

## 2SK2735(L), 2SK2735(S)

Silicon N Channel MOS FET  
High Speed Power Switching

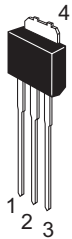
REJ03G1029-0200  
(Previous: ADE-208-543)  
Rev.2.00  
Sep 07, 2005

### Features

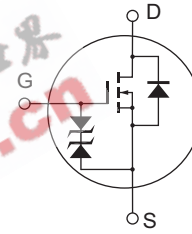
- Low on-resistance  
 $R_{DS} = 20 \text{ m}\Omega$  typ.
- High speed switching
- 4 V gate drive device can be driven from 5 V source

### Outline

RENESAS Package code: PRSS0004ZD-B  
(Package name: DPAK(L)-(2))



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 <sub>DSS</sub>	30	V
Gate to source voltage	V <sub>GSS</sub>	±20	V
Drain current	I <sub>D</sub>	20	A
Drain peak current	I <sub>D(pulse)</sub> *1	80	A
Body to drain diode reverse drain current	I <sub>DR</sub>	20	A
Channel dissipation	P <sub>ch</sub> *2	20	W
Channel temperature	T <sub>ch</sub>	150	°C
Storage temperature	T <sub>stg</sub>	-55 to +150	°C

Notes: 1. PW ≤ 10 μs, duty cycle ≤ 1 %  
 2. Value at Tc = 25°C

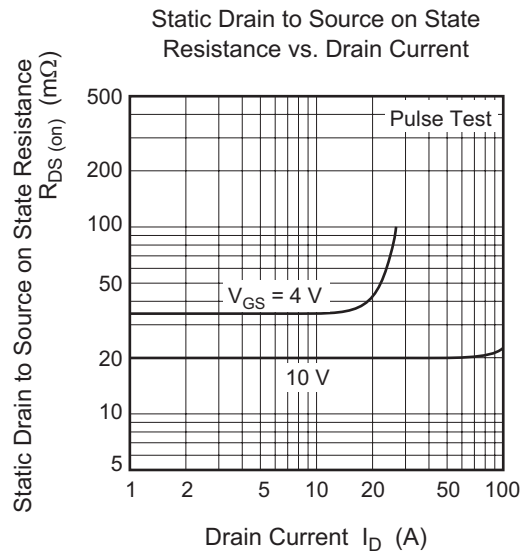
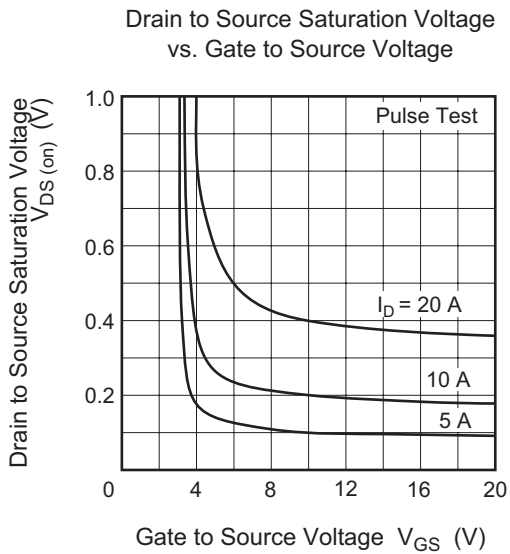
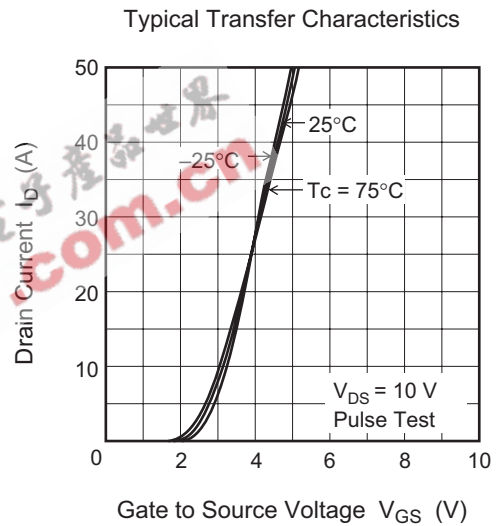
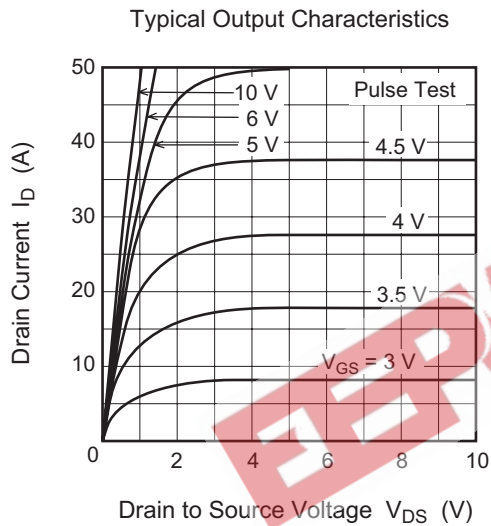
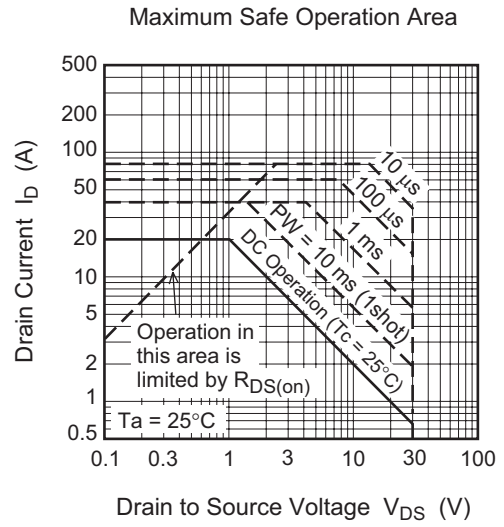
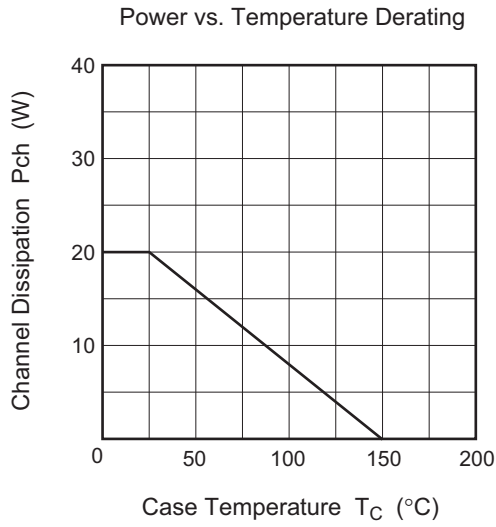
## Electrical Characteristics

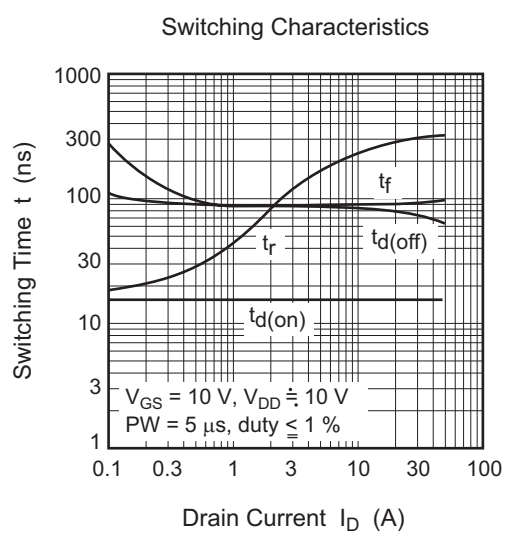
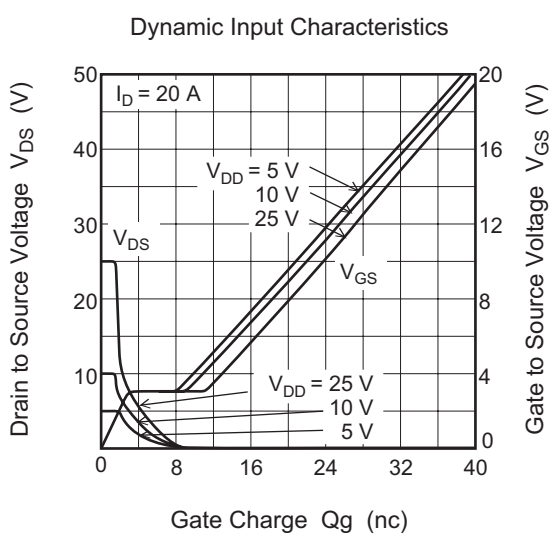
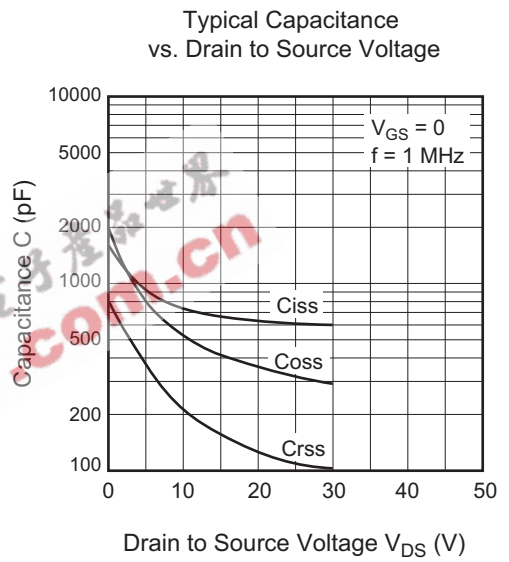
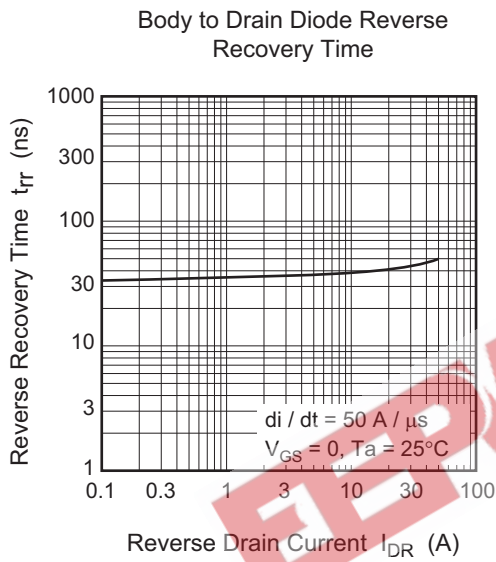
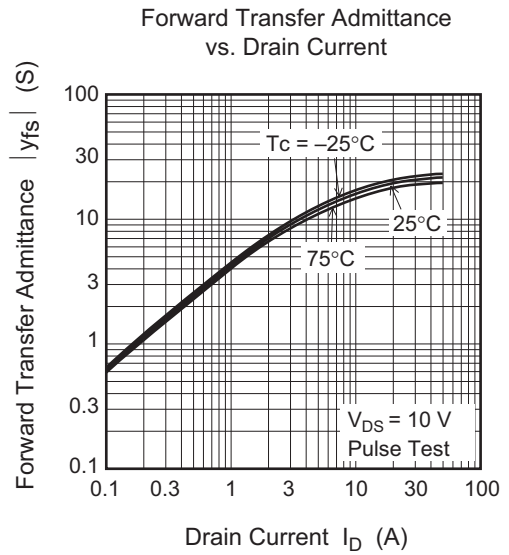
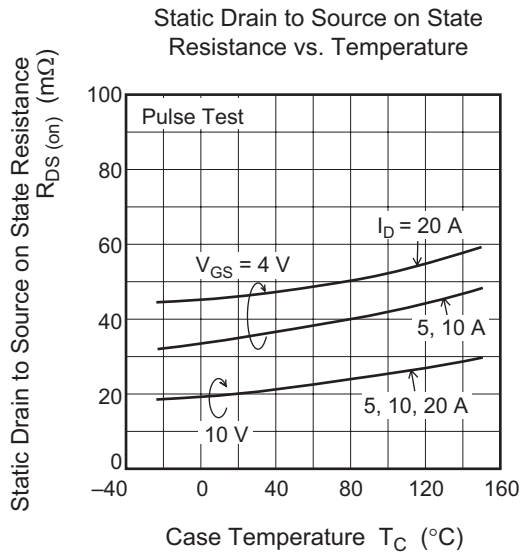
(Ta = 25°C)

Item	Symbol	Min	Typ	Max	Unit	Test Conditions
Drain to source breakdown voltage	V <sub>(BR)DSS</sub>	30	—	—	V	I <sub>D</sub> = 10 mA, V <sub>GS</sub> = 0
Gate to source breakdown voltage	V <sub>(BR)GSS</sub>	±20	—	—	V	I <sub>G</sub> = ±100 μA, V <sub>DS</sub> = 0
Gate to source leak current	I <sub>GSS</sub>	—	—	±10	μA	V <sub>GS</sub> = ±16 V, V <sub>DS</sub> = 0
Zero gate voltage drain current	I <sub>DSS</sub>	—	—	10	μA	V <sub>DS</sub> = 30 V, V <sub>GS</sub> = 0
Gate to source cutoff voltage	V <sub>GS(off)</sub>	1.0	—	2.0	V	I <sub>D</sub> = 1 mA, V <sub>DS</sub> = 10 V
Static drain to source on state resistance	R <sub>DS(on)</sub>	—	20	28	mΩ	I <sub>D</sub> = 10 A, V <sub>GS</sub> = 10 V*3
	R <sub>DS(on)</sub>	—	35	50	mΩ	I <sub>D</sub> = 10 A, V <sub>GS</sub> = 4 V*3
Forward transfer admittance	y <sub>fs</sub>	8	16	—	S	I <sub>D</sub> = 10 A, V <sub>DS</sub> = 10 V*3
Input capacitance	C <sub>iss</sub>	—	750	—	pF	V <sub>DS</sub> = 10 V, V <sub>GS</sub> = 0, f = 1 MHz
Output capacitance	C <sub>oss</sub>	—	520	—	pF	
Reverse transfer capacitance	C <sub>rss</sub>	—	210	—	pF	
Turn-on delay time	t <sub>d(on)</sub>	—	16	—	ns	I <sub>D</sub> = 10 A, V <sub>GS</sub> = 10 V, R <sub>L</sub> = 1 Ω
Rise time	t <sub>r</sub>	—	225	—	ns	
Turn-off delay time	t <sub>d(off)</sub>	—	85	—	ns	
Fall time	t <sub>f</sub>	—	90	—	ns	
Body to drain diode forward voltage	V <sub>DF</sub>	—	1.0	—	V	I <sub>F</sub> = 20 A, V <sub>GS</sub> = 0 di <sub>F</sub> /dt = 50 A/μs
Body to drain diode reverse recovery time	t <sub>rr</sub>	—	40	—	V	I <sub>F</sub> = 20 A, V <sub>GS</sub> = 0 di <sub>F</sub> /dt = 50 A/μs

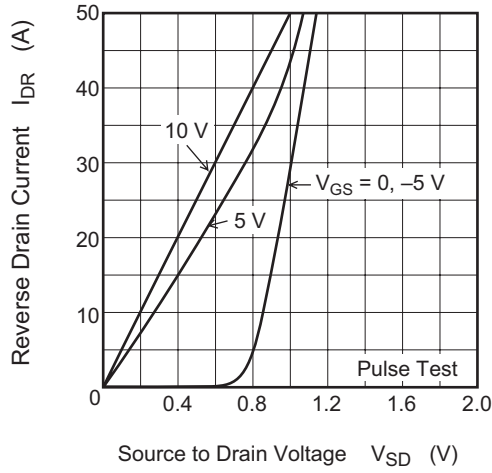
Note: 3. Pulse test

Main Characteristics

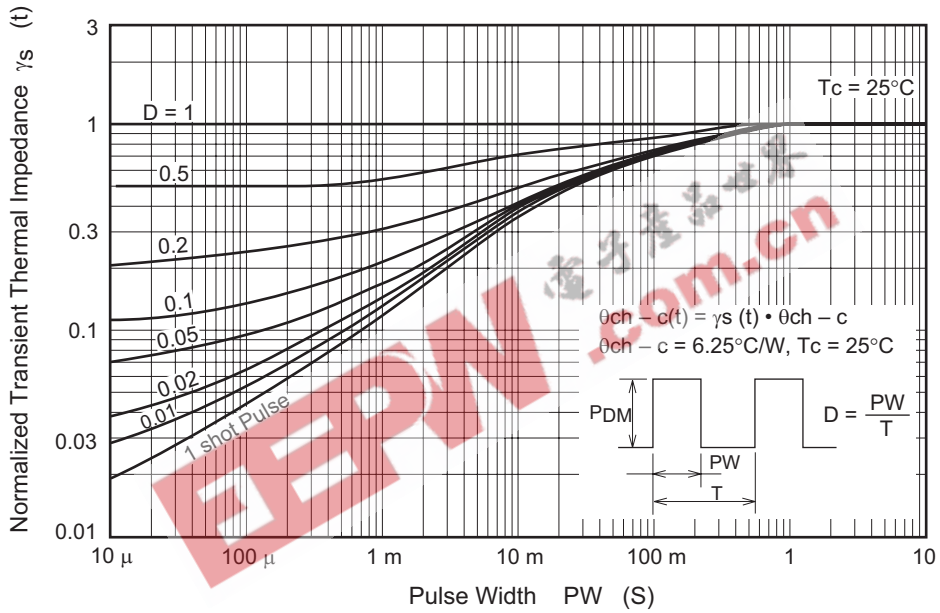




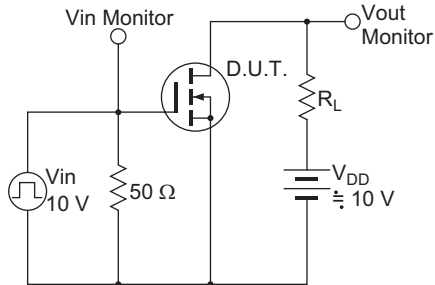
Reverse Drain Current vs. Source to Drain Voltage



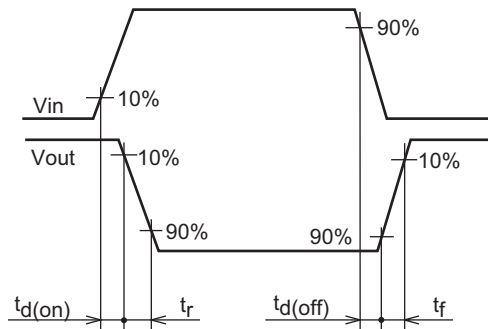
Normalized Transient Thermal Impedance vs. Pulse Width



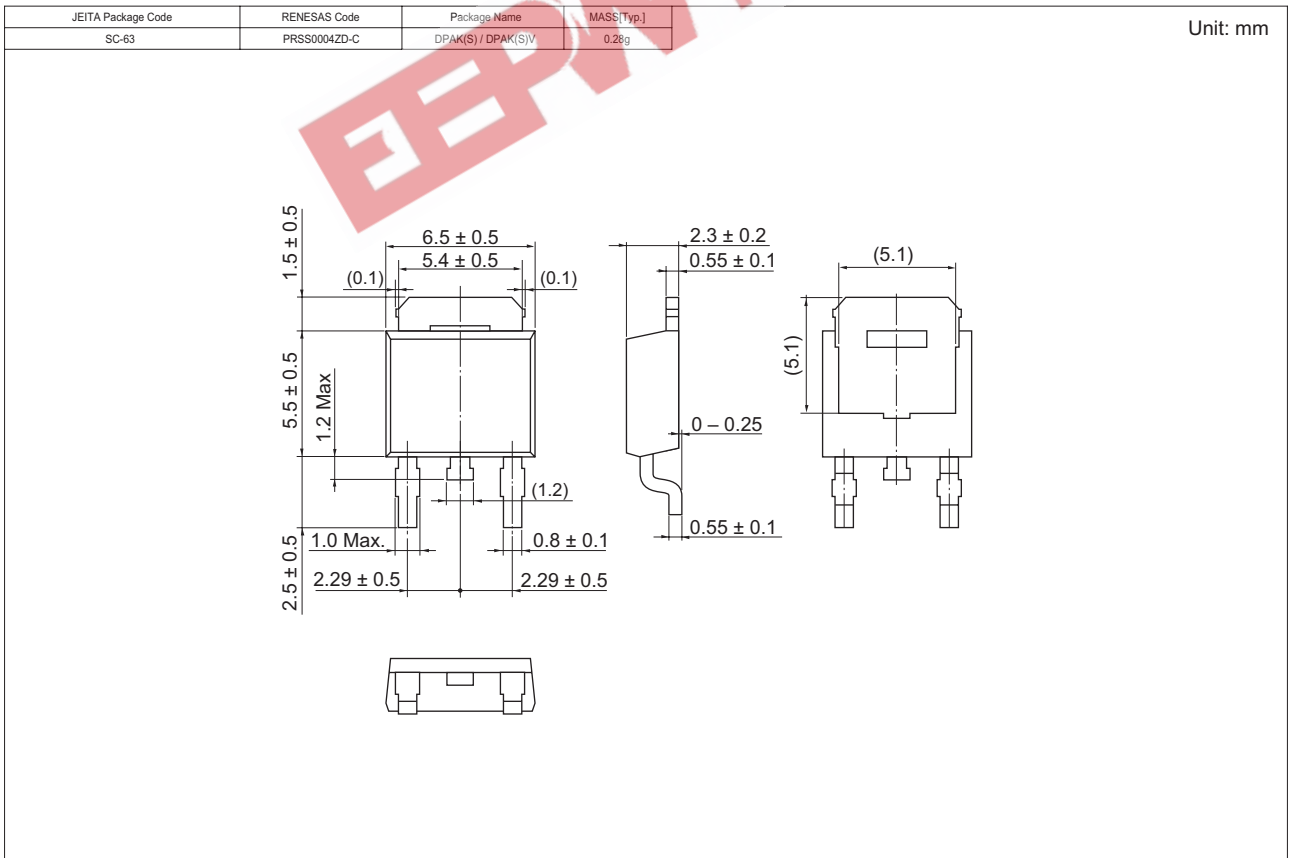
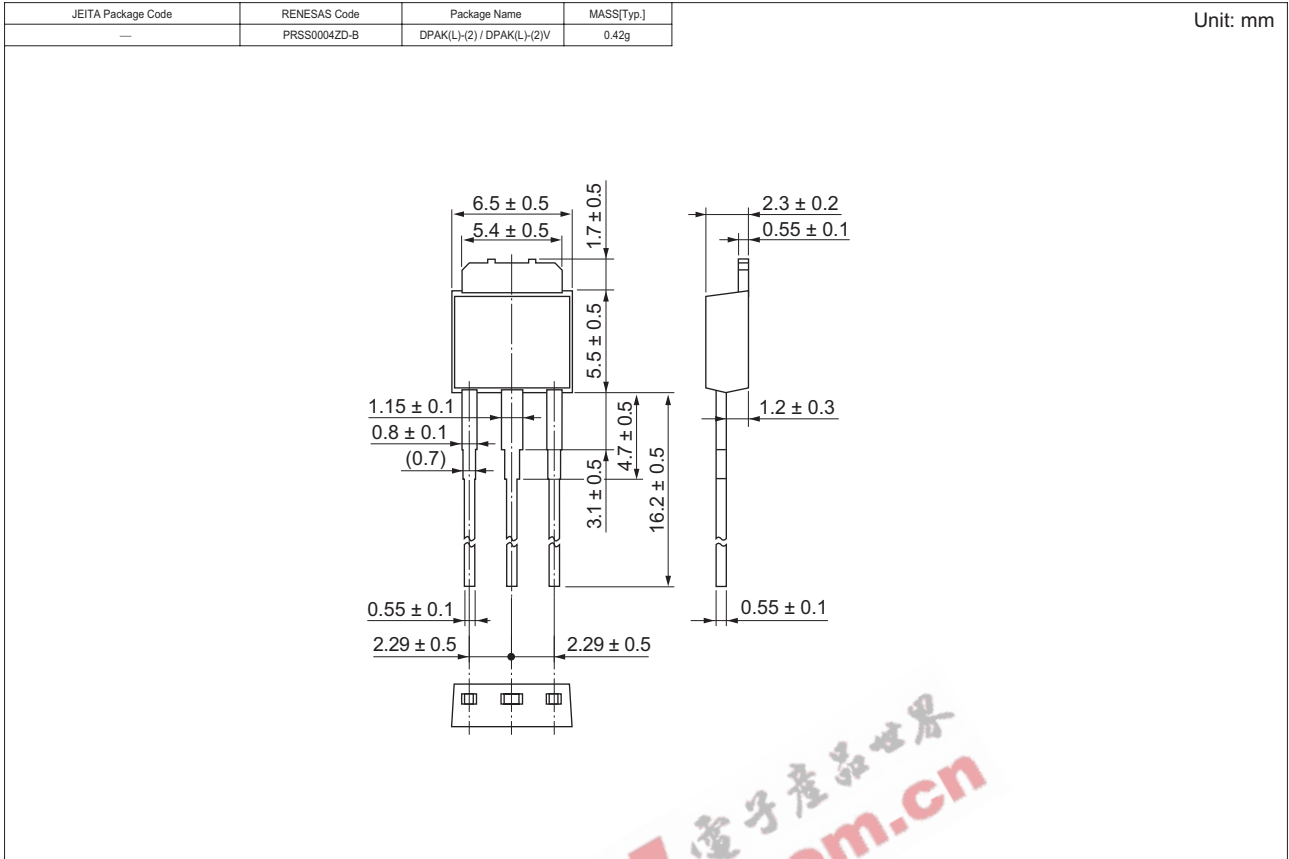
Switching Time Test Circuit



Waveform



Package Dimensions



### Ordering Information

Part Name	Quantity	Shipping Container
2SK2735L-E	3200 pcs	Box (Sack)
2SK2735STL-E	3000 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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