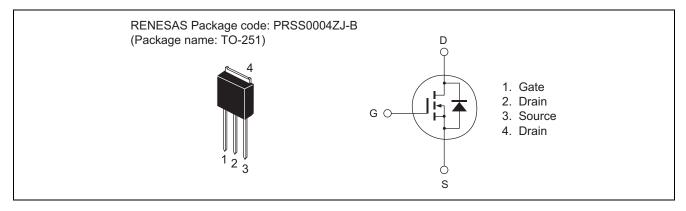


600V - 2A - MOS FET High Speed Power Switching Datasheet

### Features

- Low on-resistance RDS(on) = 5.7  $\Omega$  typ. (at I<sub>D</sub> = 1 A, V<sub>GS</sub> = 10 V, Ta = 25°C)
- Low leakage current
- High speed switching

### Outline



## **Absolute Maximum Ratings**

			$(Ta = 25^{\circ}C)$
Item	Symbol	Ratings	Unit
Drain to source voltage	V <sub>DSS</sub>	600	V
Gate to source voltage	V <sub>GSS</sub>	±30	V
Drain current	I <sub>D</sub>	2	А
Drain peak current	I <sub>D (pulse)</sub> Note1	4	А
Body-drain diode reverse drain current	I <sub>DR</sub>	2	А
Body-drain diode reverse drain peak current	I <sub>DR (pulse)</sub> Note1	4	А
Avalanche current	I <sub>AP</sub> <sup>Note3</sup>	1	А
Avalanche energy	E <sub>AR</sub> <sup>Note3</sup>	0.05	mJ
Channel dissipation	Pch <sup>Note2</sup>	30	W
Channel to case thermal impedance	θch-c	4.17	°C/W
Channel temperature	Tch	150	°C
Storage temperature	Tstg	-55 to +150	°C

Notes: 1. PW  $\leq$  10  $\mu s,\,duty\,cycle$   $\leq$  1%

2. Value at Tc =  $25^{\circ}$ C

3. STch = 25°C, Tch  $\leq$  150°C



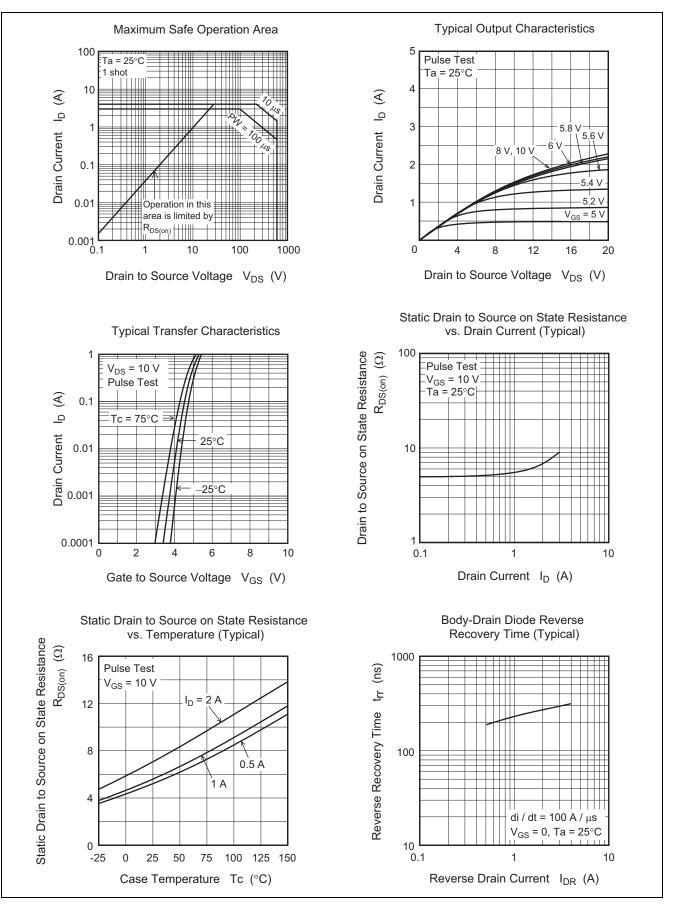
# **Electrical Characteristics**

						$(Ta = 25^{\circ}C)$
Item	Symbol	Min	Тур	Max	Unit	Test conditions
Drain to source breakdown voltage	V <sub>(BR)DSS</sub>	600	—	—	V	$I_D = 10 \text{ mA}, V_{GS} = 0$
Zero gate voltage drain current	I <sub>DSS</sub>	_	—	1	μΑ	$V_{DS} = 600 V, V_{GS} = 0$
Gate to source leak current	I <sub>GSS</sub>	_	_	±0.1	μΑ	$V_{GS}=\pm 30~V,~V_{DS}=0$
Gate to source cutoff voltage	V <sub>GS(off)</sub>	3.0	_	4.5	V	$V_{DS} = 10 \text{ V}, I_D = 1 \text{ mA}$
Static drain to source on state	R <sub>DS(on)</sub>		5.7	6.8	Ω	$I_D = 1 \text{ A}, V_{GS} = 10 \text{ V}^{Note4}$
resistance						
Input capacitance	Ciss	_	165	—	pF	V <sub>DS</sub> = 25 V
Output capacitance	Coss	—	20	—	pF	V <sub>GS</sub> = 0 f = 1 MHz
Reverse transfer capacitance	Crss	_	2.5	_	pF	
Turn-on delay time	t <sub>d(on)</sub>	_	28	—	ns	I <sub>D</sub> = 1 A
Rise time	tr	_	17	—	ns	$V_{GS} = 10 V$ $R_L = 300 \Omega$ $Rg = 10 \Omega$
Turn-off delay time	t <sub>d(off)</sub>	_	47	—	ns	
Fall time	t <sub>f</sub>	_	20	—	ns	
Total gate charge	Qg	_	6.2	—	nC	V <sub>DD</sub> = 480 V
Gate to source charge	Qgs	_	1.1	—	nC	V <sub>GS</sub> = 10 V I <sub>D</sub> = 2 A
Gate to drain charge	Qgd	_	3.6	—	nC	
Body-drain diode forward voltage	V <sub>DF</sub>	—	0.87	1.45	V	$I_F = 2 \text{ A}, V_{GS} = 0^{\text{Note4}}$
Body-drain diode reverse recovery time	t <sub>rr</sub>	—	260	—	ns	$I_F = 2 A, V_{GS} = 0$
						di <sub>F</sub> /dt = 100 A/µs

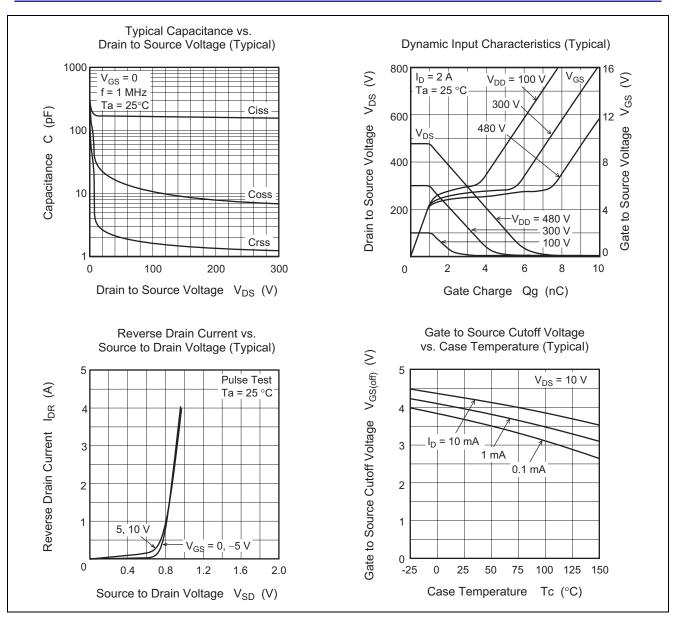
Notes: 4. Pulse test



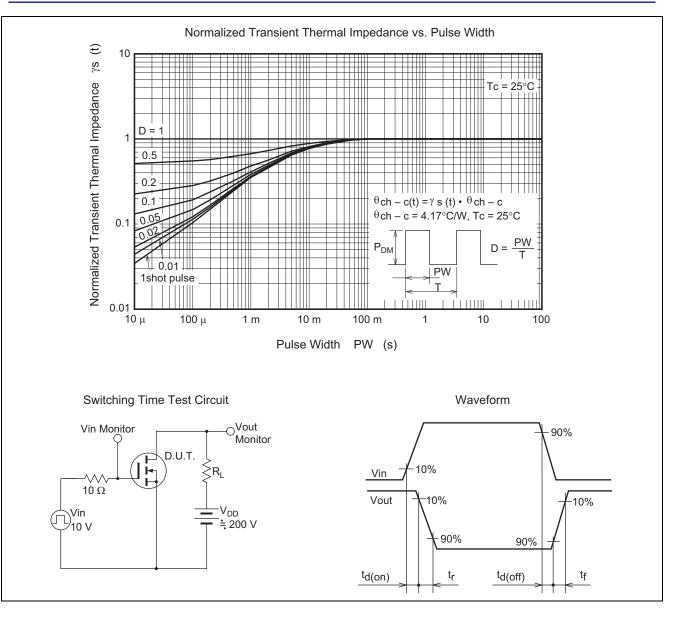
#### **Main Characteristics**





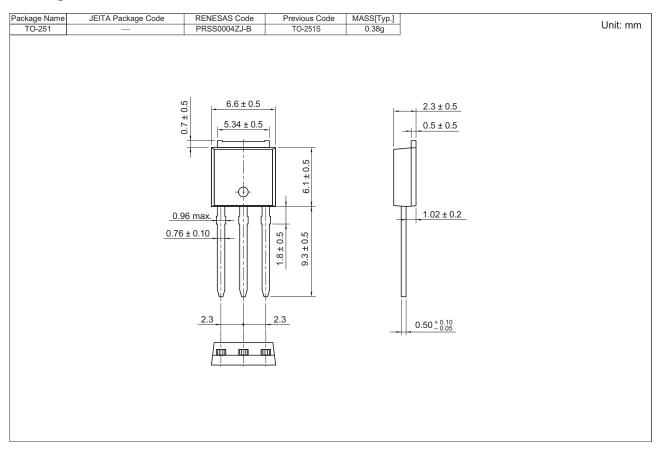








### **Package Dimensions**



## **Ordering Information**

Orderable Part Number	Quantity	Shipping Container
RJK6002DPH-E0#T2	70 pcs	Tube



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