

2SK1313(L), 2SK1313(S) 2SK1314(L), 2SK1314(S)

Silicon N Channel MOS FET

REJ03G0927-0200
(Previous: ADE-208-1266)
Rev.2.00
Sep 07, 2005

Application

High speed power switching

Features

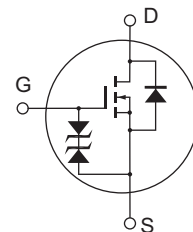
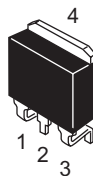
- Low on-resistance
- High speed switching
- Low drive current
- No secondary breakdown
- Suitable for switching regulator and DC-DC converter

Outline

RENESAS Package code: PRSS0004AE-A
(Package name: LDKPAK(L))



RENESAS Package code: PRSS0004AE-B
(Package name: LDKPAK(S)-(1))



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

Absolute Maximum Ratings

(Ta = 25°C)

Item	Symbol	Ratings	Unit
Drain to source voltage	2SK1313	450	V
	2SK1314	500	
Gate to source voltage	V _{GSS}	±30	V
Drain current	I _D	5	A
Drain peak current	I _{D(pulse)} *1	20	A
Body to drain diode reverse drain current	I _{DR}	5	A
Channel dissipation	P _{ch} *2	50	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

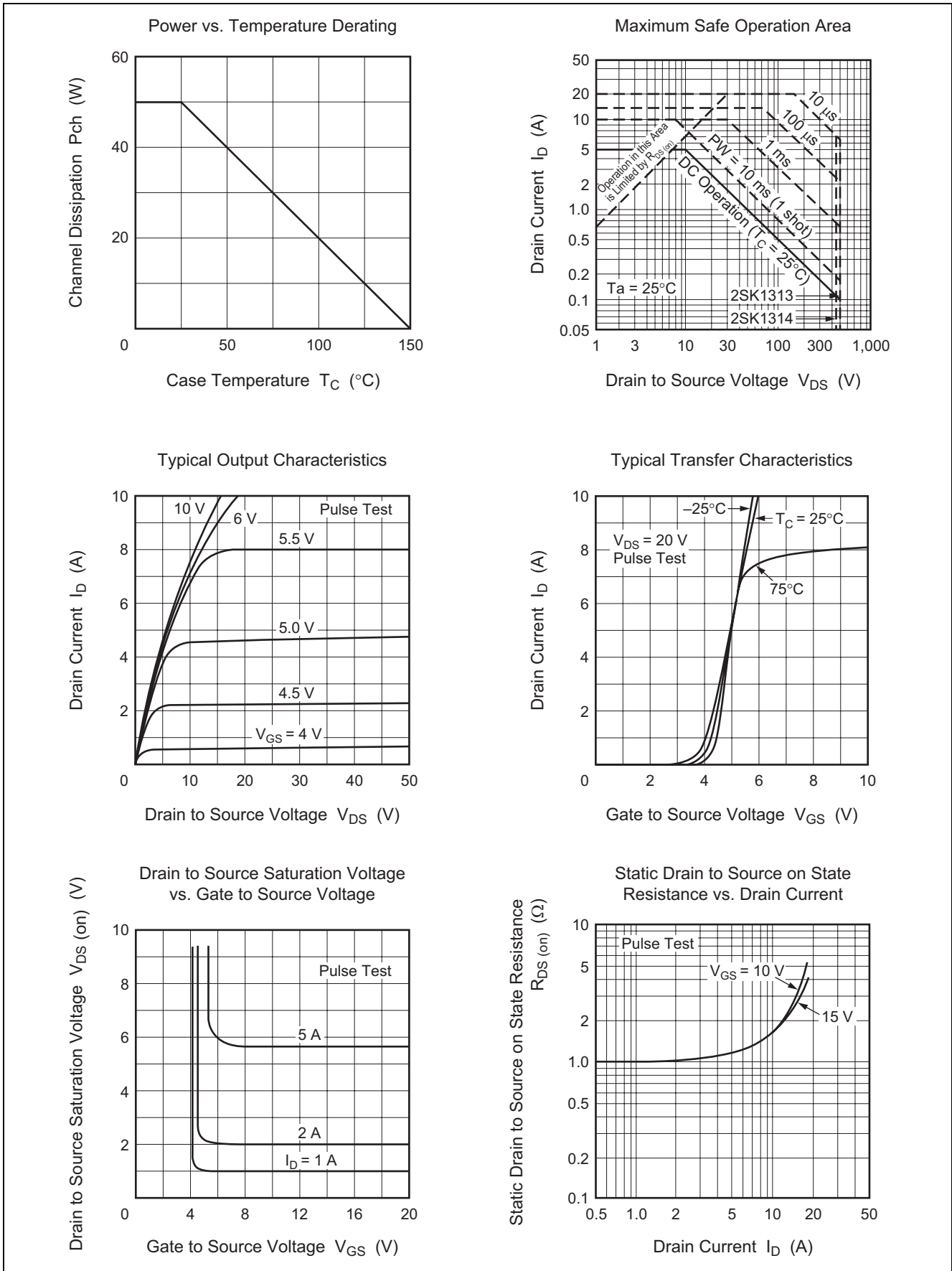
Electrical Characteristics

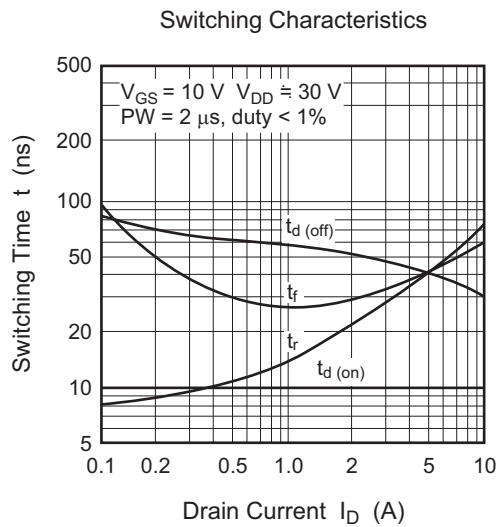
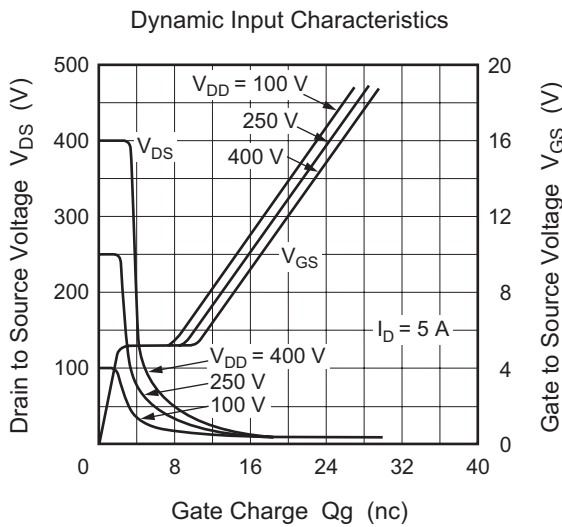
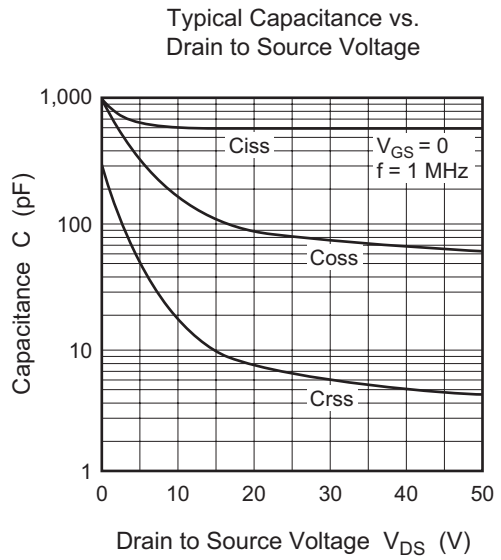
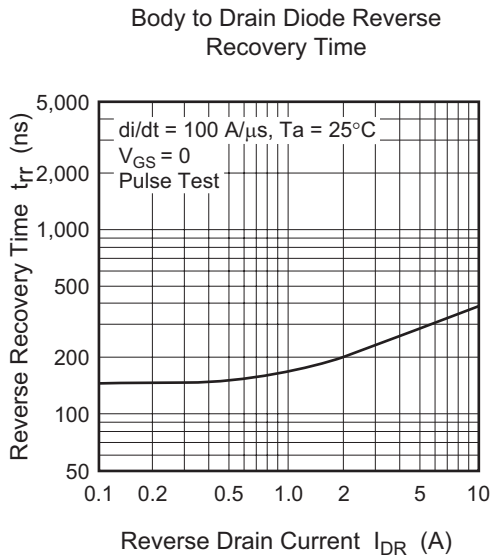
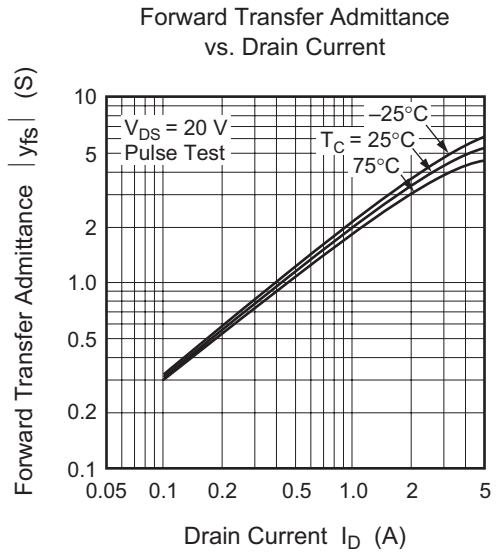
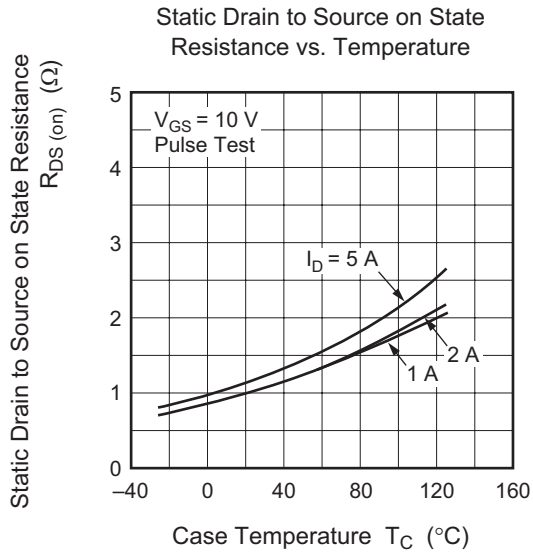
(Ta = 25°C)

Item	Symbol	Min	Typ	Max	Unit	Test conditions	
Drain to source breakdown voltage	2SK1313	V _{(BR)DSS}	450	—	—	V	I _D = 10 mA, V _{GS} = 0
	2SK1314		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	2SK1313	I _{DSS}	—	—	250	μA	V _{DS} = 360 V, V _{GS} = 0
	2SK1314						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	2SK1313	R _{DS(on)}	—	1.0	1.4	Ω	I _D = 2.5 A, V _{GS} = 10 V *3
	2SK1314			1.2	1.5		
Forward transfer admittance	y _{fs}	2.5	4.0	—	S	I _D = 2.5 A, V _{DS} = 10 V *3	
Input capacitance	C _{iss}	—	640	—	pF	V _{DS} = 10 V, V _{GS} = 0, f = 1 MHz	
Output capacitance	C _{oss}	—	160	—	pF		
Reverse transfer capacitance	C _{rss}	—	20	—	pF		
Turn-on delay time	t _{d(on)}	—	10	—	ns		
Rise time	t _r	—	25	—	ns	I _D = 2.5 A, V _{GS} = 10 V, R _L = 12 Ω	
Turn-off delay time	t _{d(off)}	—	50	—	ns		
Fall time	t _f	—	30	—	ns		
Body to drain diode forward voltage	V _{DF}	—	0.95	—	V	I _F = 5 A, V _{GS} = 0	
Body to drain diode reverse recovery time	t _{rr}	—	300	—	ns	I _F = 5 A, V _{GS} = 0, di _F /dt = 100 A/μs	

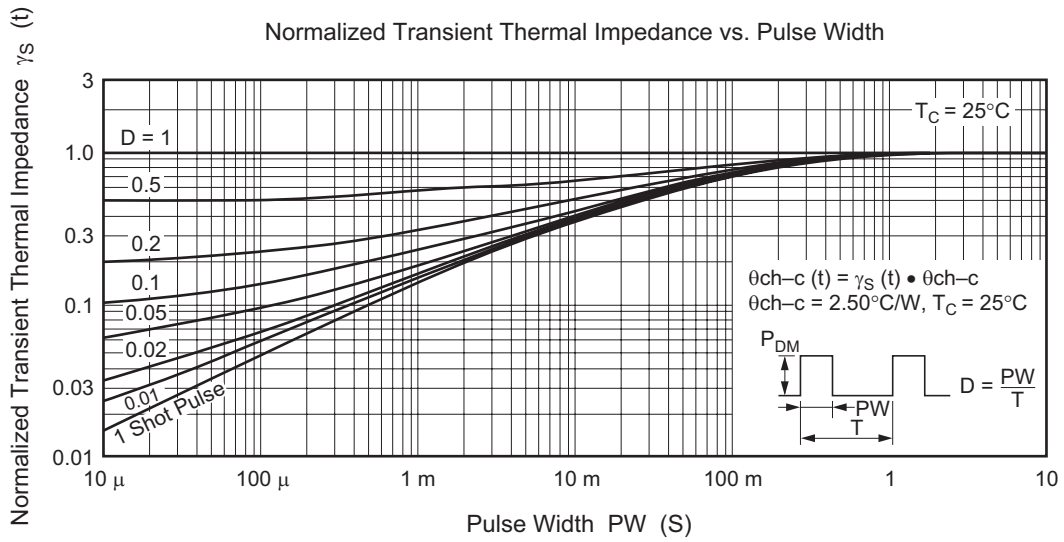
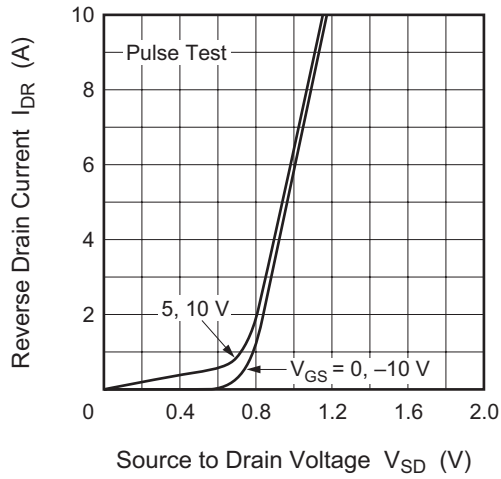
Note: 3. Pulse test

Main Characteristics

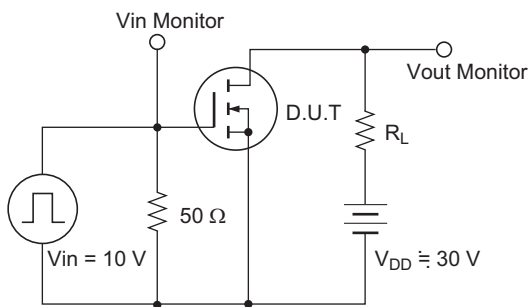




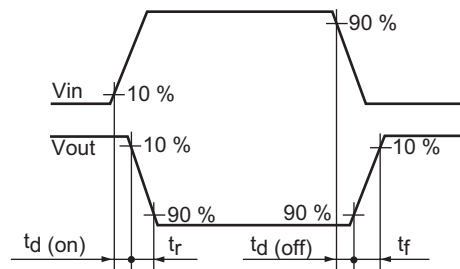
Reverse Drain Current vs. Source to Drain Voltage



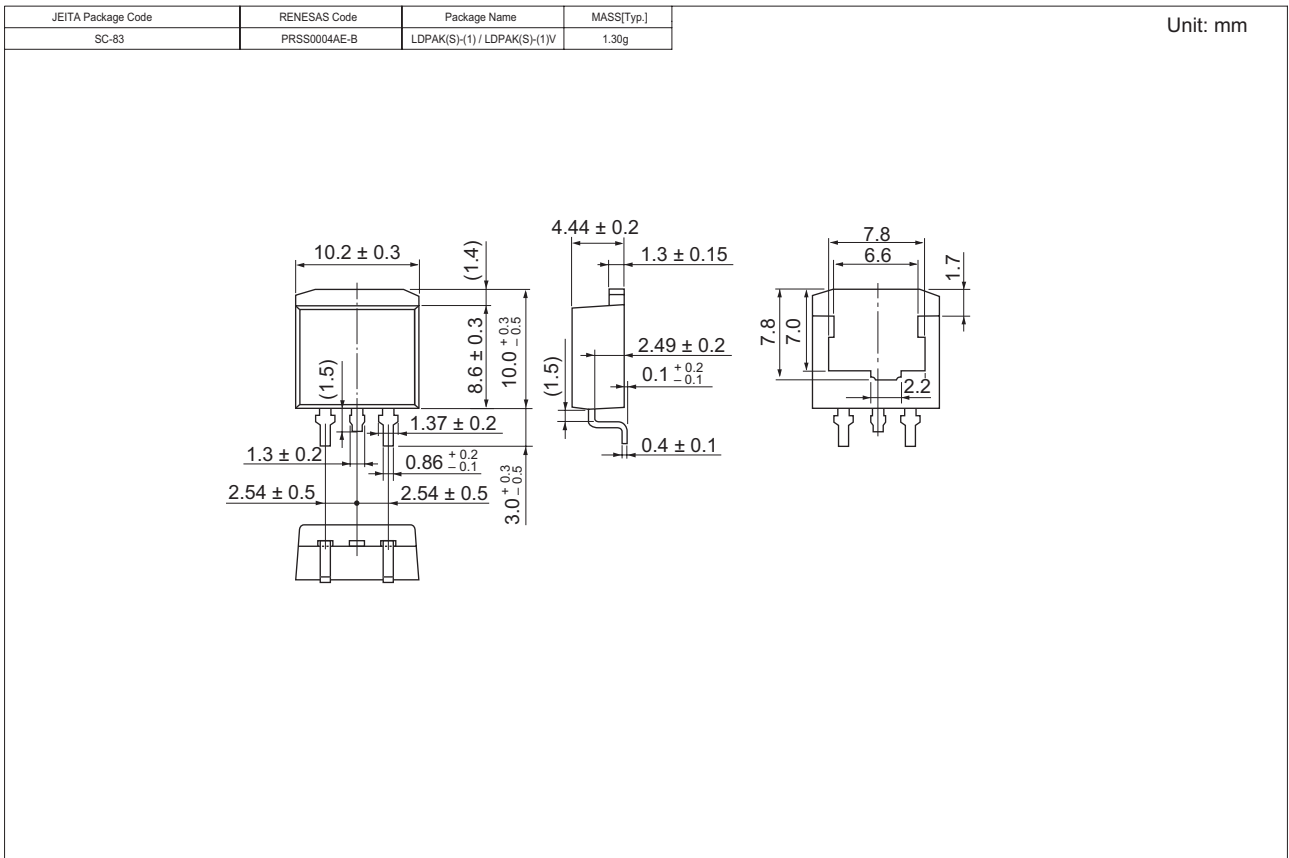
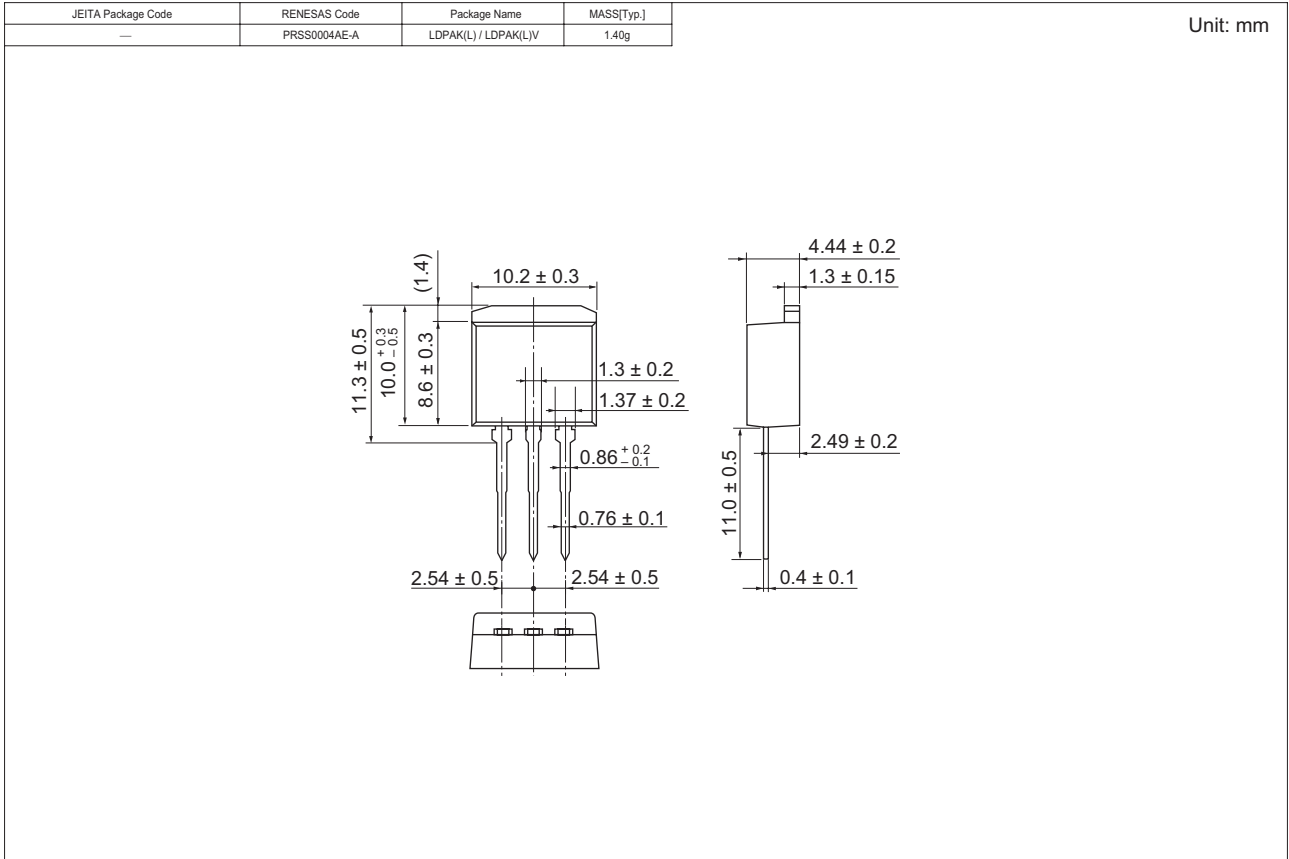
Switching Time Test Circuit



Waveforms



Package Dimensions



Ordering Information

Part Name	Quantity	Shipping Container
2SK1313L-E	500 pcs	Box (Sack)
2SK1313STL-E	1000 pcs	Taping
2SK1314L-E	500 pcs	Box (Sack)
2SK1314STL-E	1000 pcs	Taping

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