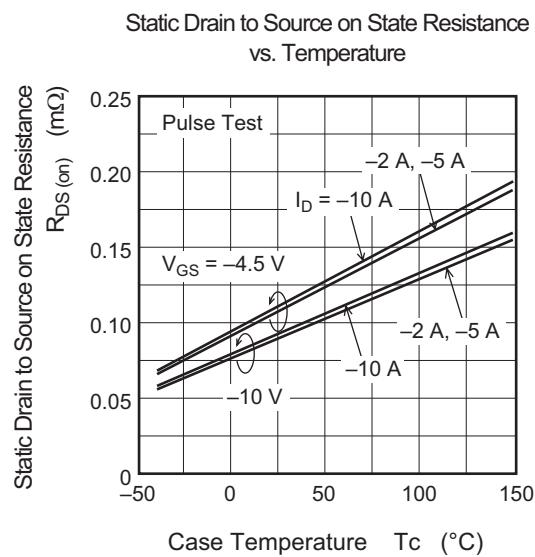
Item	Symbol	Min	Typ	Max	Unit	Test Conditions
Drain to source breakdown voltage	V _{(BR)DSS}	-100	—	—	V	I _D = -10 mA, V _{GS} = 0
Gate to source breakdown voltage	V _{(BR)GSS}	±20	—	—	V	I _G = ±100 μA, V _{DS} = 0
Gate to source leak current	I _{GSS}	—	—	±10	μA	V _{GS} = ±16 V, V _{DS} = 0
Zero gate voltage drain current	I _{DSS}	—	—	-10	μA	V _{DS} = -100 V, V _{GS} = 0
Gate to source cutoff voltage	V _{GS(off)}	-1.0	—	-2.5	V	I _D = -1 mA, V _{DS} = -10 V ^{Note4}
Static drain to source on state resistance	R _{DS(on)}	—	85	105	mΩ	I _D = -7.5 A, V _{GS} = -10 V ^{Note4}
		—	105	150	mΩ	I _D = -7.5 A, V _{GS} = -4.5 V ^{Note4}
Forward transfer admittance	Y _{fs}	7.2	12	—	S	I _D = -7.5 A, V _{DS} = -10 V ^{Note4}
Input capacitance	C _{iss}	—	2600	—	pF	V _{DS} = -10 V V _{GS} = 0 f = 1 MHz
Output capacitance	C _{oss}	—	190	—	pF	
Reverse transfer capacitance	C _{rss}	—	120	—	pF	
Total gate charge	Q _g	—	45	—	nC	
Gate to source charge	Q _{gs}	—	6.5	—	nC	V _{DD} = -50 V V _{GS} = -10 V I _D = -15 A
Gate to drain charge	Q _{gd}	—	9.0	—	nC	
Turn-on delay time	t _{d(on)}	—	23	—	ns	
Rise time	t _r	—	45	—	ns	
Turn-off delay time	t _{d(off)}	—	80	—	ns	V _{GS} = -10 V, I _D = -7.5 A R _L = 4.0 Ω R _g = 4.7 Ω
Fall time	t _f	—	13	—	ns	
Body-drain diode forward voltage	V _{DF}	—	-0.91	—	V	
Body-drain diode reverse recovery time	t _{rr}	—	50	—	ns	
						I _F = -15 A, V _{GS} = 0 di _F /dt = 100 A/μs

Note: 4. Pulse test

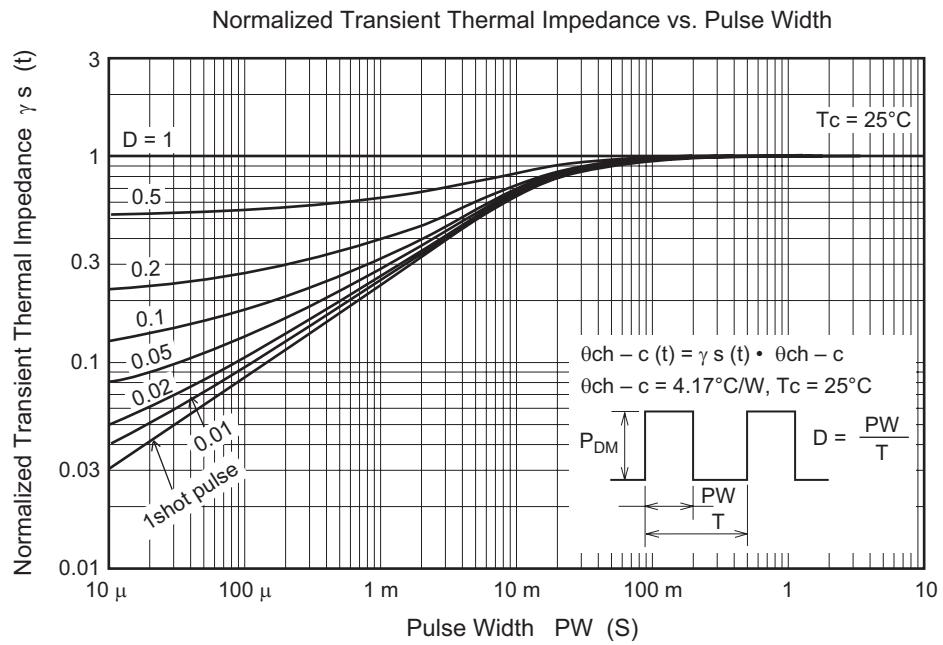
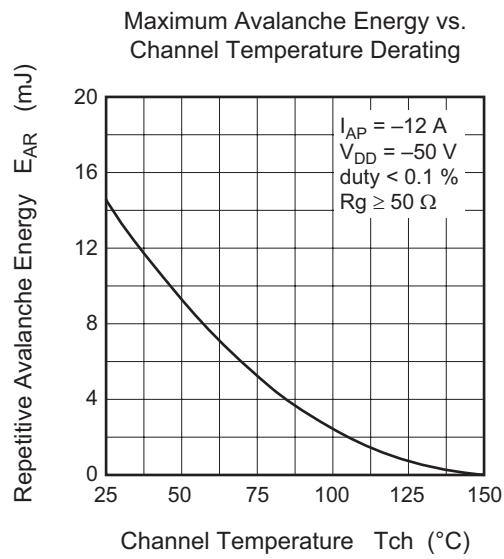
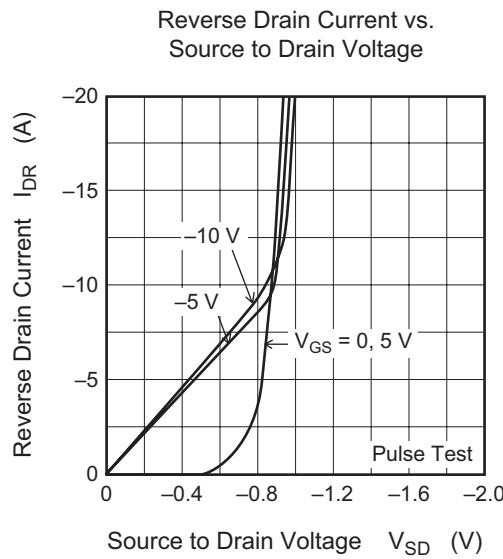
Main Characteristics



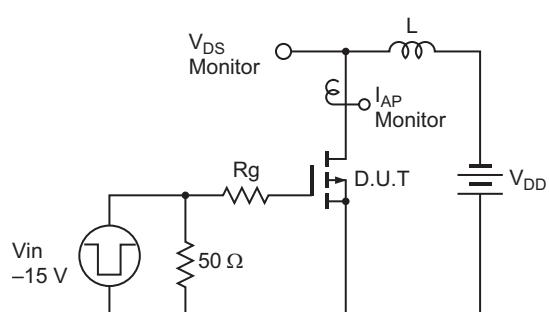
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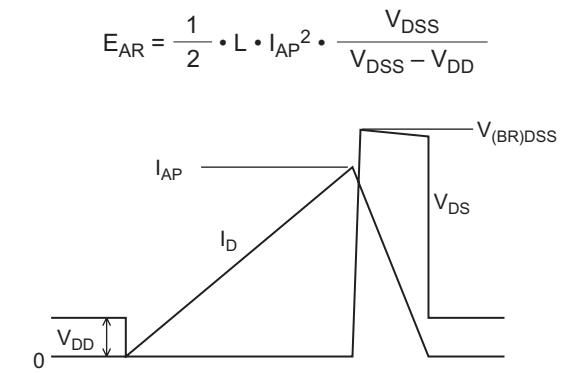
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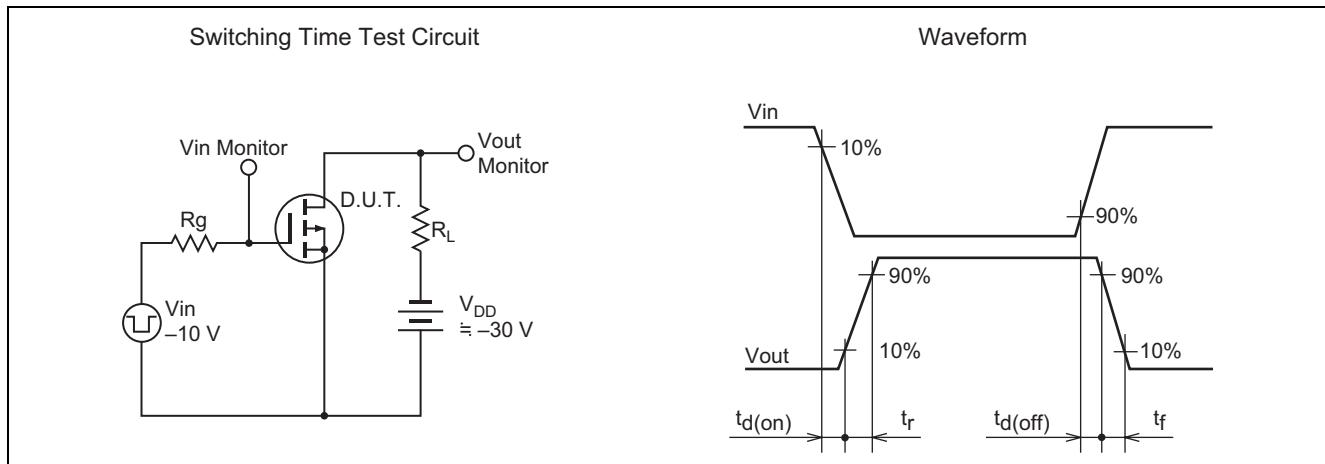
Avalanche Test Circuit



Avalanche Waveform



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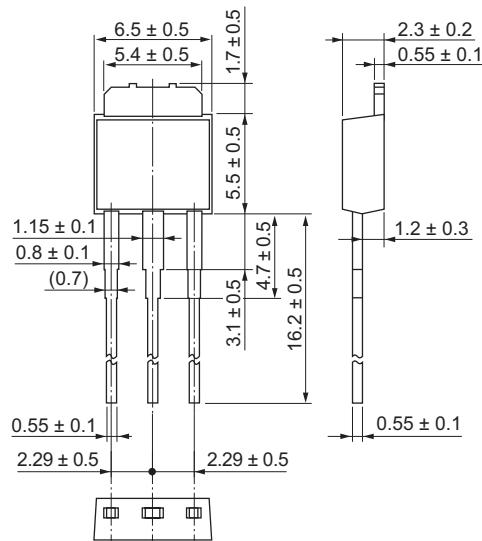
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Package Dimensions

- H7P1002DL

Package Name	JEITA Package Code	RENESAS Code	Previous Code	MASS[Typ.]
DPAK(L)-(2)	—	PRSS004ZD-B	DPAK(L)-(2) / DPAK(L)-(2)V	0.42g

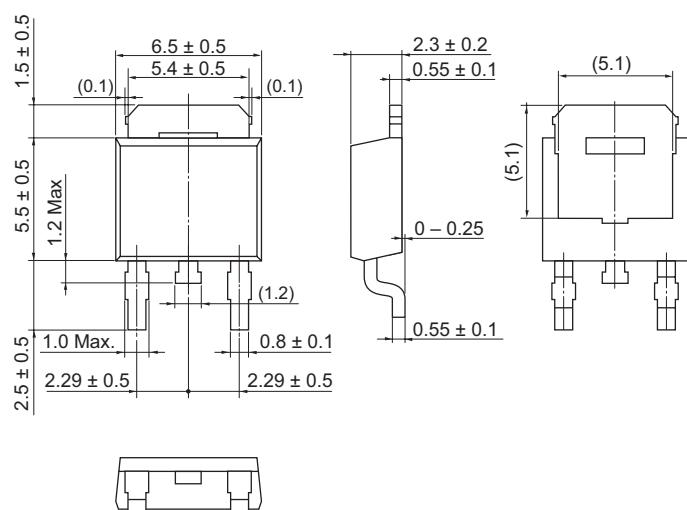
Unit: mm



- H7P1002DS

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

Unit: mm



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Ordering Information

Part No.	Quantity	Shipping Container
H7P1002DL-E	3200 pcs	Hold Box, Radial Taping
H7P1002DSTL-E	3000 pcs	Taping

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