

2SK2957(L), 2SK2957(S)

Silicon N Channel MOS FET
High Speed Power Switching

REJ03G1057-0600
(Previous: ADE-208-567D)
Rev.6.00
Sep 07, 2005

Features

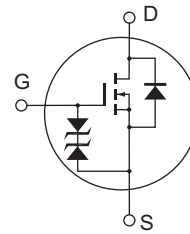
- Low on-resistance
 $R_{DS(on)} = 7 \text{ m}\Omega$ typ.
- 4 V gate drive devices.
- High speed switching

Outline

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



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



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

Absolute Maximum Ratings

(Ta = 25°C)

Item	Symbol	Ratings	Unit
Drain to source voltage	V_{DSS}	30	V
Gate to source voltage	V_{GSS}	±20	V
Drain current	I_D	50	A
Drain peak current	$I_{D(pulse)}$ ^{Note1}	200	A
Body-drain diode reverse drain current	I_{DR}	50	A
Channel dissipation	P_{ch} ^{Note2}	75	W
Channel temperature	T_{ch}	150	°C
Storage temperature	T_{stg}	-55 to +150	°C

Notes: 1. $PW \leq 10\mu s$, duty cycle $\leq 1\%$ 2. Value at $T_c = 25^\circ C$

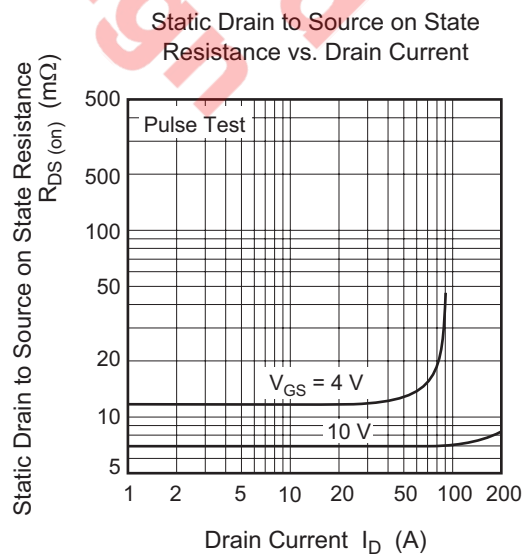
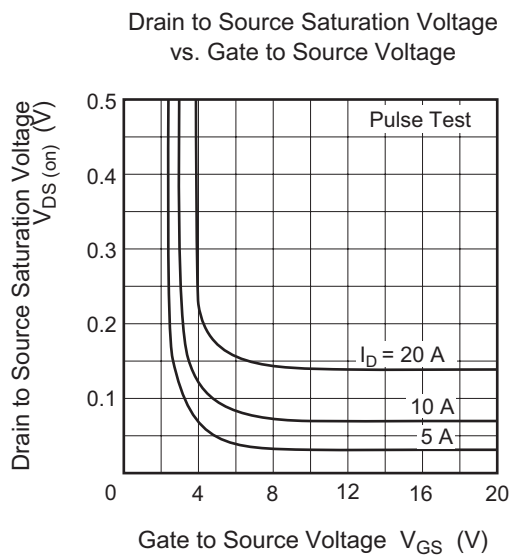
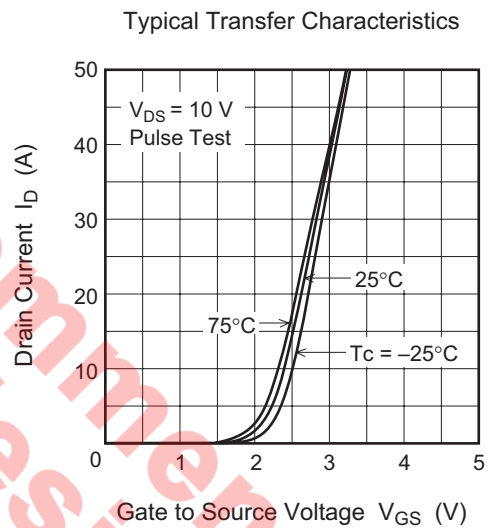
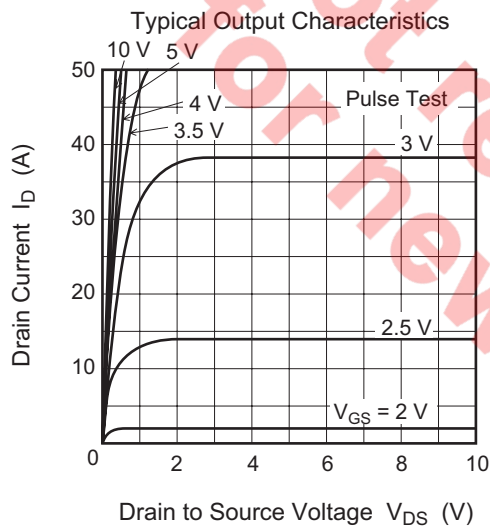
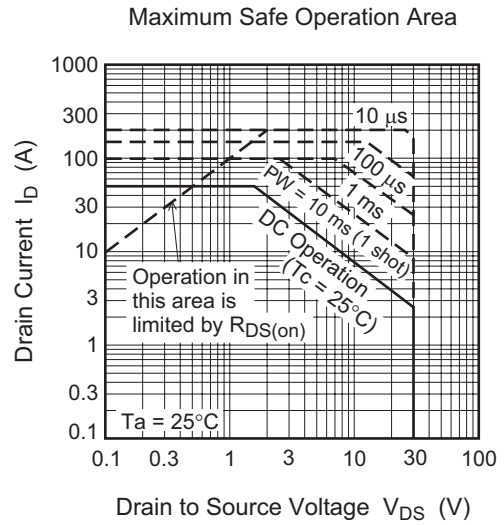
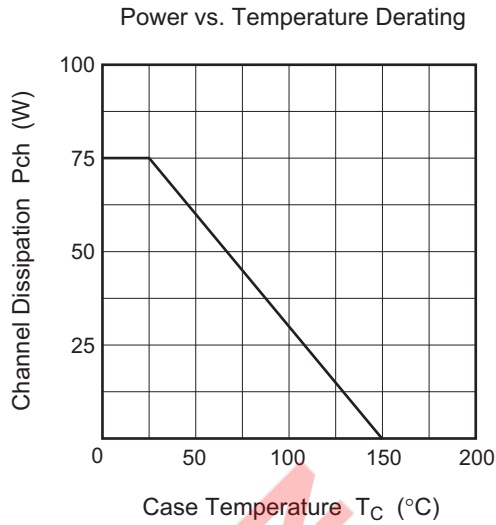
Electrical Characteristics

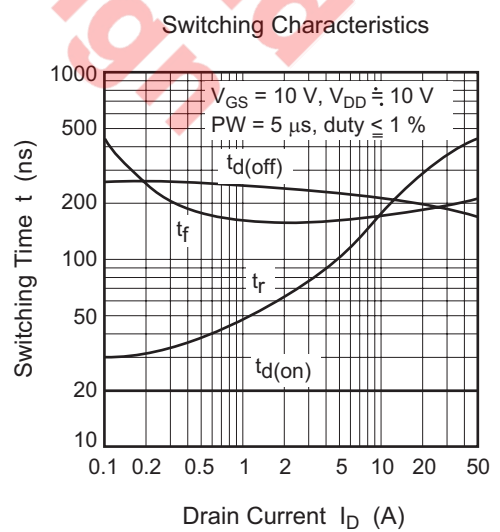
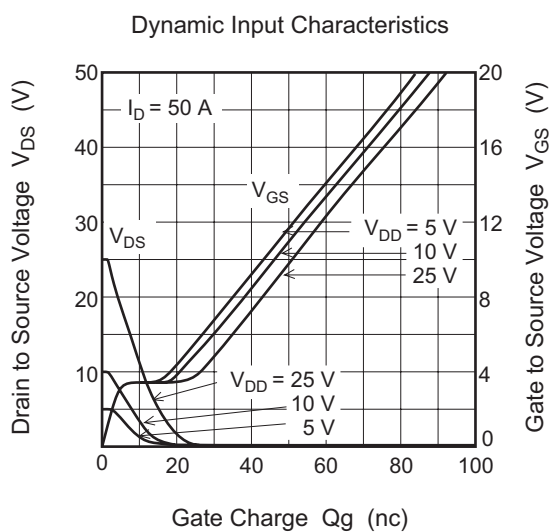
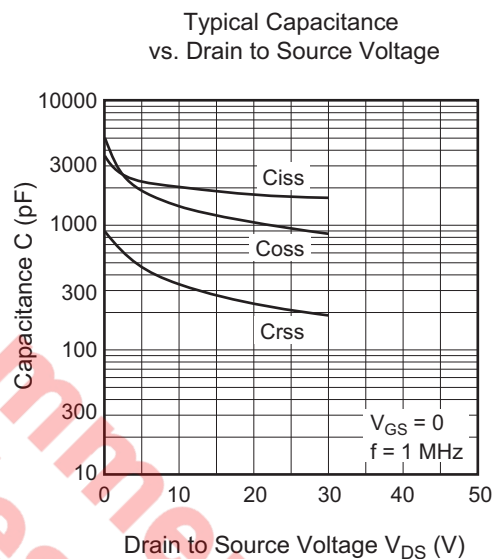
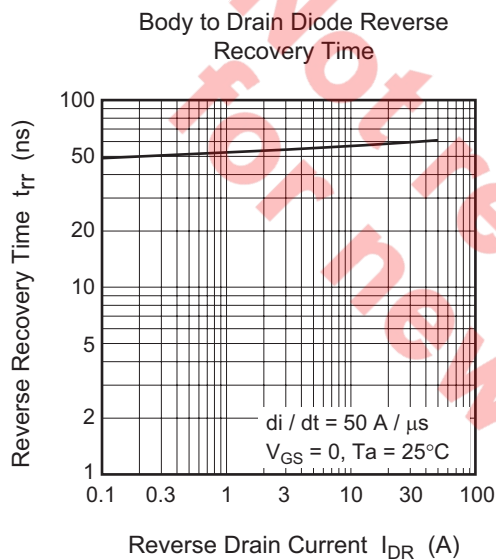
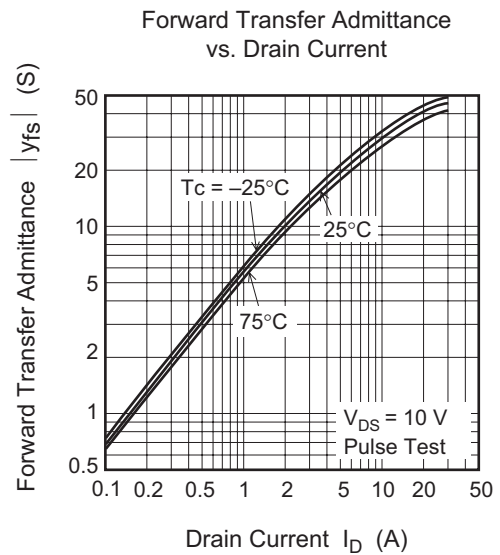
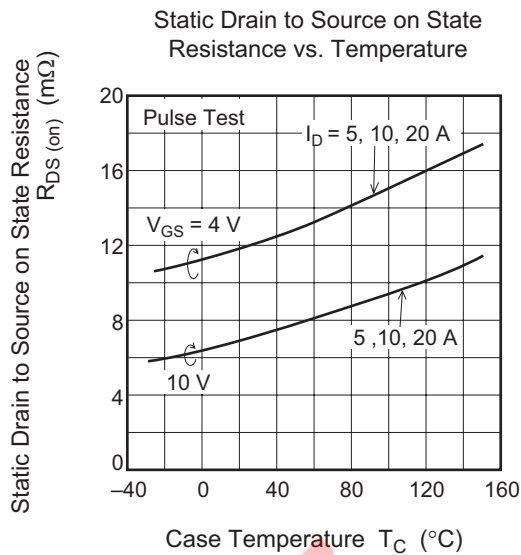
(Ta = 25°C)

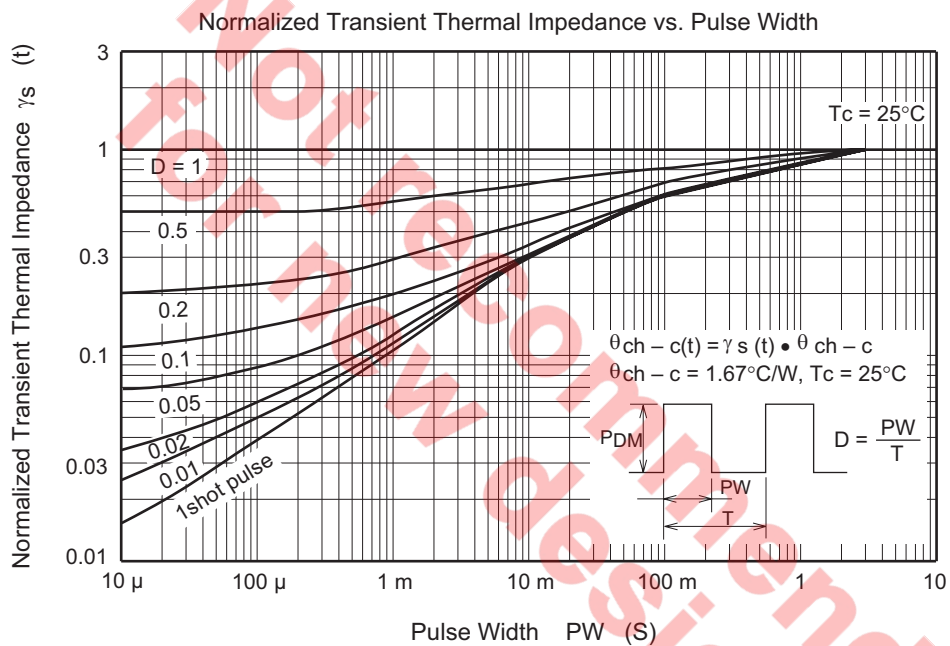
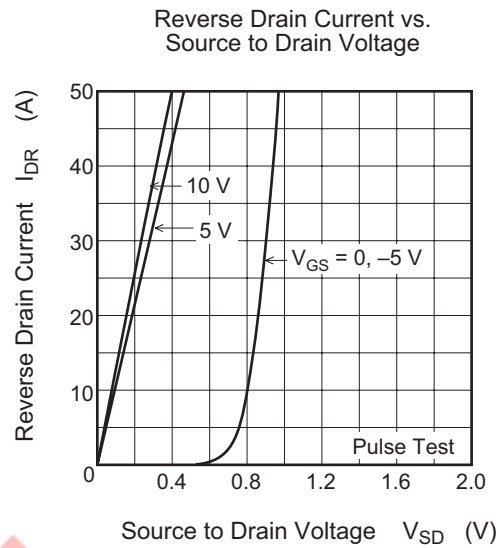
Item	Symbol	Min	Typ	Max	Unit	Test Conditions
Drain to source breakdown voltage	$V_{(BR)DSS}$	30	—	—	V	$I_D = 10\text{ mA}$, $V_{GS} = 0$
Gate to source breakdown voltage	$V_{(BR)GSS}$	±20	—	—	V	$I_G = \pm 100\text{ }\mu A$, $V_{DS} = 0$
Zero gate voltage drain current	I_{DSS}	—	—	10	μA	$V_{DS} = 30\text{ V}$, $V_{GS} = 0$
Gate to source leak current	I_{GSS}	—	—	±10	μA	$V_{GS} = \pm 16\text{ V}$, $V_{DS} = 0$
Gate to source cutoff voltage	$V_{GS(off)}$	1.0	—	2.0	V	$I_D = 1\text{ mA}$, $V_{DS} = 10\text{ V}$
Static drain to source on state resistance	$R_{DS(on)}$	—	7.0	10	$m\Omega$	$I_D = 25\text{ A}$, $V_{GS} = 10\text{ V}$ ^{Note3}
	$R_{DS(on)}$	—	12	18	$m\Omega$	$I_D = 25\text{ A}$, $V_{GS} = 4\text{ V}$ ^{Note3}
Forward transfer admittance	$ y_{fs} $	25	45	—	S	$I_D = 25\text{ A}$, $V_{DS} = 10\text{ V}$ ^{Note3}
Input capacitance	C_{iss}	—	2000	—	pF	$V_{DS} = 10\text{ V}$, $V_{GS} = 0$, $f = 1\text{ MHz}$
Output capacitance	C_{oss}	—	1500	—	pF	
Reverse transfer capacitance	C_{rss}	—	350	—	pF	
Turn-on delay time	$t_{d(on)}$	—	20	—	ns	$V_{GS} = 10\text{ V}$, $I_D = 25\text{ A}$, $R_L = 0.4\text{ }\Omega$
Rise time	t_r	—	330	—	ns	
Turn-off delay time	$t_{d(off)}$	—	190	—	ns	
Fall time	t_f	—	190	—	ns	
Body-drain diode forward voltage	V_{DF}	—	0.95	—	V	$I_F = 50\text{ A}$, $V_{GS} = 0$
Body-drain diode reverse recovery time	t_{rr}	—	60	—	ns	$I_F = 50\text{ A}$, $V_{GS} = 0$ $di_F/dt = 50\text{ A}/\mu s$

Note: 3. Pulse test

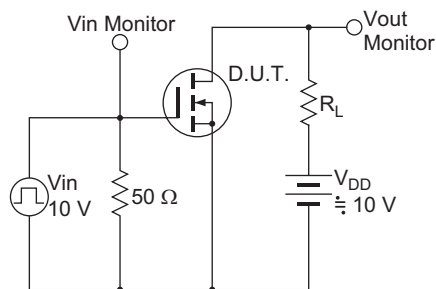
Main Characteristics



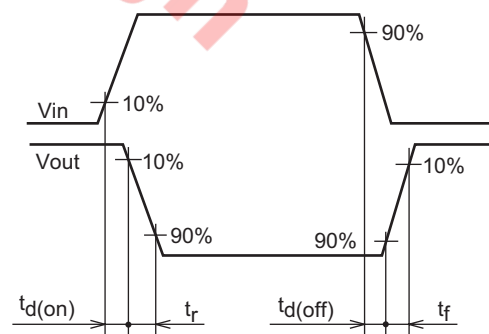




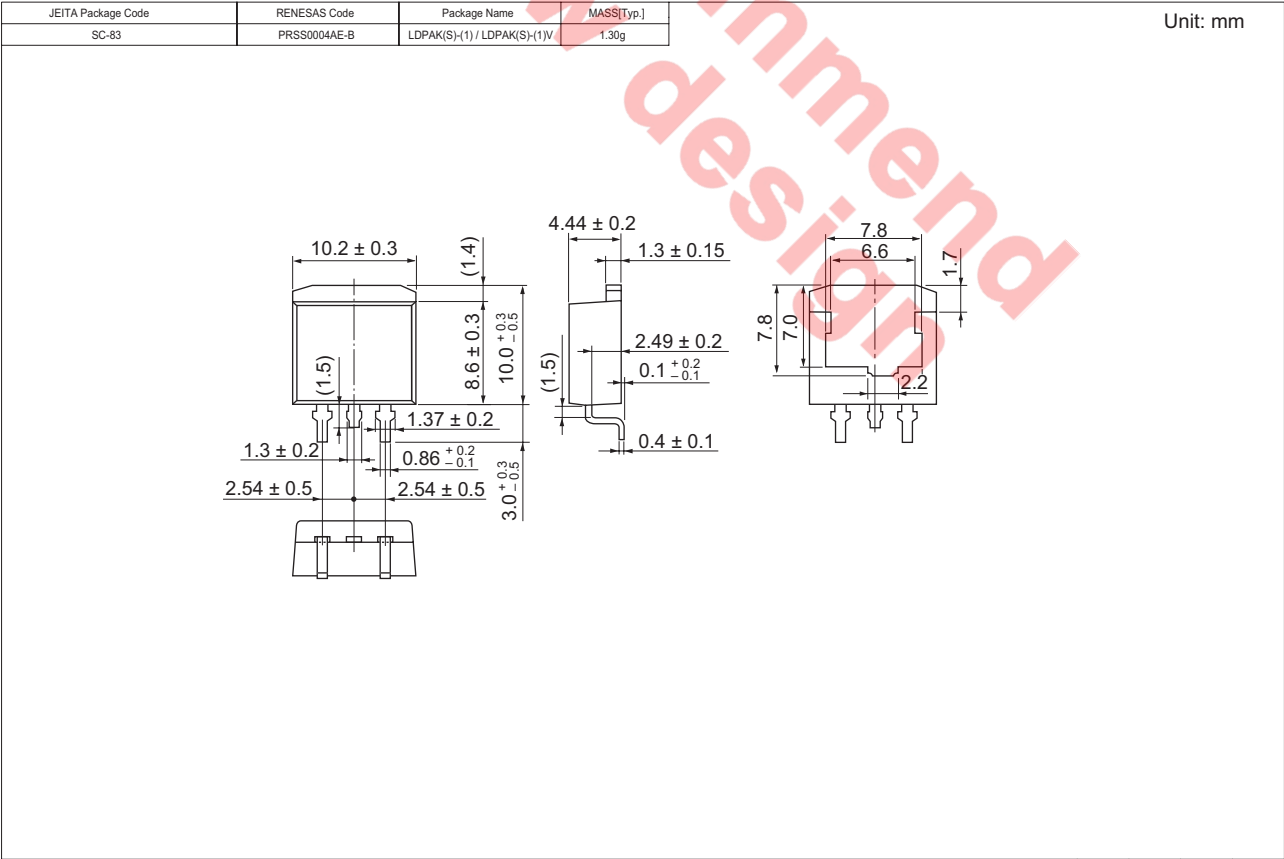
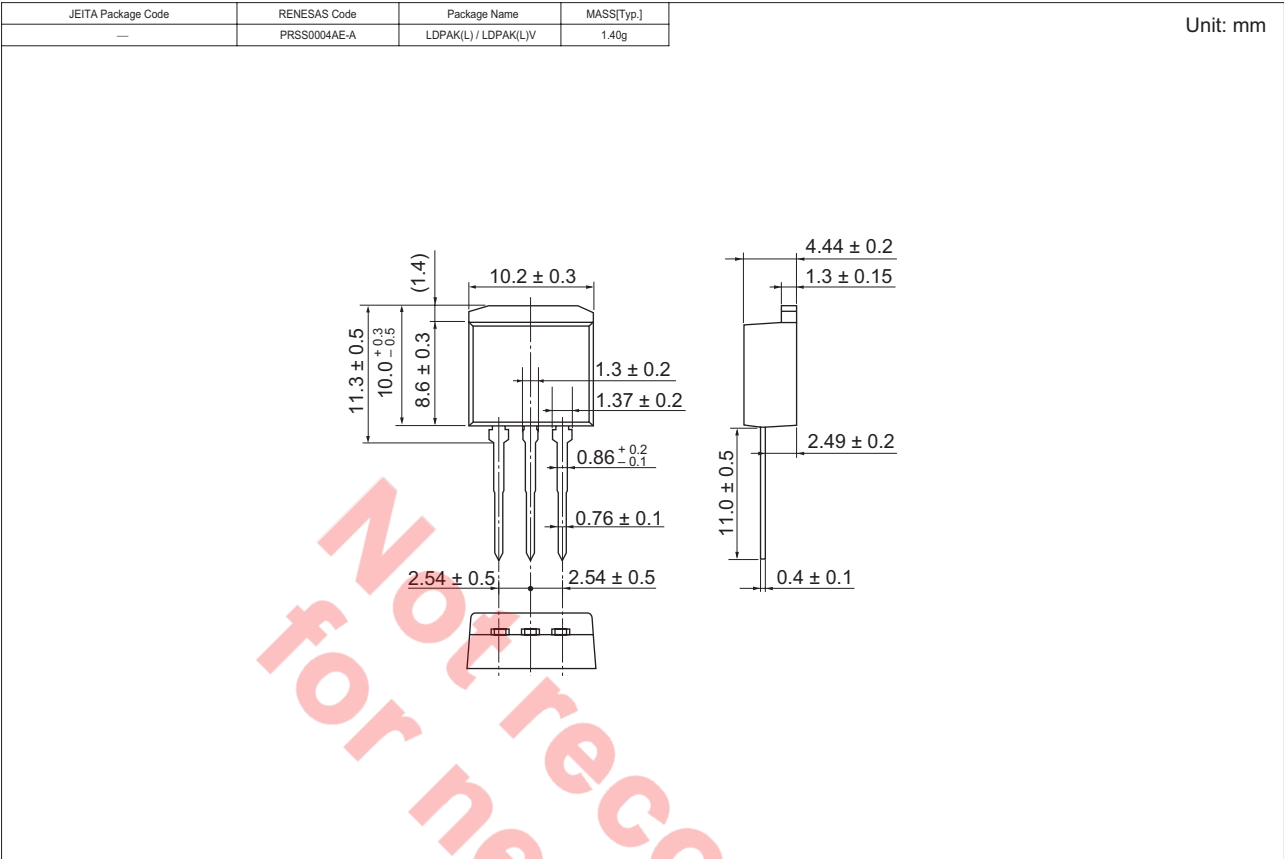
Switching Time Test Circuit



Waveform



Package Dimensions



Ordering Information

Part Name	Quantity	Shipping Container
2SK2957L-E	500 pcs	Box (Sack)
2SK2957STL-E	1000 pcs	Taping

Note: For some grades, production may be terminated. Please contact the Renesas sales office to check the state of production before ordering the product.

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