

# **RJK0328DPB-01**

# Silicon N Channel Power MOS FET Power Switching

R07DS0264EJ0500 (Previous: REJ03G1637-0400) Rev.5.00 Mar 01, 2011

#### **Features**

- High speed switching
- Capable of 4.5 V gate drive
- Low drive current
- High density mounting
- Low on-resistance

 $R_{DS(on)}\!=1.6~\text{m}\Omega$  typ. (at  $V_{GS}\!=10~V)$ 

- Pb-free
- Halogen-free

#### **Outline**

RENESAS Package code: PTZZ0005DA-A (Package name: LFPAK)

5
0
1, 2, 3 Source
4 Gate
5 Drain

### **Absolute Maximum Ratings**

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

Item	Symbol	Ratings	Unit
Drain to source voltage	$V_{DSS}$	30	V
Gate to source voltage	$V_{GSS}$	±20	V
Drain current	I <sub>D</sub>	60	А
Drain peak current	I <sub>D(pulse)</sub> Note1	240	А
Body-drain diode reverse drain current	I <sub>DR</sub>	60	А
Avalanche current	I <sub>AP</sub> Note 2	30	А
Avalanche energy	E <sub>AR</sub> Note 2	90	mJ
Channel dissipation	Pch Note3	65	W
Channel to case thermal resistance	θch-c Note3	1.93	°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 Tch = 25°C, Rg  $\geq$  50  $\Omega$
- 3.  $Tc = 25^{\circ}C$

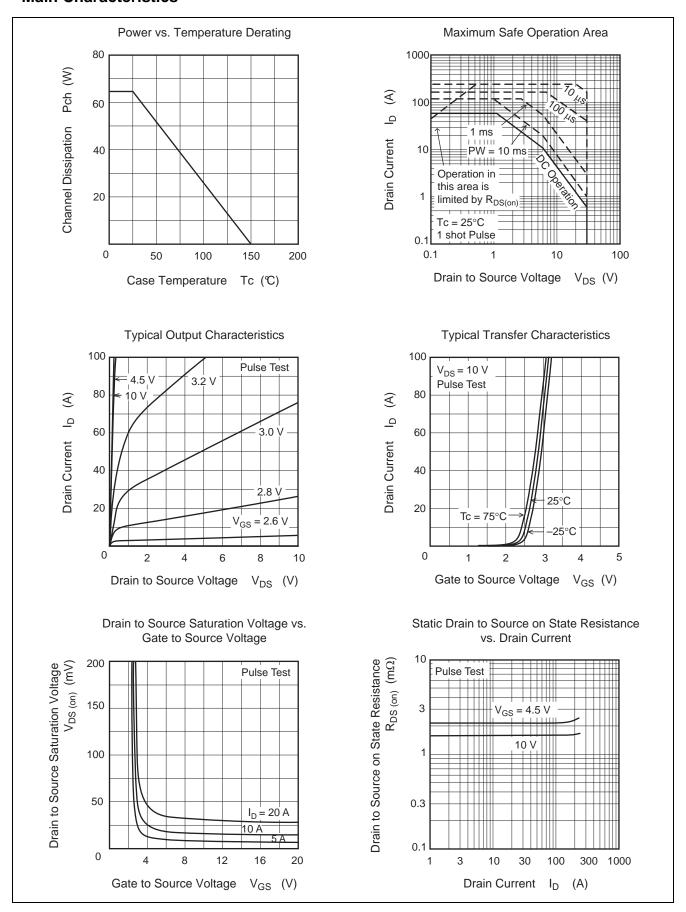
# **Electrical Characteristics**

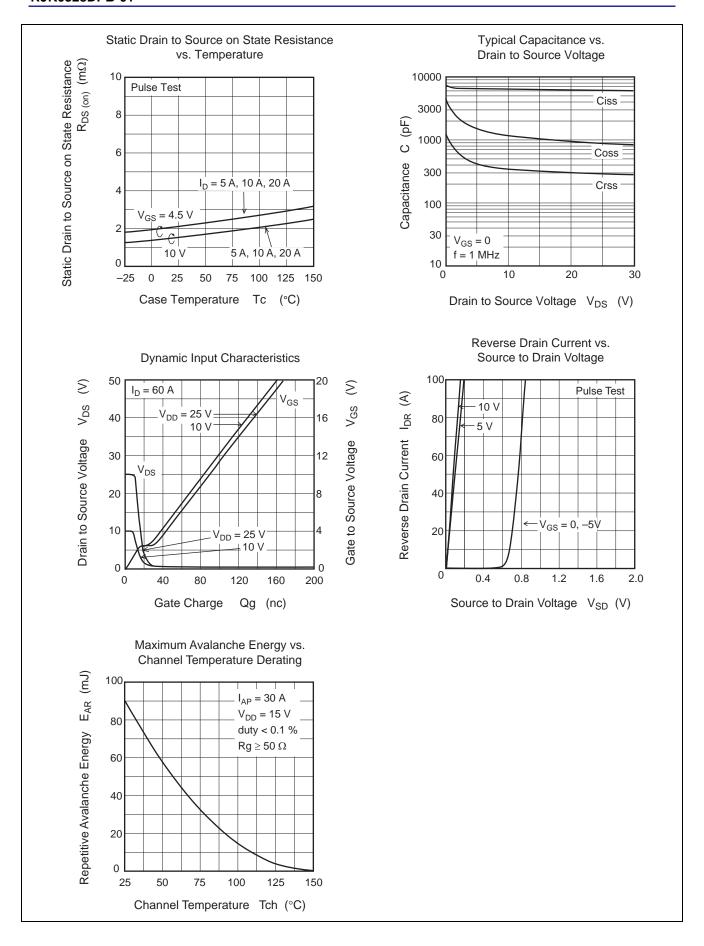
 $(Ta = 25^{\circ}C)$ 

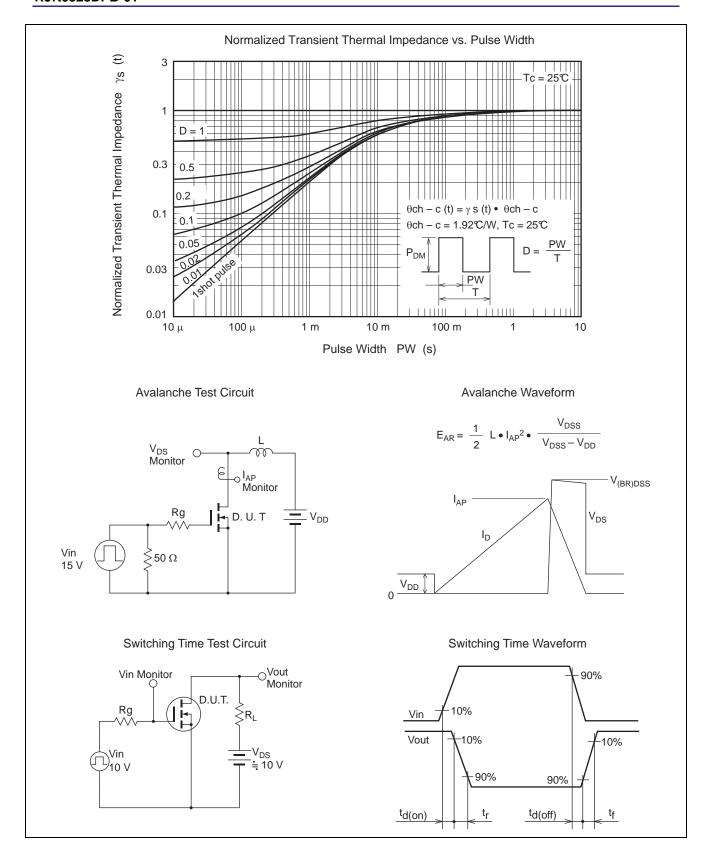
Item	Symbol	Min	Тур	Max	Unit	Test Conditions	
Drain to source breakdown voltage	$V_{(BR)DSS}$	30	_	_	V	$I_D = 10 \text{ mA}, V_{GS} = 0$	
Gate to source leak current	I <sub>GSS</sub>		_	±0.1	μΑ	$V_{GS} = \pm 20 \text{ V}, V_{DS} = 0$	
Zero gate voltage drain current	I <sub>DSS</sub>	_	_	1	μΑ	$V_{DS} = 30 \text{ V}, V_{GS} = 0$	
Gate to source cutoff voltage	$V_{GS(off)}$	1.2	_	2.5	V	$V_{DS} = 10 \text{ V}, I_{D} = 1 \text{ mA}$	
Static drain to source on state	R <sub>DS(on)</sub>	_	1.6	2.1	mΩ	$I_D = 30 \text{ A}, V_{GS} = 10 \text{ V}^{\text{Note4}}$	
resistance	R <sub>DS(on)</sub>	_	2.1	2.9	mΩ	$I_D = 30 \text{ A}, V_{GS} = 4.5 \text{ V}^{\text{Note4}}$	
Forward transfer admittance	y <sub>fs</sub>	_	100	_	S	$I_D = 30 \text{ A}, V_{DS} = 10 \text{ V}^{\text{Note4}}$	
Input capacitance	Ciss	_	6380	_	pF	$V_{DS} = 10 \text{ V}, V_{GS} = 0,$	
Output capacitance	Coss	_	1150	_	pF	f = 1 MHz	
Reverse transfer capacitance	Crss	_	330	_	pF		
Gate Resistance	Rg	_	0.7	_	Ω		
Total gate charge	Qg	_	42	_	nC	$V_{DD} = 10 \text{ V}, V_{GS} = 4.5 \text{ V},$ $I_{D} = 60 \text{ A}$	
Gate to source charge	Qgs	_	15	_	nC		
Gate to drain charge	Qgd	_	8.8	_	nC		
Turn-on delay time	$t_{d(on)}$	_	9.4	_	ns	$V_{GS} = 10 \text{ V}, I_D = 30 \text{ A},$	
Rise time	t <sub>r</sub>	_	4.3	_	ns	$V_{DD}\cong 10~V,~R_L=0.33~\Omega,$	
Turn-off delay time	$t_{\text{d(off)}}$	_	61.5	_	ns	$Rg = 4.7 \Omega$	
Fall time	t <sub>f</sub>	_	7.3	_	ns		
Body-drain diode forward voltage	$V_{DF}$	_	0.78	1.02	V	$I_F = 60 \text{ A}, V_{GS} = 0^{\text{Note4}}$	
Body-drain diode reverse recovery	t <sub>rr</sub>	_	42	_	ns	$I_F = 60 \text{ A}, V_{GS} = 0$	
time						di <sub>F</sub> / dt = 100 A/ μs	
Body–drain diode reverse recovery	$Q_{rr}$	_	46	_	nC		
charge							

Notes: 4. Pulse test

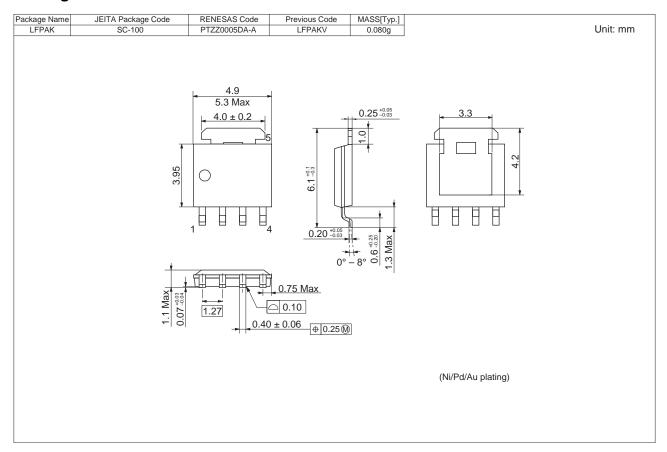
#### **Main Characteristics**







# **Package Dimensions**



# **Ordering Information**

Part No.	Quantity	Shipping Container
RJK0328DPB-01-J0	2500 pcs	Taping

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