



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

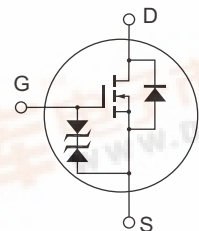
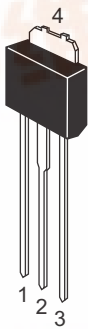
Features

- 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 _{DSS}	450	V
		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	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

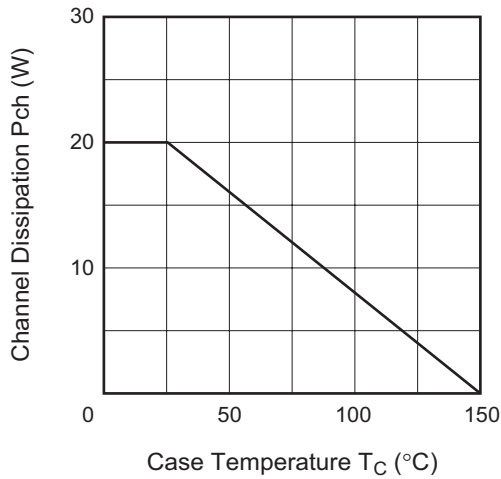
(Ta = 25°C)

Item	Symbol	Min	Typ	Max	Unit	Test conditions
Drain to source breakdown voltage	V _{(BR)DSS}	450	—	—	V	I _D = 10 mA, V _{GS} = 0
		500				
Gate to source breakdown voltage	V _{(BR)GSS}	±30	—	—	V	I _G = ±100 μA, V _{DS} = 0
Gate to source leak current	I _{GSS}	—	—	±10	μA	V _{GS} = ±25 V, V _{DS} = 0
Zero gate voltage drain current	I _{DSS}	—	—	100	μA	V _{DS} = 360 V, V _{GS} = 0
						V _{DS} = 400 V, V _{GS} = 0
Gate to source cutoff voltage	V _{GS(off)}	2.0	—	3.0	V	I _D = 1 mA, V _{DS} = 10 V
Static drain to source on state resistance	R _{DS(on)}	—	3.5	5.5	Ω	I _D = 1 A, V _{GS} = 10 V * ³
		—	4.0	6.0		
Forward transfer admittance	y _{fs}	0.6	1.1	—	S	I _D = 1 A, V _{DS} = 20 V * ³
Input capacitance	C _{iss}	—	160	—	pF	V _{DS} = 10 V, V _{GS} = 0, f = 1 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 A, V _{GS} = 10 V, R _L = 30 Ω
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 A, V _{GS} = 0
Body to drain diode reverse recovery time	t _{rr}	—	220	—	ns	I _F = 1.5 A, V _{GS} = 0, di _F /dt = 100 A/μs

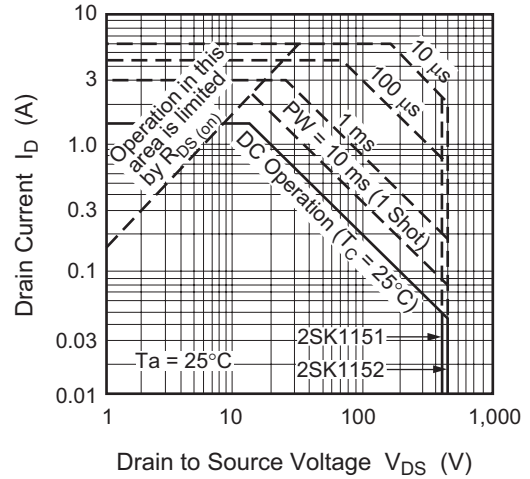
Note: 3. Pulse test

Main Characteristics

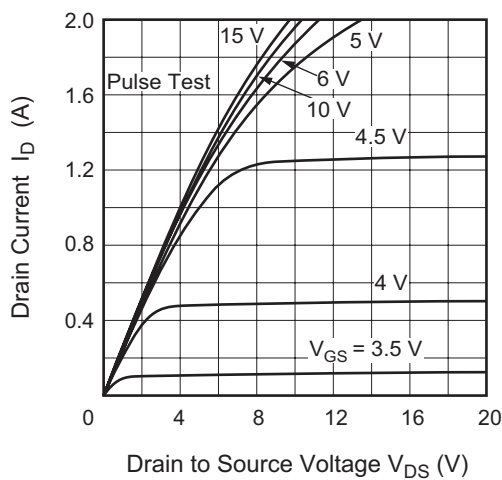
Power vs. Temperature Derating



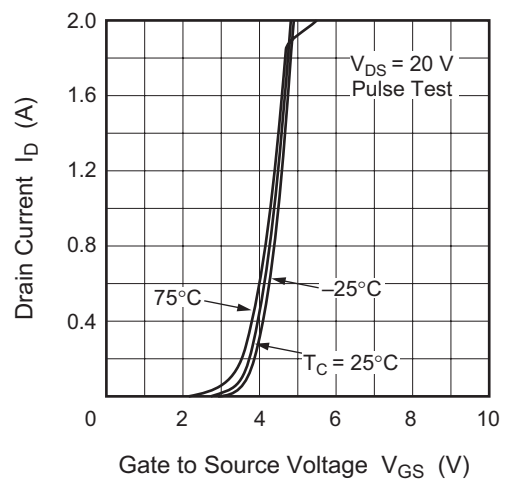
Maximum Safe Operation Area



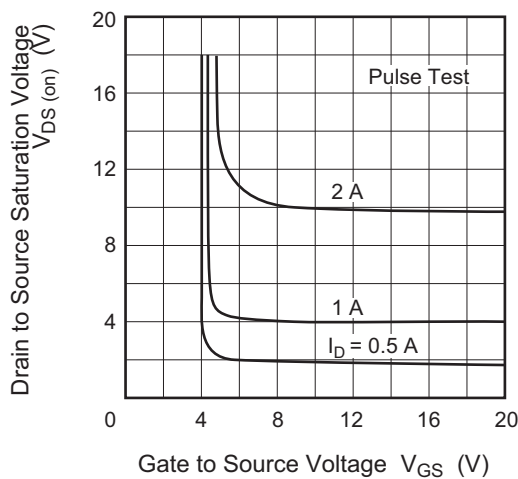
Typical Output Characteristics



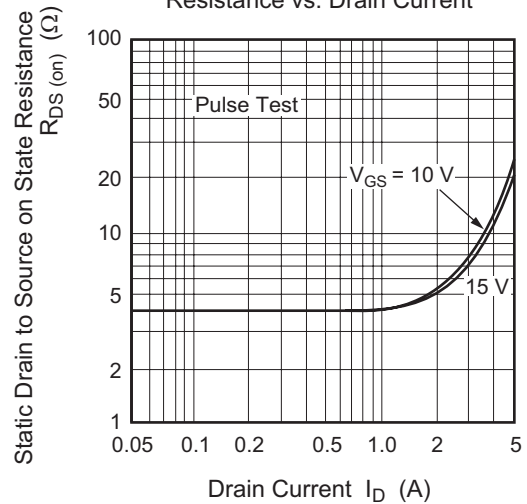
Typical Transfer Characteristics

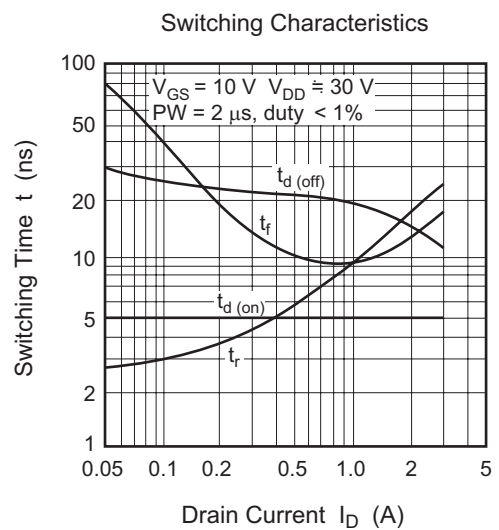
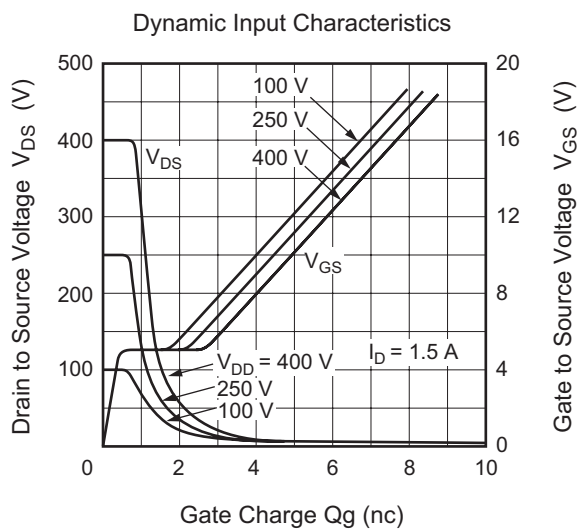
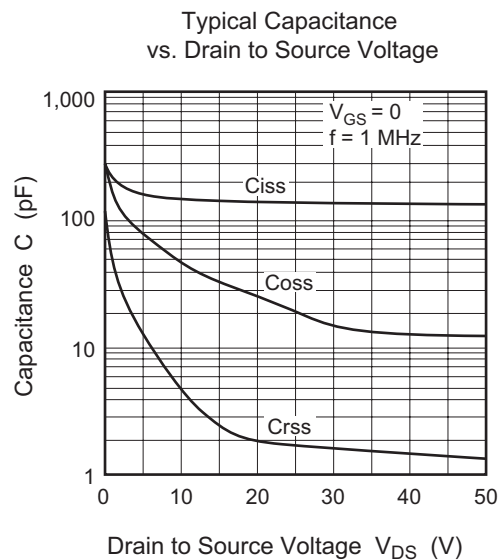
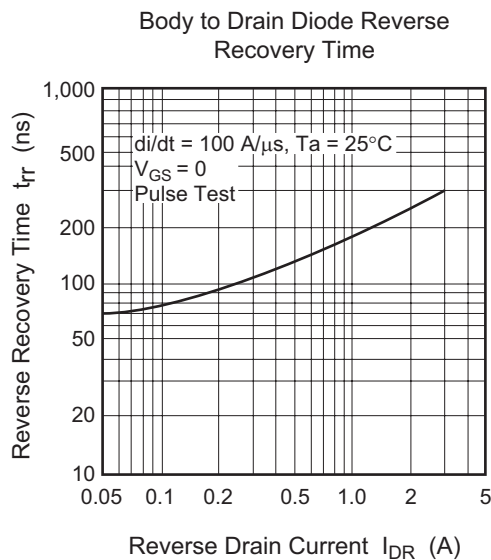
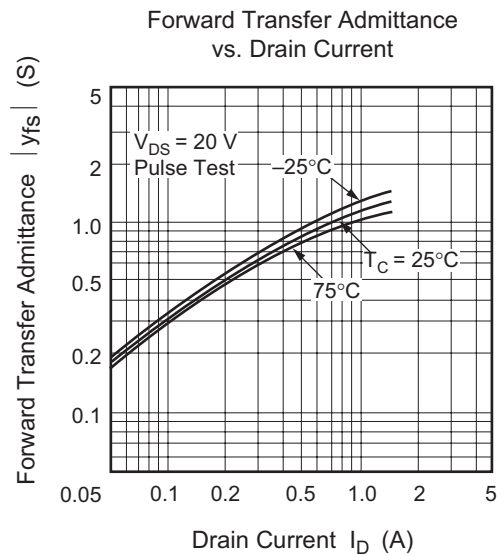
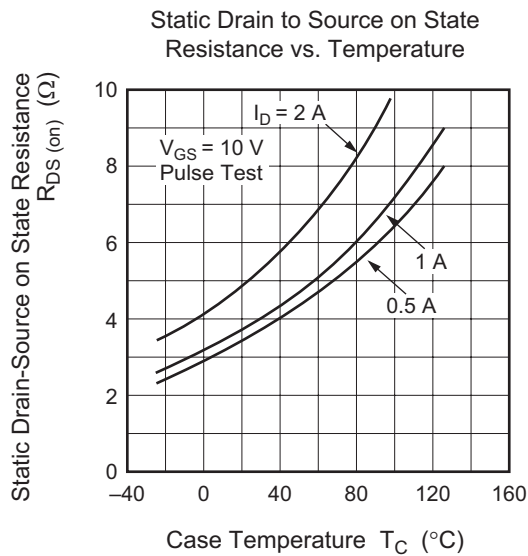


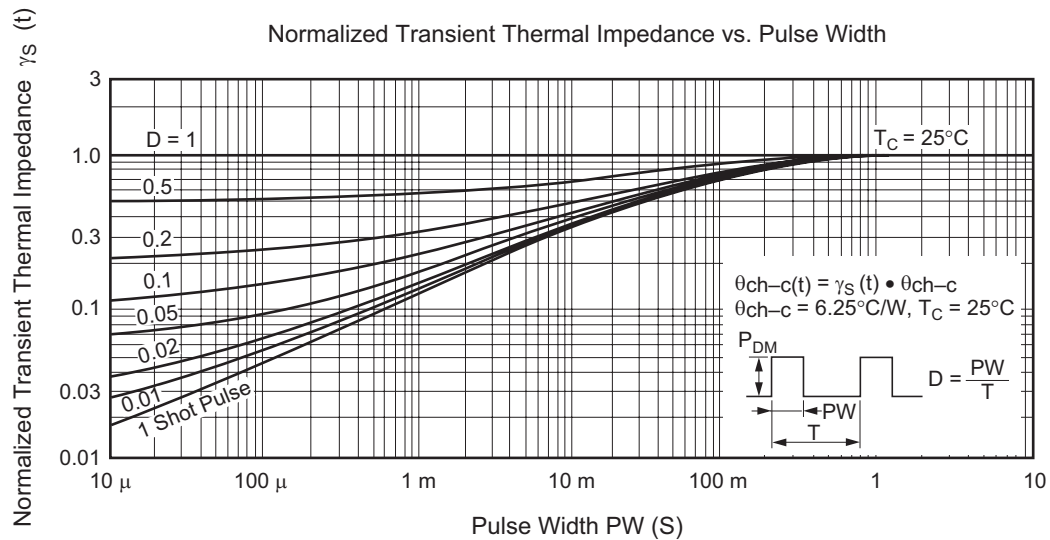
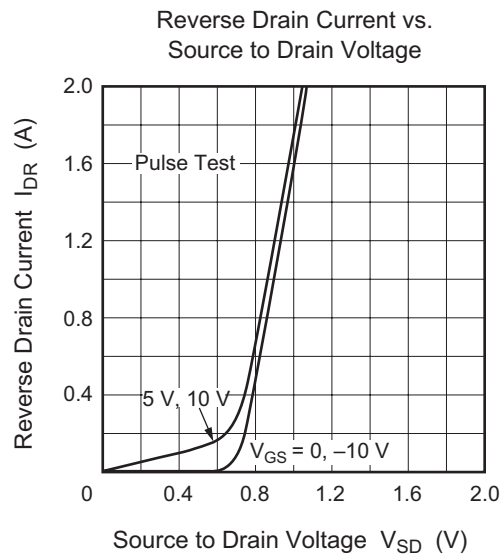
Drain to Source Saturation Voltage vs. Gate to Source Voltage



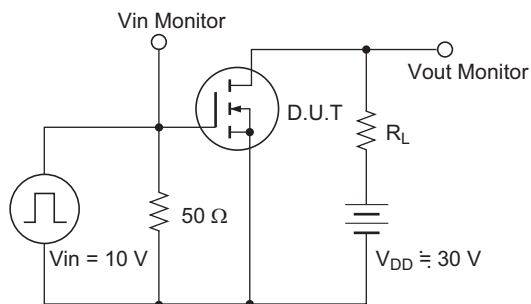
Static Drain to Source on State Resistance vs. Drain Current



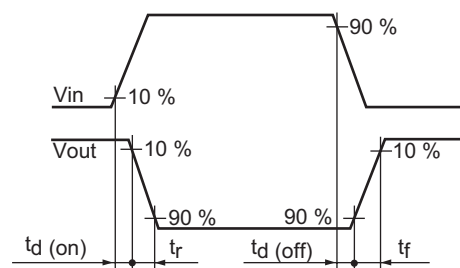




Switching Time Test Circuit

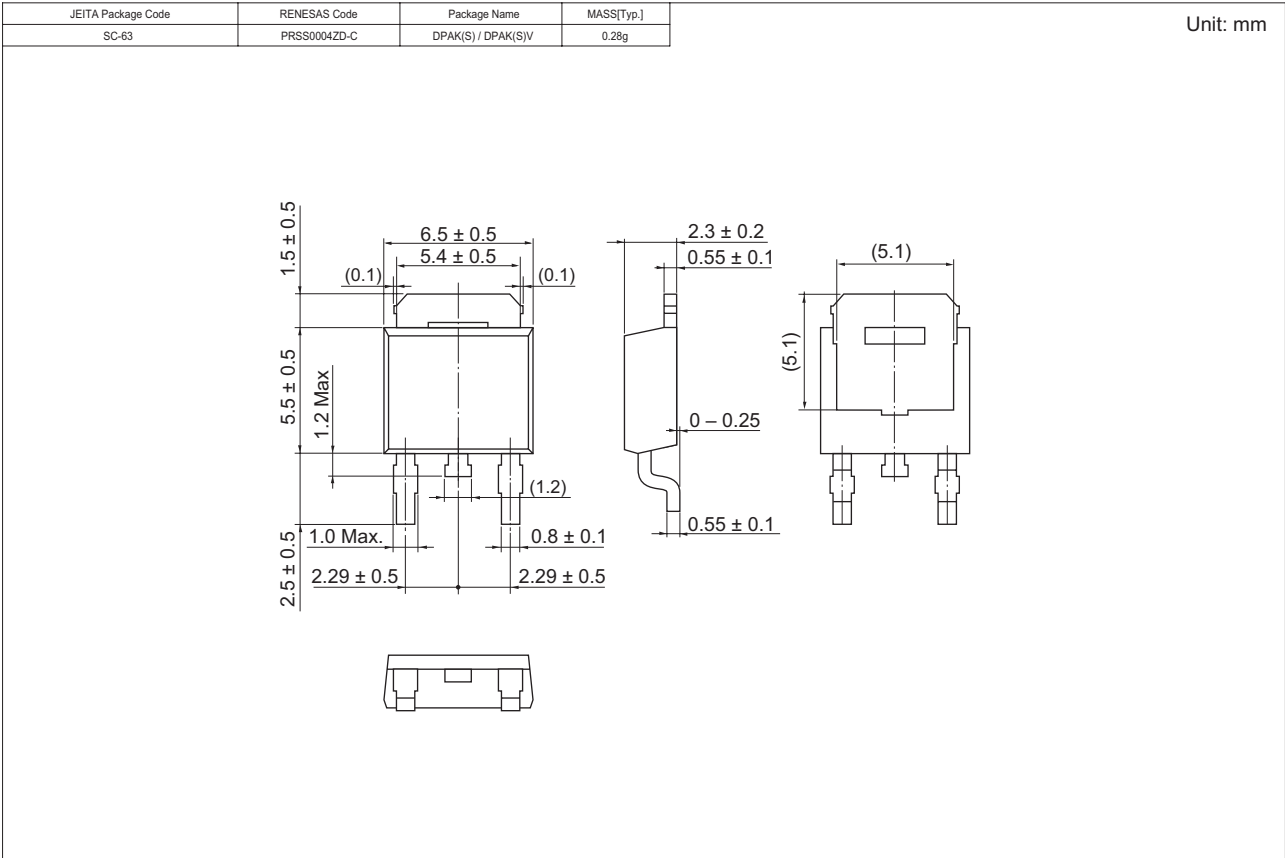
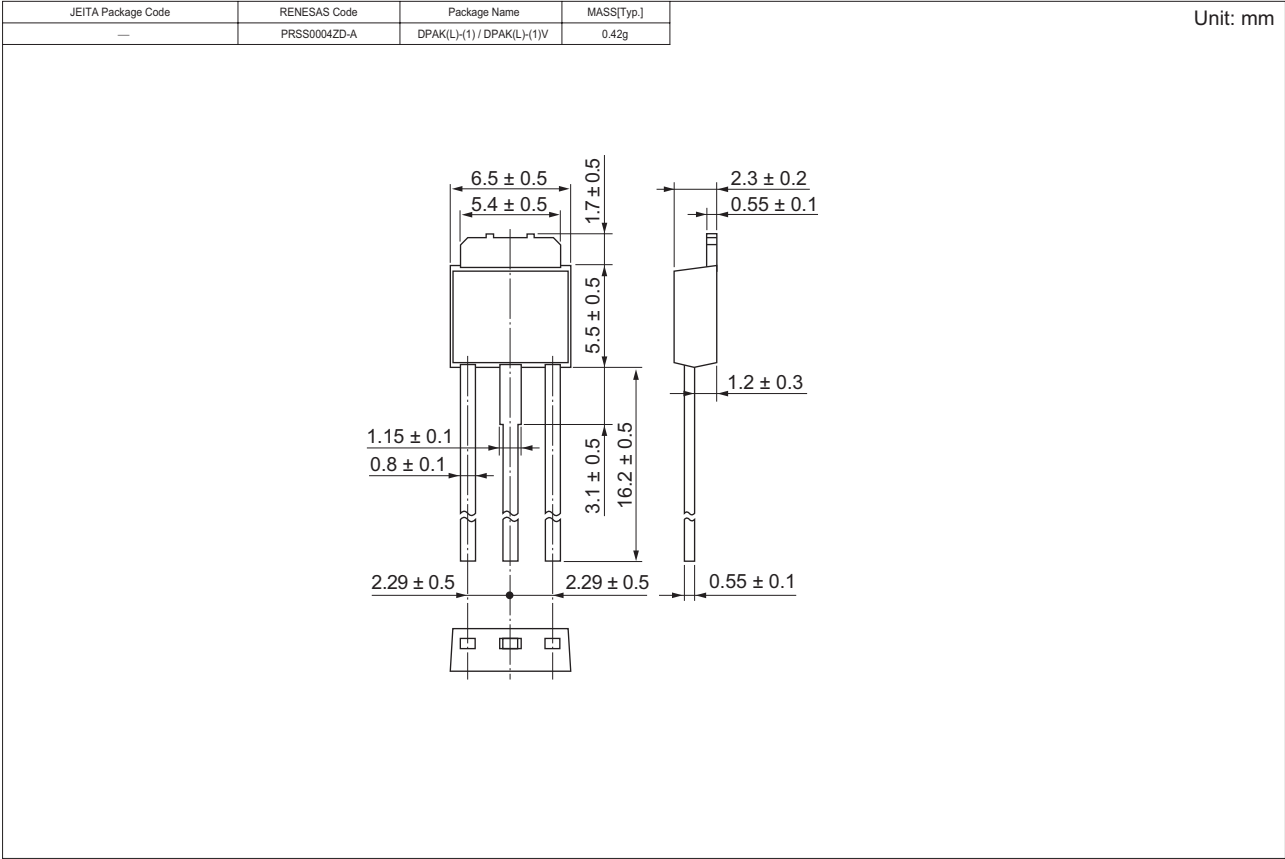


Waveforms



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

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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