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Renesas Technology Corp.
Customer Support Dept.
April 1, 2003

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Keep safety first in your circuit designs!

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

Silicon N-Channel MOS FET

RENESAS

ADE-208-1245 (Z)
1st. Edition
Mar. 2001

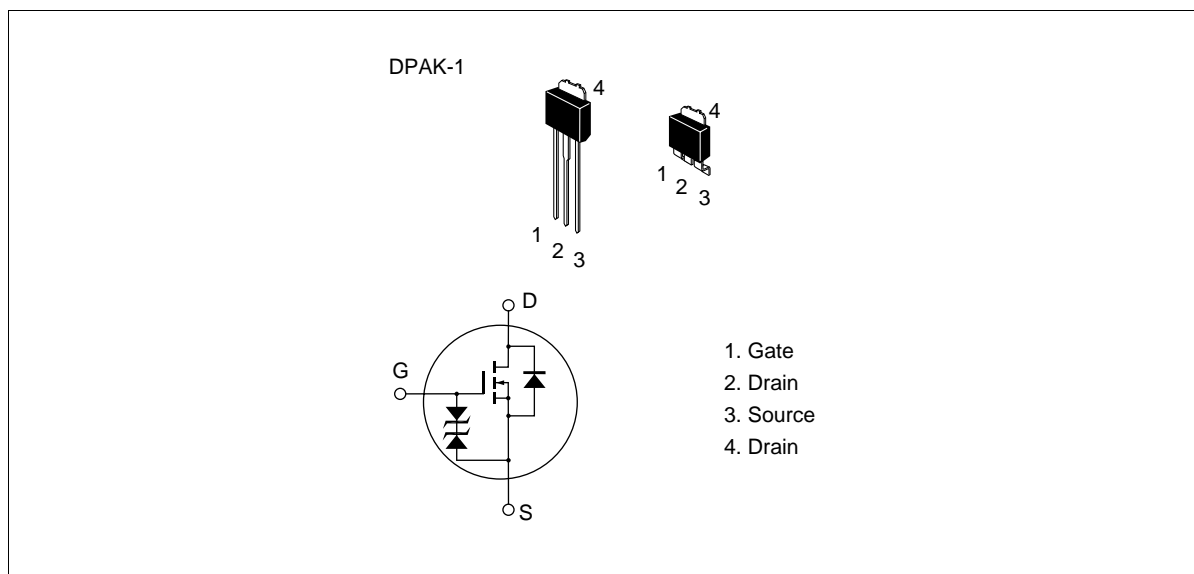
Application

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



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

Absolute Maximum Ratings (Ta = 25°C)

Item		Symbol	Ratings	Unit
Drain to source voltage	2SK1151	V_{DSS}	450	V
	2SK1152		500	
Gate to source voltage		V_{GSS}	±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		Pch^{*2}	20	W
Channel temperature		Tch	150	°C
Storage temperature		Tstg	-55 to +150	°C

Notes: 1. $PW \leq 10 \mu s$, duty cycle $\leq 1\%$

2. Value at $T_C = 25^\circ C$

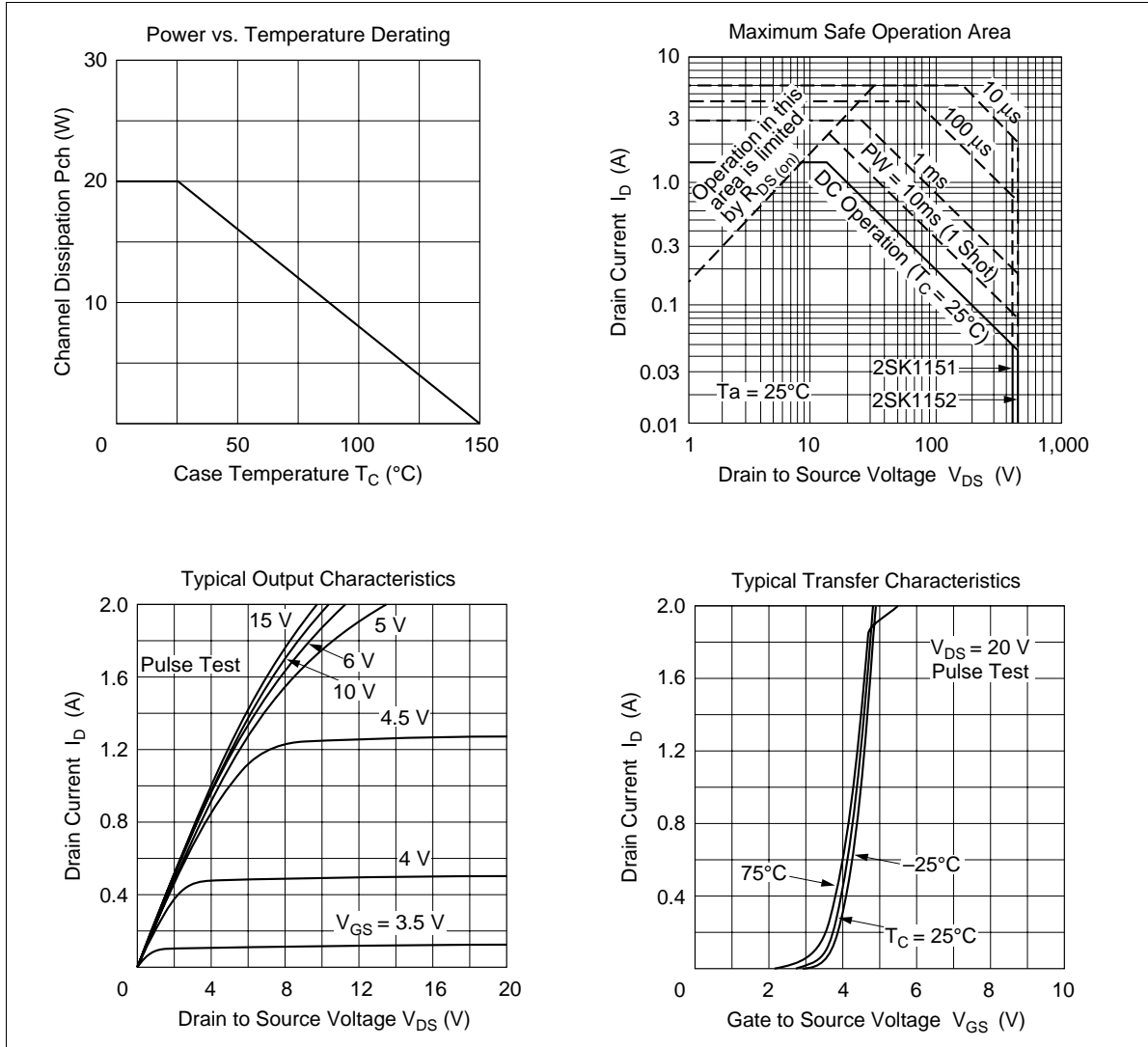
2SK1151(L)(S), 2SK1152(L)(S)

Electrical Characteristics (T_a = 25°C)

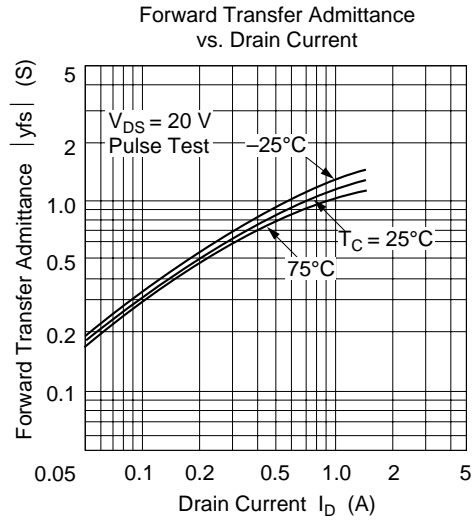
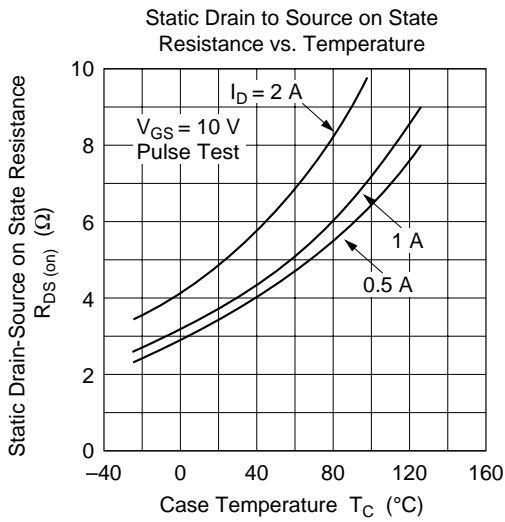
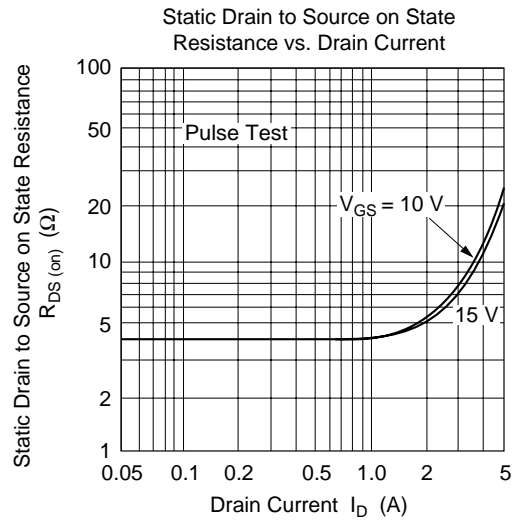
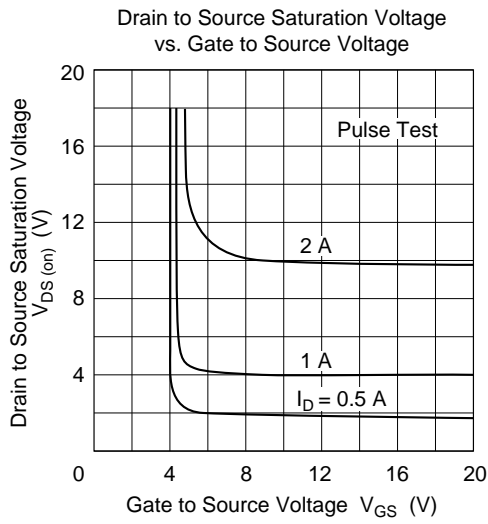
Item	Symbol	Min	Typ	Max	Unit	Test conditions
Drain to source breakdown voltage	2SK1151 $V_{(BR)DSS}$ 2SK1152	450 500	—	—	V	$I_D = 10 \text{ mA}, V_{GS} = 0$
Gate to source breakdown voltage	$V_{(BR)GSS}$	±30	—	—	V	$I_G = \pm 100 \text{ } \mu\text{A}, V_{DS} = 0$
Gate to source leak current	I_{GSS}	—	—	±10	μA	$V_{GS} = \pm 25 \text{ V}, V_{DS} = 0$
Zero gate voltage drain current	2SK1151 I_{DSS} 2SK1152	—	—	100	μA	$V_{DS} = 360 \text{ V}, V_{GS} = 0$ $V_{DS} = 400 \text{ V}, V_{GS} = 0$
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 statesresistance	2SK1151 $R_{DS(on)}$ 2SK1152	—	3.5 4.0	5.5 6.0	Ω	$I_D = 1 \text{ A}, V_{GS} = 10 \text{ V}^{*1}$
Forward transfer admittance	y _{fs}	0.6	1.1	—	S	$I_D = 1 \text{ A}, V_{DS} = 20 \text{ V}^{*1}$
Input capacitance	C _{iss}	—	160	—	pF	$V_{DS} = 10 \text{ V}, V_{GS} = 0,$
Output capacitance	C _{oss}	—	45	—	pF	f = 1 MHz
Reverse transfer capacitance	C _{rss}	—	5	—	pF	
Turn-on delay time	t _{d(on)}	—	5	—	ns	$I_D = 1 \text{ A}, V_{GS} = 10 \text{ V},$
Rise time	t _r	—	10	—	ns	R _L = 30 Ω
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 A/μs

Note: 1. Pulse test

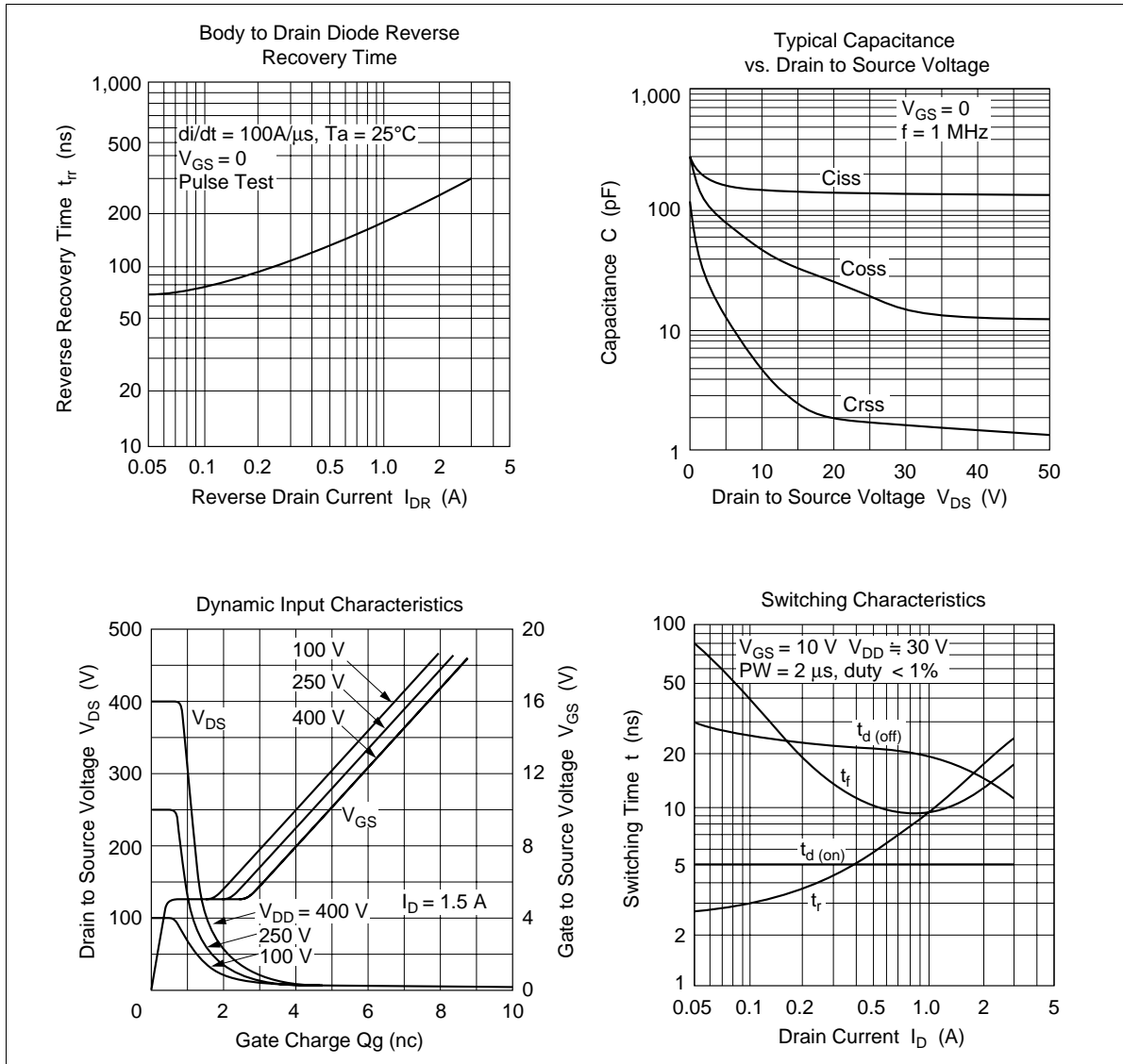
2SK1151(L)(S), 2SK1152(L)(S)



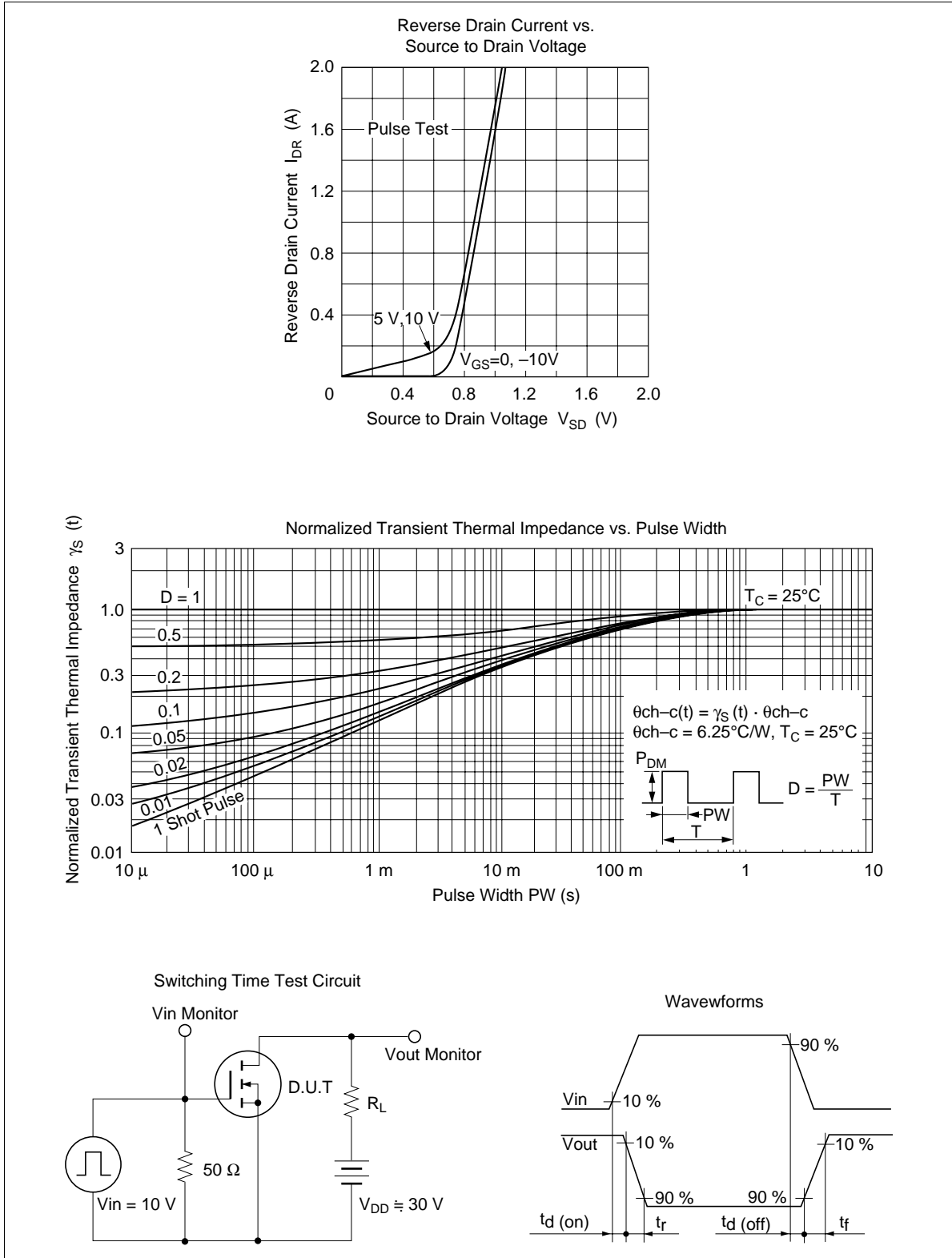
2SK1151(L)(S), 2SK1152(L)(S)



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

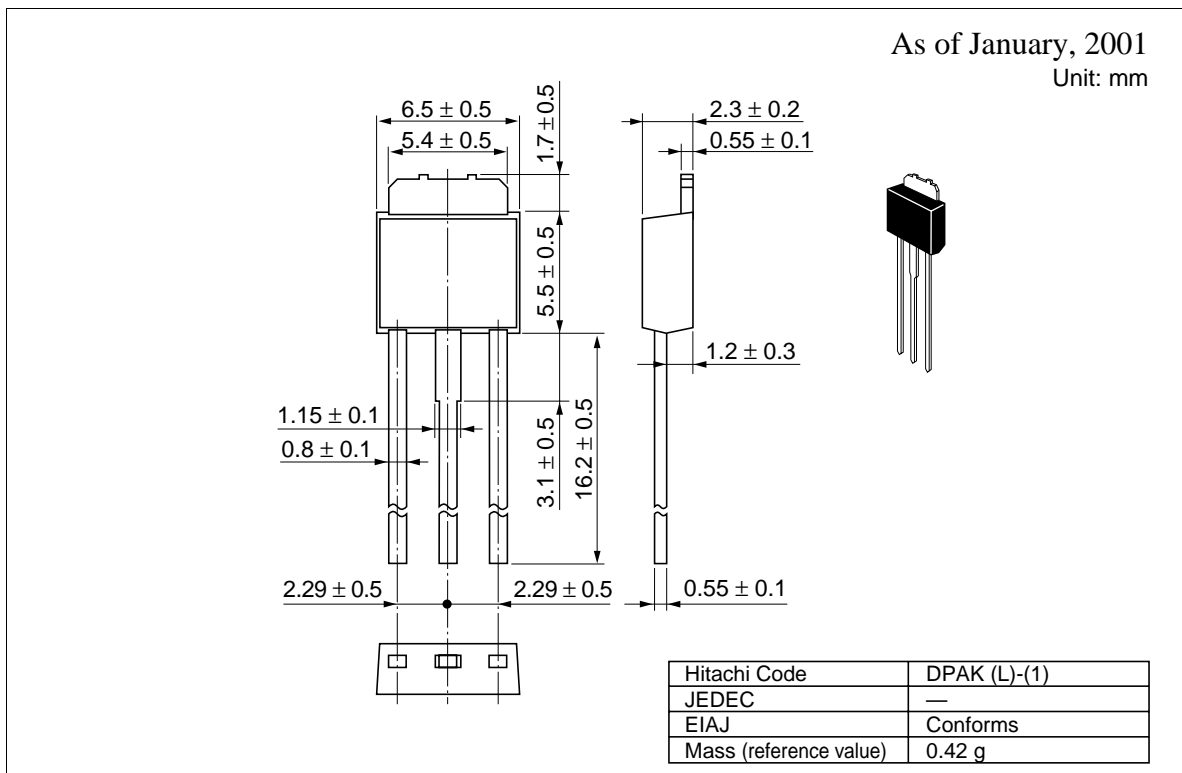


2SK1151(L)(S), 2SK1152(L)(S)



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

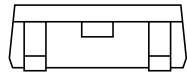
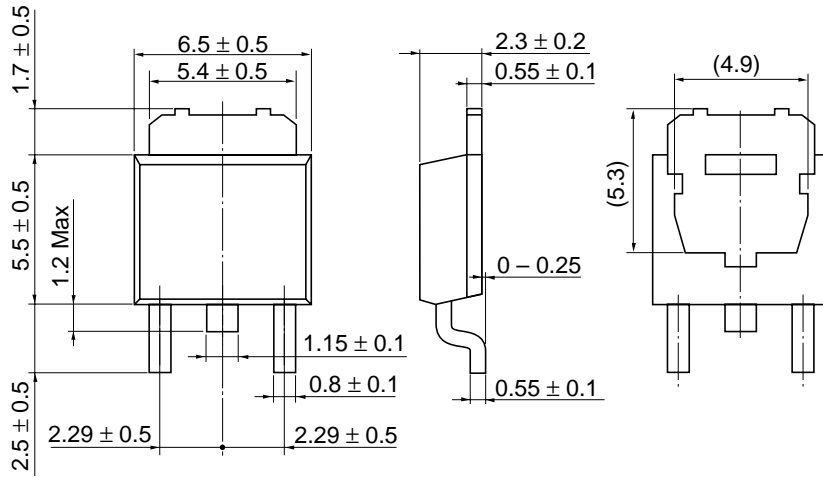
Package Dimensions



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

As of January, 2001

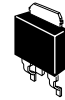
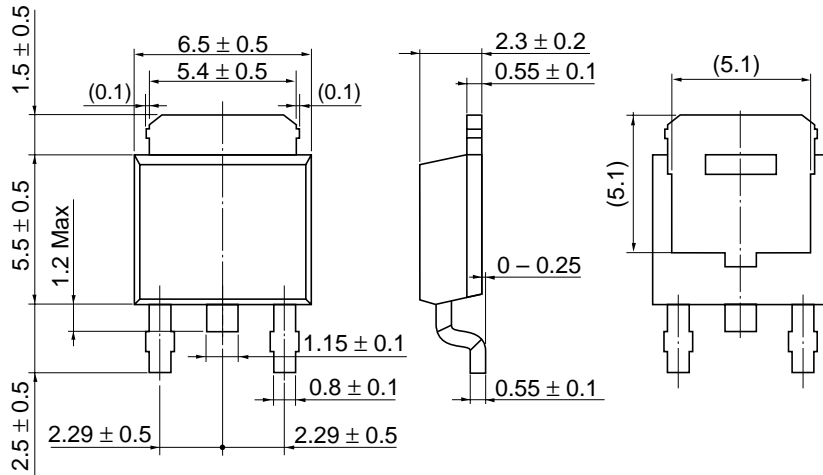
Unit: mm



Hitachi Code	DPAK (S)-(1),(2)
JEDEC	—
EIAJ	Conforms
Mass (reference value)	0.28 g

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

As of January, 2001
Unit: mm



Hitachi Code	DPAK (S)-(3)
JEDEC	—
EIAJ	Conforms
Mass (reference value)	0.28 g

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