

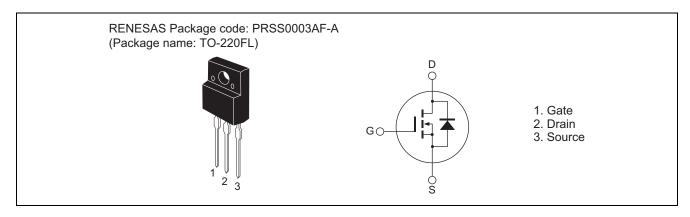
# RJK1525DPP-M0

150V - 17A - MOS FET High Speed Power Switching R07DS0966EJ0100 Rev.1.00 Nov 20, 2012

#### **Features**

- Low on-resistance  $R_{DS(on)}=0.089~\Omega~typ.~(at~I_D=8.5~A,~V_{GS}=10~V,~Ta=25^{\circ}C)$
- 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>	150	V
Gate to source voltage	V <sub>GSS</sub>	±30	V
Drain current	I <sub>D</sub> Note1	17	Α
Drain peak current	I <sub>D (pulse)</sub> Note2	50	Α
Body-drain diode reverse drain current	I <sub>DR</sub>	17	Α
Body-drain diode reverse drain peak current	I <sub>DR (pulse)</sub> Note2	50	A
Avalanche current	I <sub>AP</sub> Note3	17	A
Avalanche energy	E <sub>AR</sub> Note3	21.6	mJ
Channel dissipation	Pch Note4	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. Limited by maximum safe operating area

- 2.  $PW \le 10 \mu s$ , duty cycle  $\le 1\%$
- 3. STch =  $25^{\circ}$ C, Tch  $\leq 150^{\circ}$ C
- 4. Value at Tc = 25°C

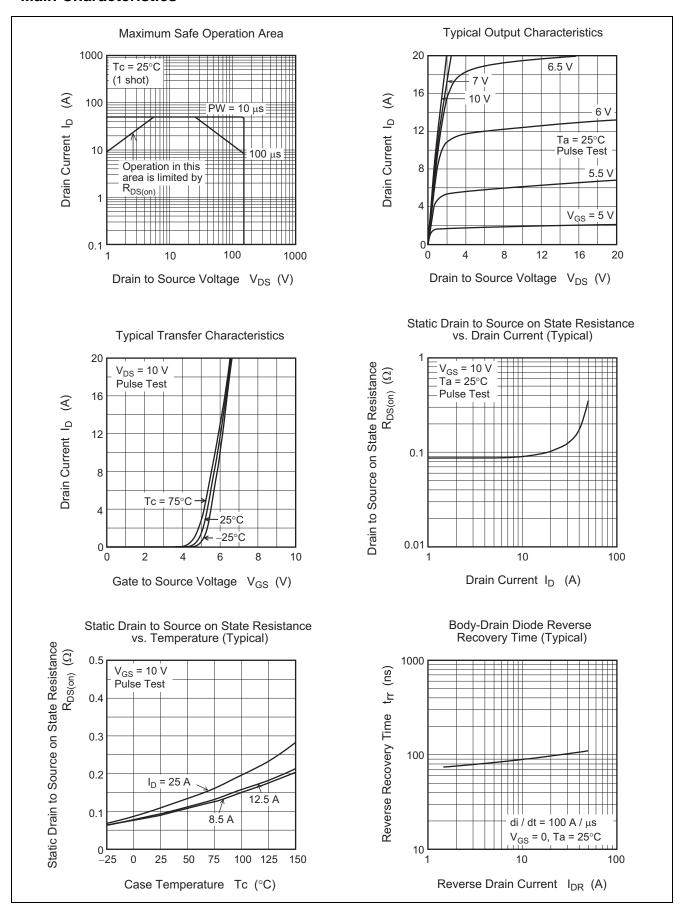
## **Electrical Characteristics**

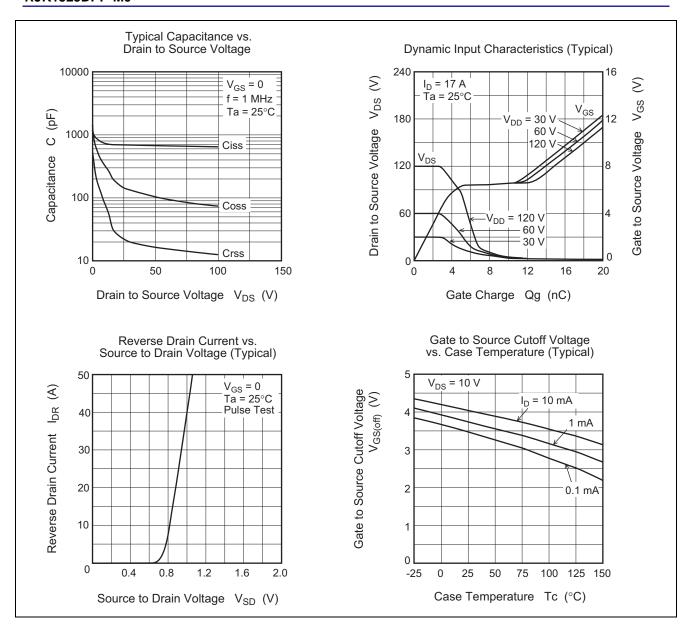
 $(Ta = 25^{\circ}C)$ 

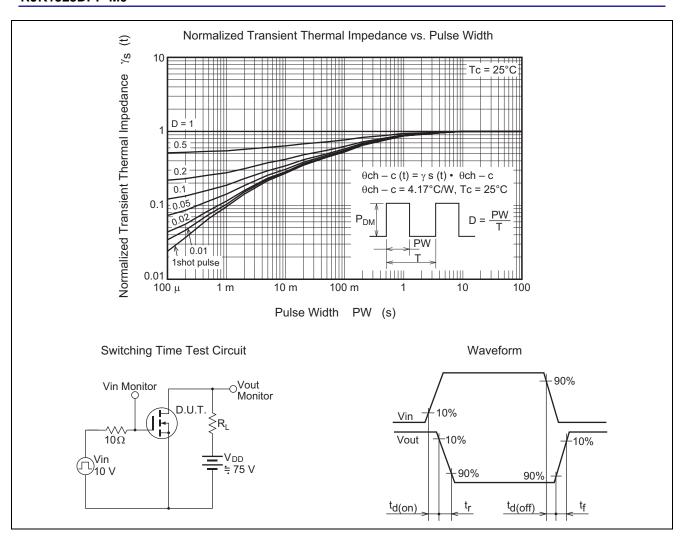
Item	Symbol	Min	Тур	Max	Unit	Test conditions
Drain to source breakdown voltage	$V_{(BR)DSS}$	150	_		V	$I_D = 10 \text{ mA}, V_{GS} = 0$
Zero gate voltage drain current	I <sub>DSS</sub>	_	_	1	μΑ	$V_{DS} = 150 \text{ V}, V_{GS} = 0$
Gate to source leak current	I <sub>GSS</sub>	_	_	±0.1	μΑ	$V_{GS} = \pm 30 \text{ V}, V_{DS} = 0$
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	yfs	6	11	_	S	$I_D = 8.5 \text{ A}, V_{DS} = 10 \text{ V}^{\text{Note5}}$
Static drain to source on state	R <sub>DS(on)</sub>	_	0.089	0.110	Ω	$I_D = 8.5 \text{ A}, V_{GS} = 10 \text{ V}^{Note5}$
resistance						
Input capacitance	Ciss	_	680	_	pF	V <sub>DS</sub> = 25 V
Output capacitance	Coss	_	150	_	pF	V <sub>GS</sub> = 0 f = 1 MHz
Reverse transfer capacitance	Crss	_	22	_	pF	
Turn-on delay time	t <sub>d(on)</sub>	_	22	_	ns	I <sub>D</sub> = 8.5 A
Rise time	t <sub>r</sub>	_	70	_	ns	V <sub>GS</sub> = 10 V
Turn-off delay time	$t_{d(off)}$	_	47	_	ns	$R_L = 8.8 \Omega$
Fall time	t <sub>f</sub>	_	11	_	ns	$Rg = 10 \Omega$
Total gate charge	Qg	_	18	_	nC	V <sub>DD</sub> = 120 V
Gate to source charge	Qgs	_	4.2	_	nC	V <sub>GS</sub> = 10 V I <sub>D</sub> = 17 A
Gate to drain charge	Qgd	_	8.3	_	nC	
Body-drain diode forward voltage	$V_{DF}$	_	0.88	1.40	V	$I_F = 17 \text{ A}, V_{GS} = 0^{\text{Note5}}$
Body-drain diode reverse recovery time	t <sub>rr</sub>	_	95	_	ns	I <sub>F</sub> = 17 A, V <sub>GS</sub> = 0
Body-drain diode reverse recovery charge	Q <sub>rr</sub>	_	0.3	_	μС	di <sub>F</sub> /dt = 100 A/μs

Notes: 5. Pulse test

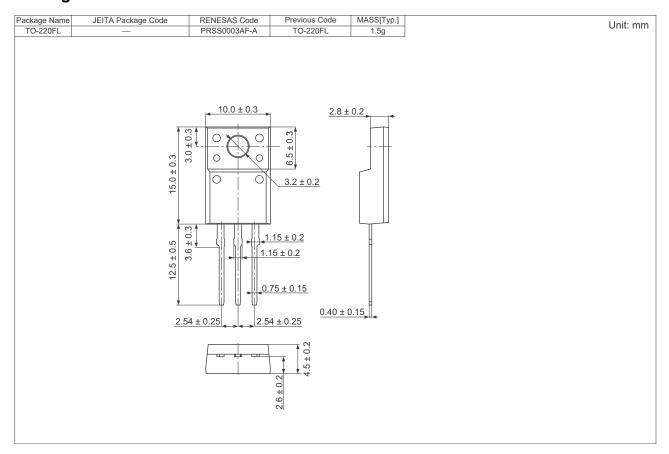
#### **Main Characteristics**







## **Package Dimensions**



## **Ordering Information**

Orderable Part Number	Quantity	Shipping Container
RJK1525DPP-M0#T2	600 pcs	Box (Tube)

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