

2SK1151(L), 2SK1151(S) 2SK1152(L), 2SK1152(S)

Silicon N Channel MOS FET

REJ03G0907-0200
(Previous: ADE-208-1245)
Rev.2.00
Sep 07, 2005

Application

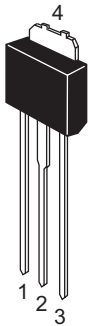
High speed power switching

Features

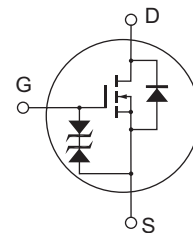
- Low on-resistance
- High speed switching
- Low drive current
- No secondary breakdown
- Suitable for switching regulator and DC-DC converter

Outline

RENESAS Package code: PRSS0004ZD-A
(Package name: DPAK(L)-(1))



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	Ratings	Unit
Drain to source voltage	V_{DS}	450	V
		500	
Gate to source voltage	V_{GS}	±30	V
Drain current	I_D	1.5	A
Drain peak current	$I_{D(pulse)}^{*1}$	6	A
Body to drain diode reverse drain current	I_{DR}	1.5	A
Channel dissipation	P_{ch}^{*2}	20	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

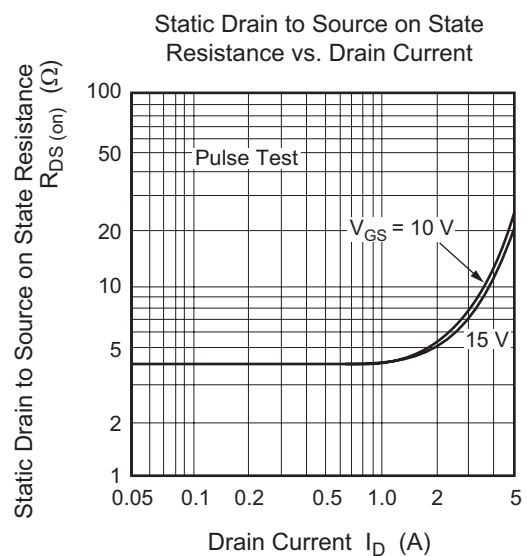
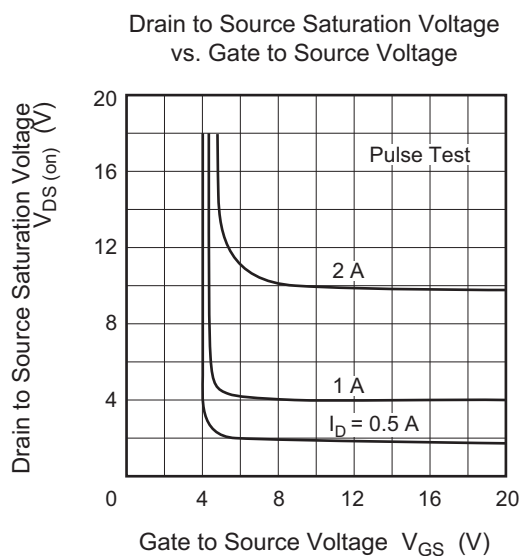
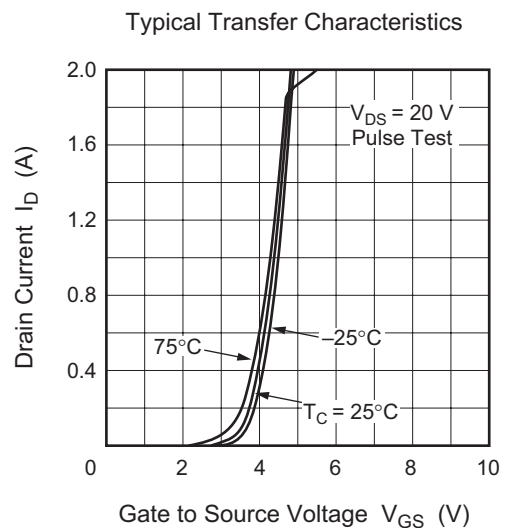
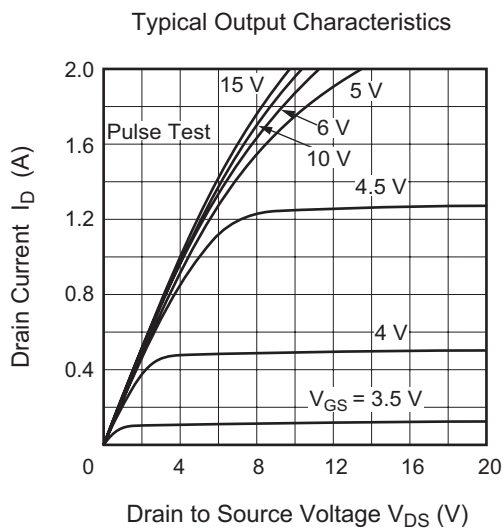
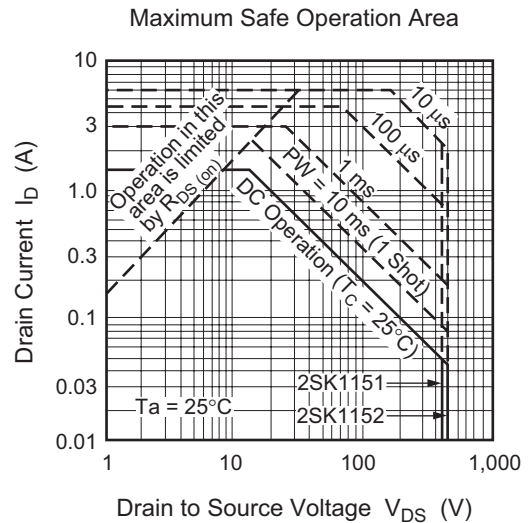
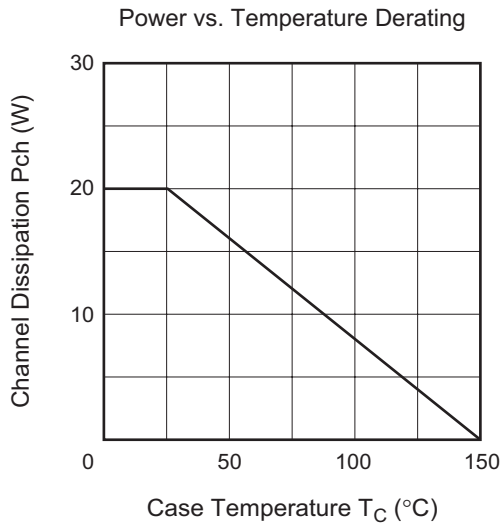
Electrical Characteristics

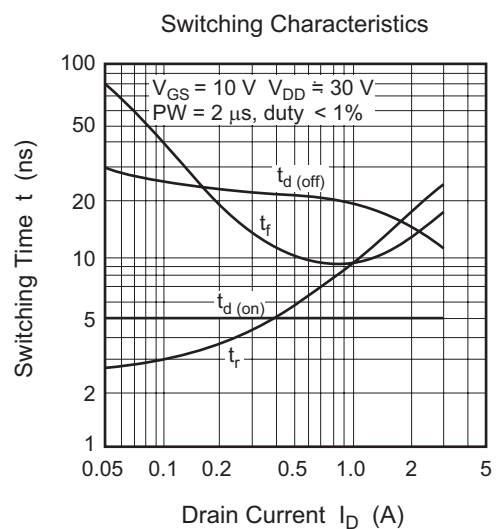
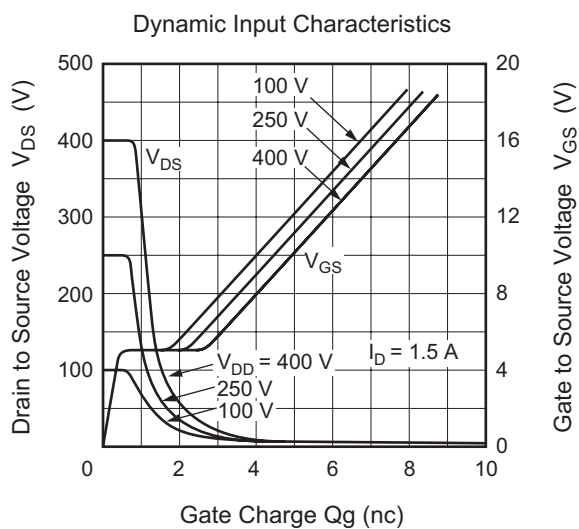
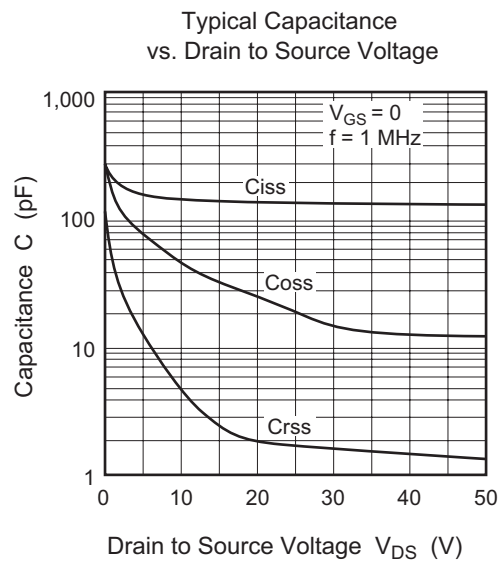
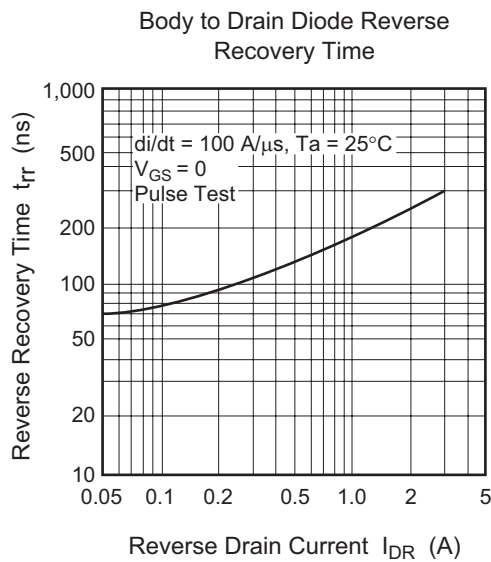
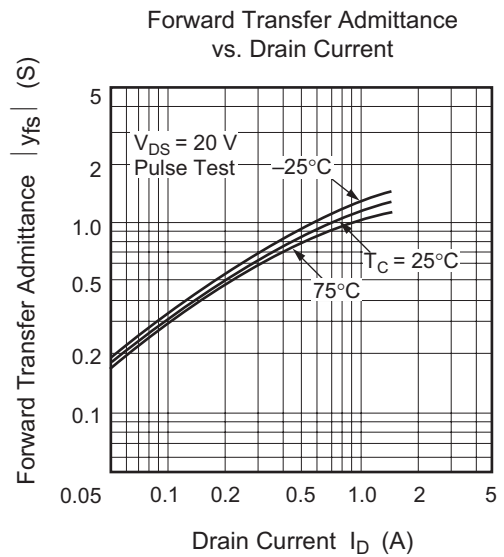
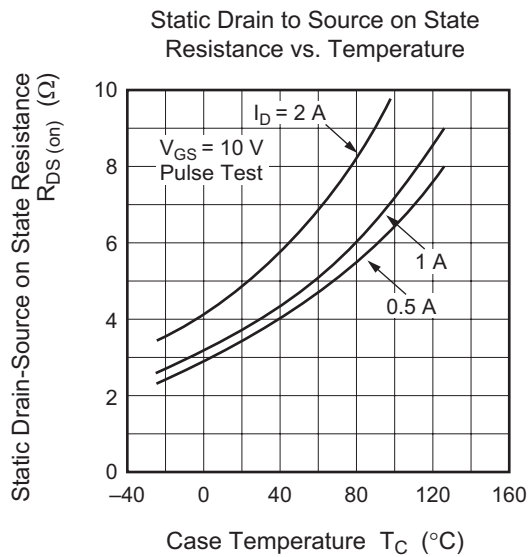
(Ta = 25°C)

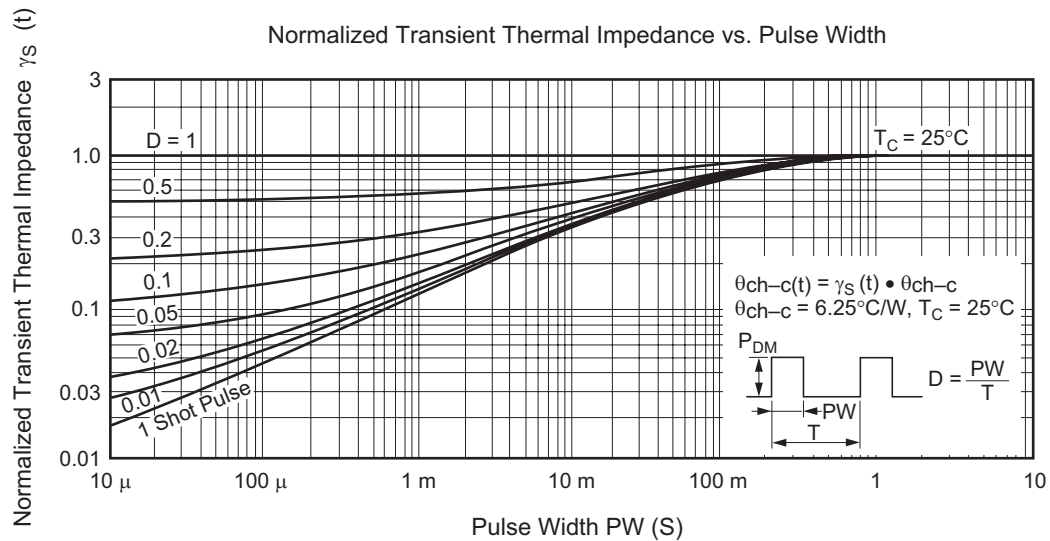
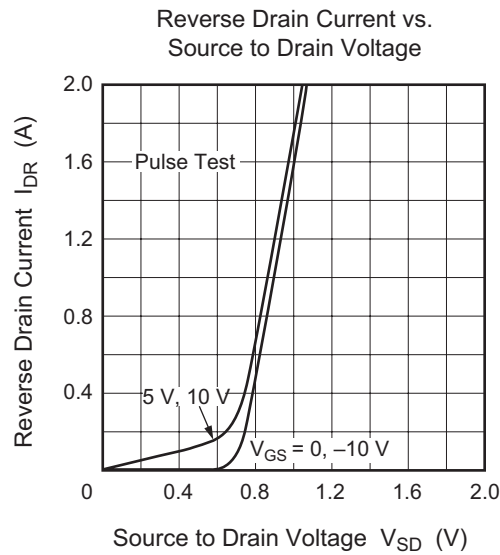
Item	Symbol	Min	Typ	Max	Unit	Test conditions
Drain to source breakdown voltage	$V_{(BR)DSS}$	450	—	—	V	$I_D = 10 \text{ mA}$, $V_{GS} = 0$
		500	—	—	V	
Gate to source breakdown voltage	$V_{(BR)GSS}$	±30	—	—	V	$I_G = \pm 100 \text{ } \mu\text{A}$, $V_{DS} = 0$
Gate to source leak current	I_{GSS}	—	—	±10	μA	$V_{GS} = \pm 25 \text{ V}$, $V_{DS} = 0$
Zero gate voltage drain current	I_{DSS}	—	—	100	μA	$V_{DS} = 360 \text{ V}$, $V_{GS} = 0$
		—	—	—	μA	$V_{DS} = 400 \text{ V}$, $V_{GS} = 0$
Gate to source cutoff voltage	$V_{GS(off)}$	2.0	—	3.0	V	$I_D = 1 \text{ mA}$, $V_{DS} = 10 \text{ V}$
Static drain to source on state resistance	$R_{DS(on)}$	—	3.5	5.5	Ω	$I_D = 1 \text{ A}$, $V_{GS} = 10 \text{ V}^{*3}$
		—	4.0	6.0	Ω	
Forward transfer admittance	$ y_{fs} $	0.6	1.1	—	S	$I_D = 1 \text{ A}$, $V_{DS} = 20 \text{ V}^{*3}$
Input capacitance	C_{iss}	—	160	—	pF	$V_{DS} = 10 \text{ V}$, $V_{GS} = 0$, $f = 1 \text{ MHz}$
Output capacitance	C_{oss}	—	45	—	pF	
Reverse transfer capacitance	C_{rss}	—	5	—	pF	
Turn-on delay time	$t_{d(on)}$	—	5	—	ns	$I_D = 1 \text{ A}$, $V_{GS} = 10 \text{ V}$, $R_L = 30 \text{ } \Omega$
Rise time	t_r	—	10	—	ns	
Turn-off delay time	$t_{d(off)}$	—	20	—	ns	
Fall time	t_f	—	10	—	ns	
Body to drain diode forward voltage	V_{DF}	—	1.0	—	V	$I_F = 1.5 \text{ A}$, $V_{GS} = 0$
Body to drain diode reverse recovery time	t_{rr}	—	220	—	ns	$I_F = 1.5 \text{ A}$, $V_{GS} = 0$, $di_F/dt = 100 \text{ A}/\mu\text{s}$

Note: 3. Pulse test

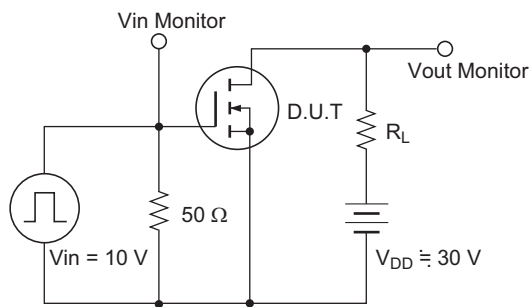
Main Characteristics



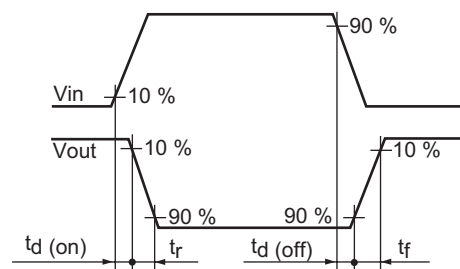




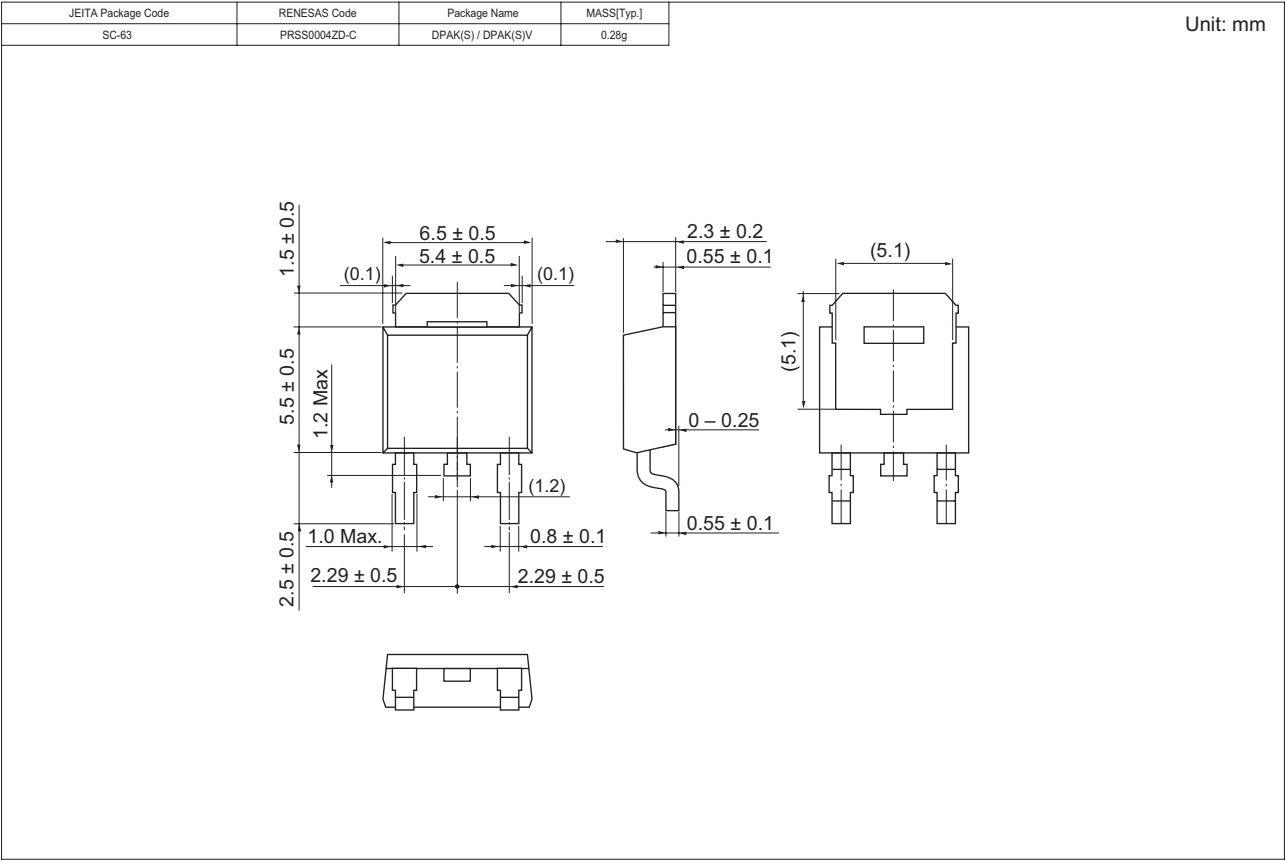
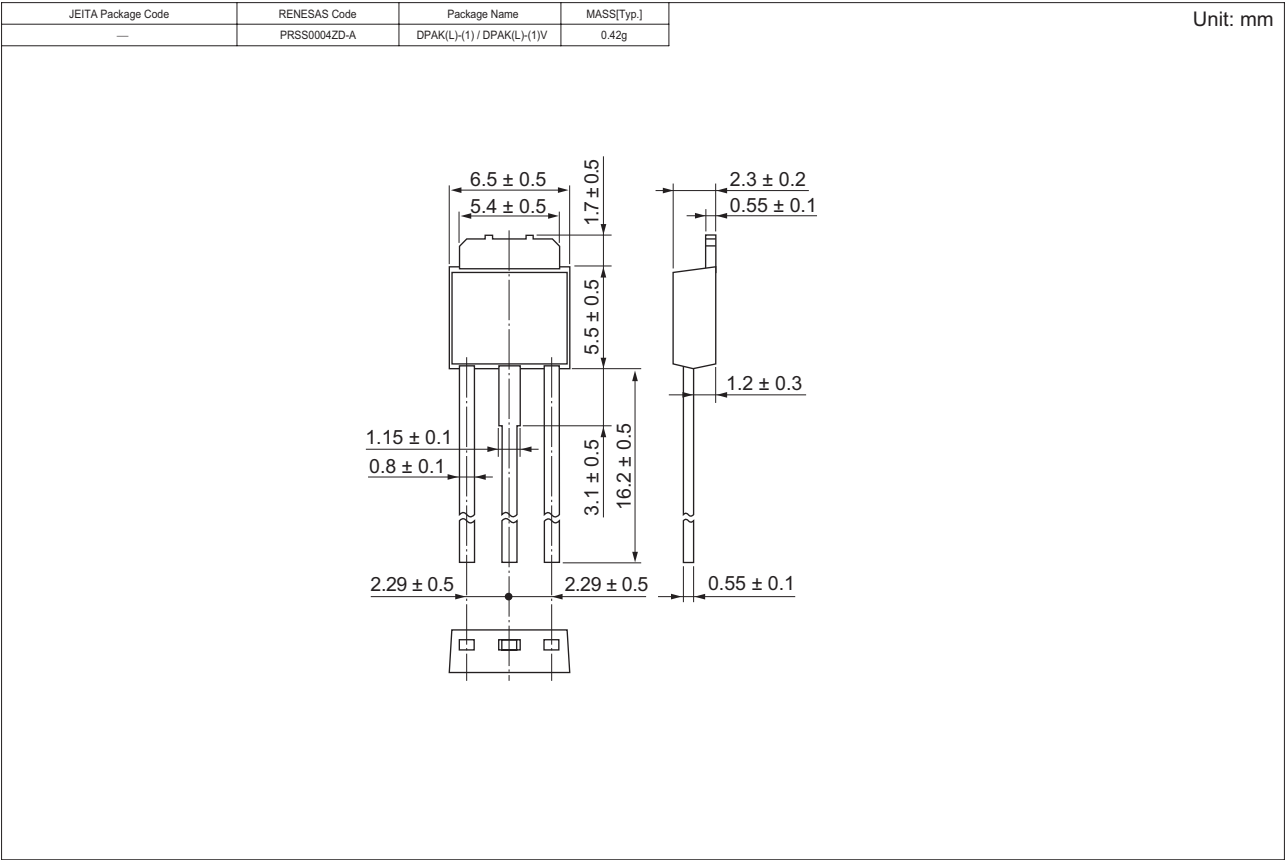
Switching Time Test Circuit



Waveforms



Package Dimensions



Ordering Information

Part Name	Quantity	Shipping Container
2SK1151L-E	3200 pcs	Box (Sack)
2SK1151STL-E	3000 pcs	Taping
2SK1152L-E	3200 pcs	Box (Sack)
2SK1152STL-E	3000 pcs	Taping

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