

# RJK2511DPK

Silicon N Channel MOS FET  
High Speed Power Switching

REJ03G1486-0400

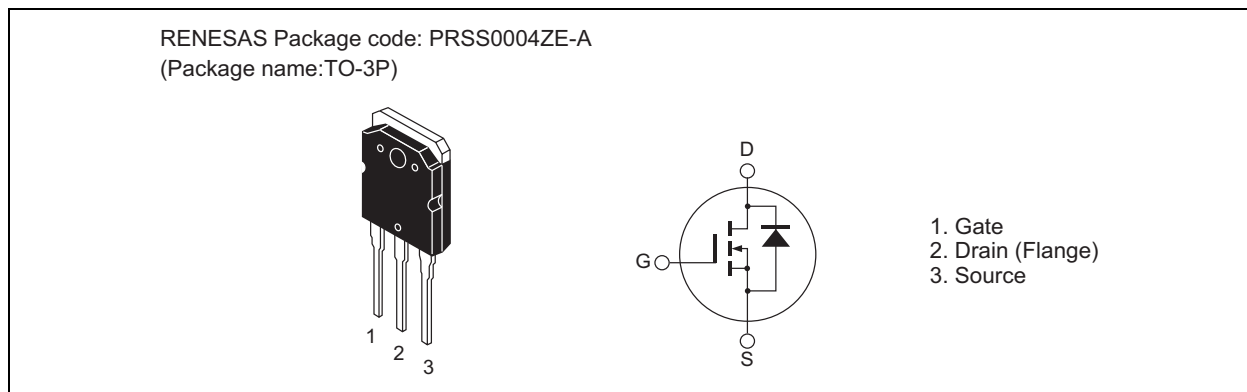
Rev.4.00

Nov 27, 2007

## Features

- Low on-resistance
- Low leakage current
- High speed switching

## Outline



## Absolute Maximum Ratings

(Ta = 25°C)

Item	Symbol	Ratings	Unit
Drain to source voltage	V <sub>DSS</sub>	250	V
Gate to source voltage	V <sub>GSS</sub>	±30	V
Drain current	I <sub>D</sub>	65	A
Drain peak current	I <sub>D (pulse)</sub> <sup>Note1</sup>	200	A
Body-drain diode reverse drain current	I <sub>DR</sub>	65	A
Body-drain diode reverse drain peak current	I <sub>DR (pulse)</sub> <sup>Note1</sup>	200	A
Avalanche current	I <sub>AP</sub> <sup>Note3</sup>	22	A
Avalanche energy	E <sub>AR</sub> <sup>Note3</sup>	30.2	mJ
Channel dissipation	P <sub>ch</sub> <sup>Note2</sup>	200	W
Channel to case thermal impedance	θ <sub>ch-c</sub>	0.625	°C/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 T<sub>c</sub> = 25°C

3. ST<sub>ch</sub> = 25°C, T<sub>ch</sub> ≤ 150°C

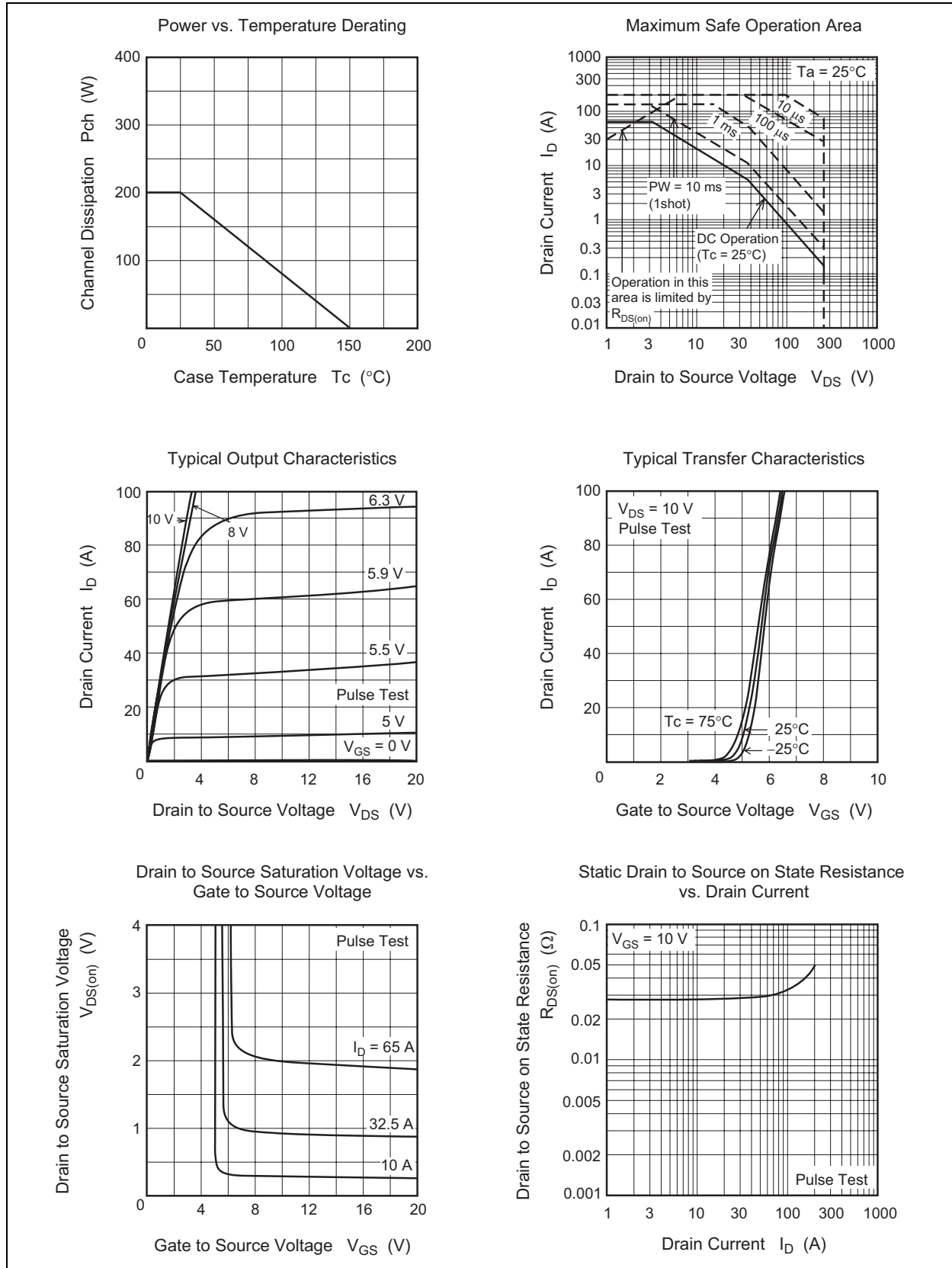
## Electrical Characteristics

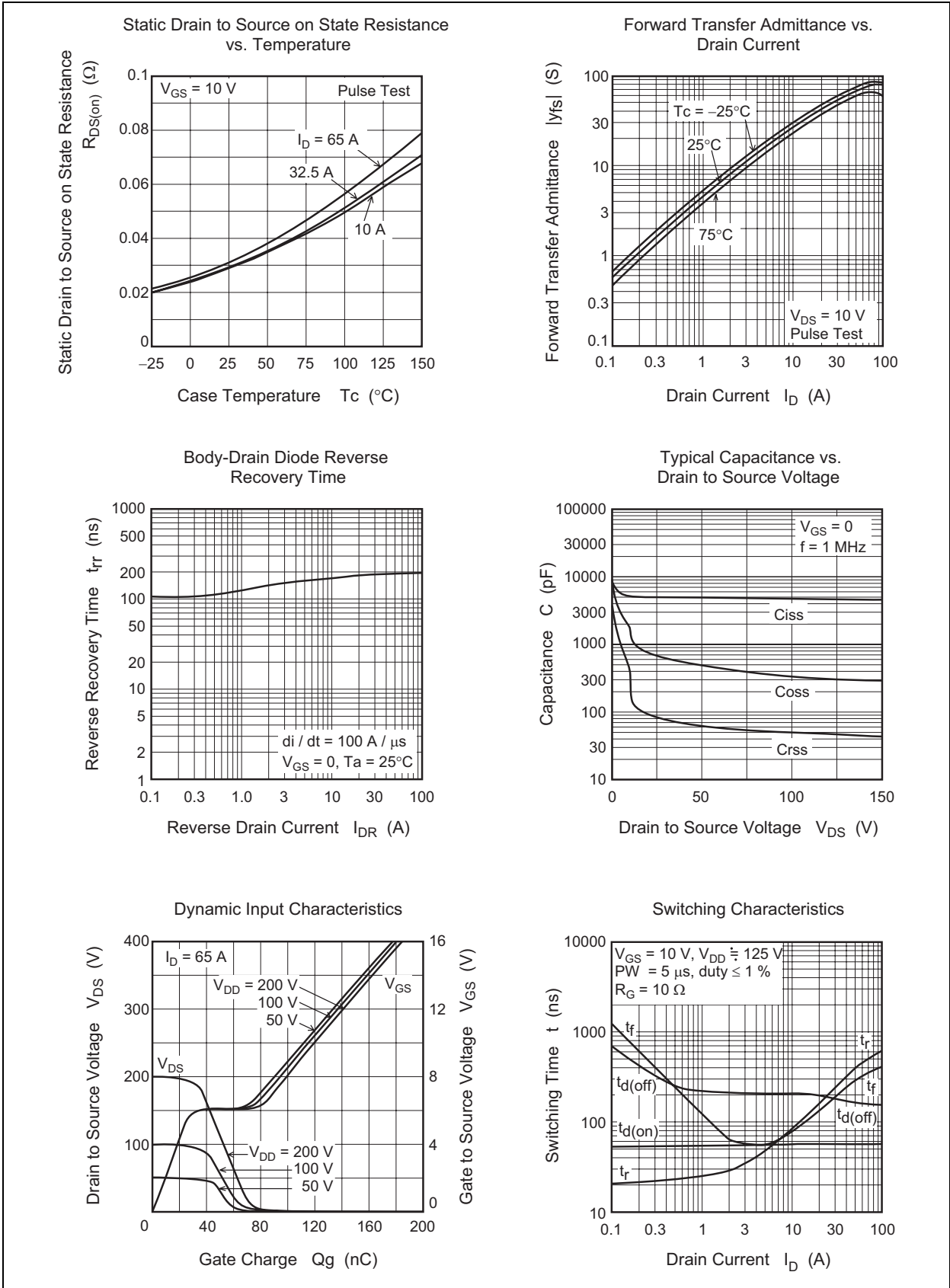
(Ta = 25°C)

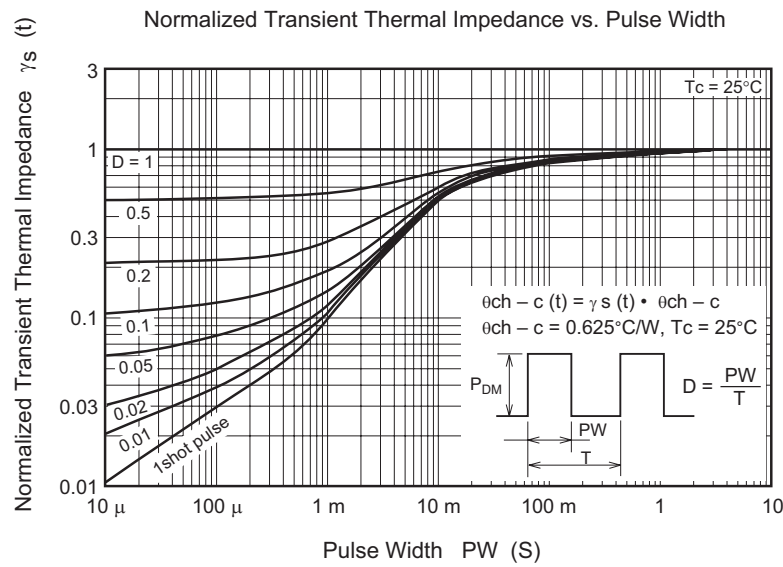
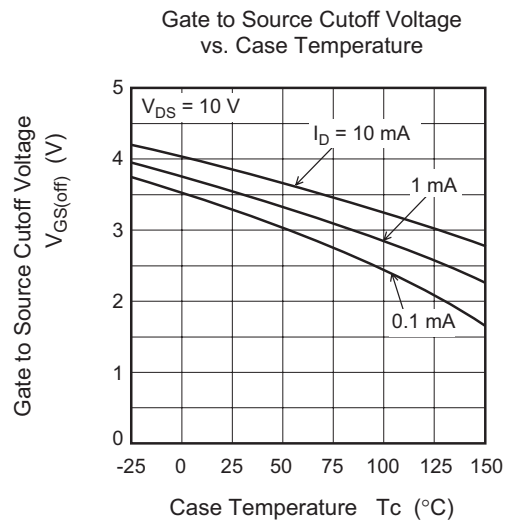
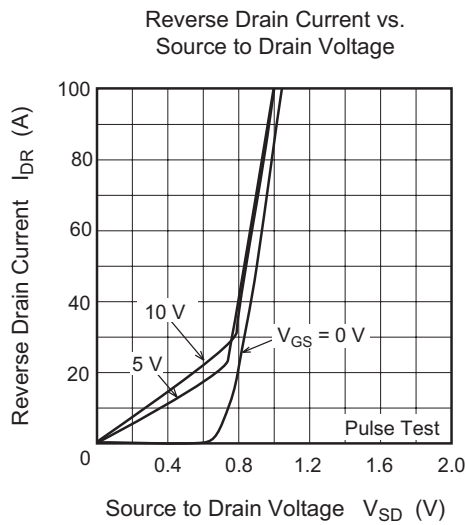
Item	Symbol	Min	Typ	Max	Unit	Test conditions
Drain to source breakdown voltage	$V_{(BR)DSS}$	250	—	—	V	$I_D = 10 \text{ mA}$ , $V_{GS} = 0$
Zero gate voltage drain current	$I_{DSS}$	—	—	1	$\mu\text{A}$	$V_{DS} = 250 \text{ V}$ , $V_{GS} = 0$
Gate to source leak current	$I_{GSS}$	—	—	$\pm 0.1$	$\mu\text{A}$	$V_{GS} = \pm 30 \text{ V}$ , $V_{DS} = 0$
Gate to source cutoff voltage	$V_{GS(off)}$	3.0	—	4.5	V	$V_{DS} = 10 \text{ V}$ , $I_D = 1 \text{ mA}$
Forward transfer admittance	$ y_{fs} $	30	51	—	S	$I_D = 32.5 \text{ A}$ , $V_{DS} = 10 \text{ V}$ <sup>Note4</sup>
Static drain to source on state resistance	$R_{DS(on)}$	—	0.028	0.034	$\Omega$	$I_D = 32.5 \text{ A}$ , $V_{GS} = 10 \text{ V}$ <sup>Note4</sup>
Input capacitance	$C_{iss}$	—	4900	—	pF	$V_{DS} = 25 \text{ V}$
Output capacitance	$C_{oss}$	—	690	—	pF	$V_{GS} = 0$
Reverse transfer capacitance	$C_{rss}$	—	85	—	pF	$f = 1 \text{ MHz}$
Turn-on delay time	$t_{d(on)}$	—	52	—	ns	$I_D = 32.5 \text{ A}$
Rise time	$t_r$	—	200	—	ns	$V_{GS} = 10 \text{ V}$
Turn-off delay time	$t_{d(off)}$	—	160	—	ns	$R_L = 3.9 \Omega$
Fall time	$t_f$	—	150	—	ns	$R_g = 10 \Omega$
Total gate charge	$Q_g$	—	120	—	nC	$V_{DD} = 200 \text{ V}$
Gate to source charge	$Q_{gs}$	—	28	—	nC	$V_{GS} = 10 \text{ V}$
Gate to drain charge	$Q_{gd}$	—	51	—	nC	$I_D = 65 \text{ A}$
Body-drain diode forward voltage	$V_{DF}$	—	0.93	1.50	V	$I_F = 65 \text{ A}$ , $V_{GS} = 0$ <sup>Note4</sup>
Body-drain diode reverse recovery time	$t_{rr}$	—	200	—	ns	$I_F = 65 \text{ A}$ , $V_{GS} = 0$
Body-drain diode reverse recovery charge	$Q_{rr}$	—	1.5	—	$\mu\text{C}$	$di_F/dt = 100 \text{ A}/\mu\text{s}$

Notes: 4. Pulse test

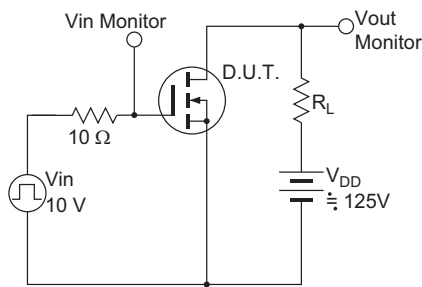
Main Characteristics



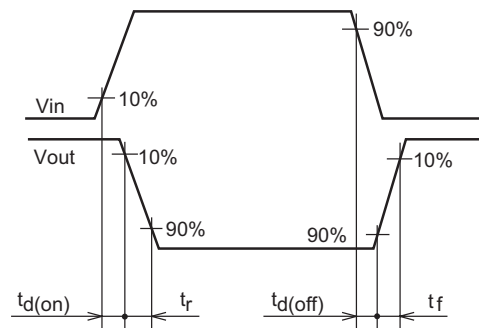




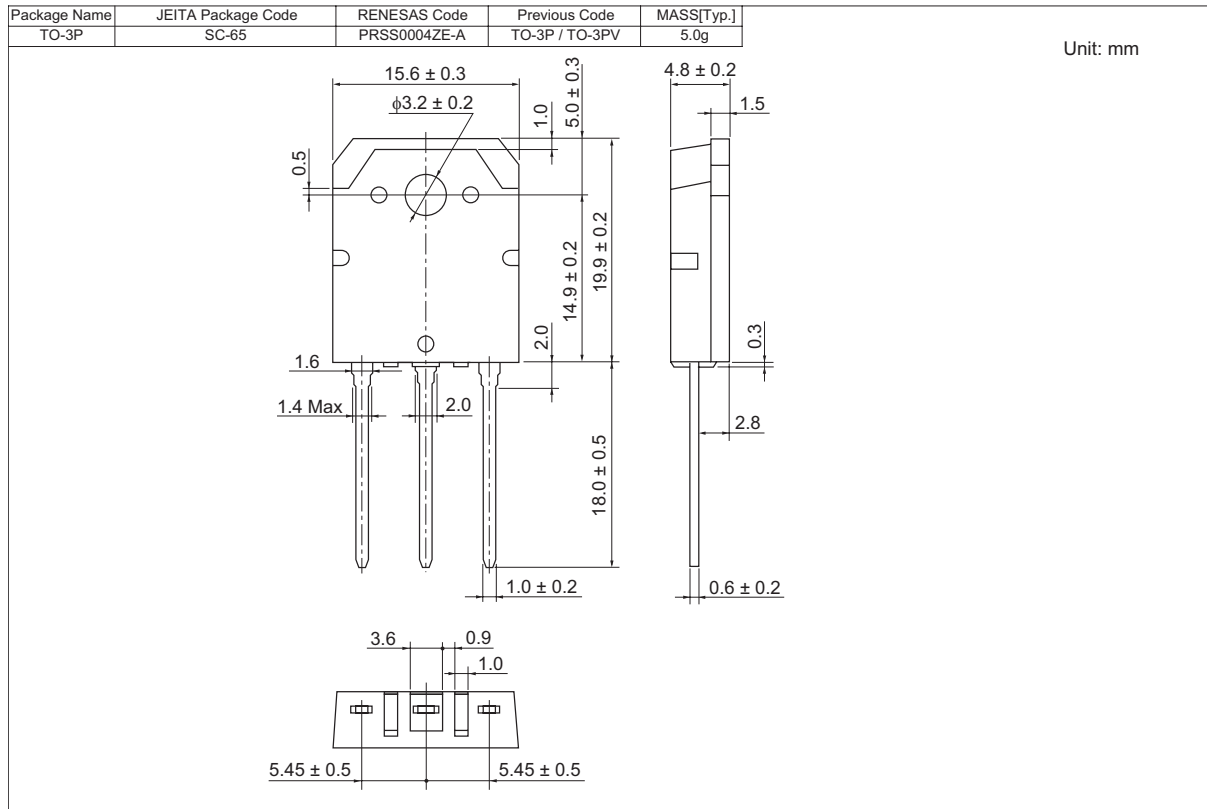
Switching Time Test Circuit



Waveform



## Package Dimensions



## Ordering Information

Part No.	Quantity	Shipping Container
RJK2511DPK-00-T0	360 pcs	Box (Tube)

Notes:

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