

RJK0330DPB-01

Silicon N Channel Power MOS FET Power Switching

R07DS0266EJ0500 (Previous: REJ03G1639-0400) 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

 $R_{DS(on)}$ = 2.1 m Ω 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 _D	45	А
Drain peak current	I _{D(pulse)} Note1	180	А
Body-drain diode reverse drain current	I _{DR}	45	А
Avalanche current	I _{AP} Note 2	22	А
Avalanche energy	E _{AR} Note 2	48.4	mJ
Channel dissipation	Pch Note3	55	W
Channel to case thermal resistance	θch-c Note3	2.27	°C/W
Channel temperature	Tch	150	°C
Storage temperature	Tstg	-55 to +150	°C

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

- 2. Value at Tch = 25°C, Rg \geq 50 Ω
- 3. $Tc = 25^{\circ}C$

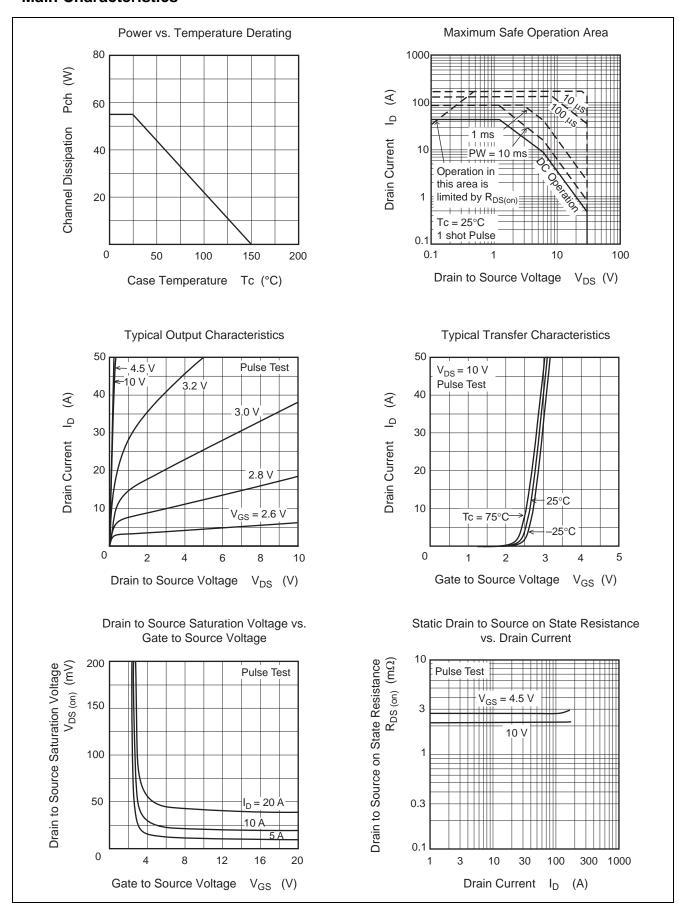
Electrical Characteristics

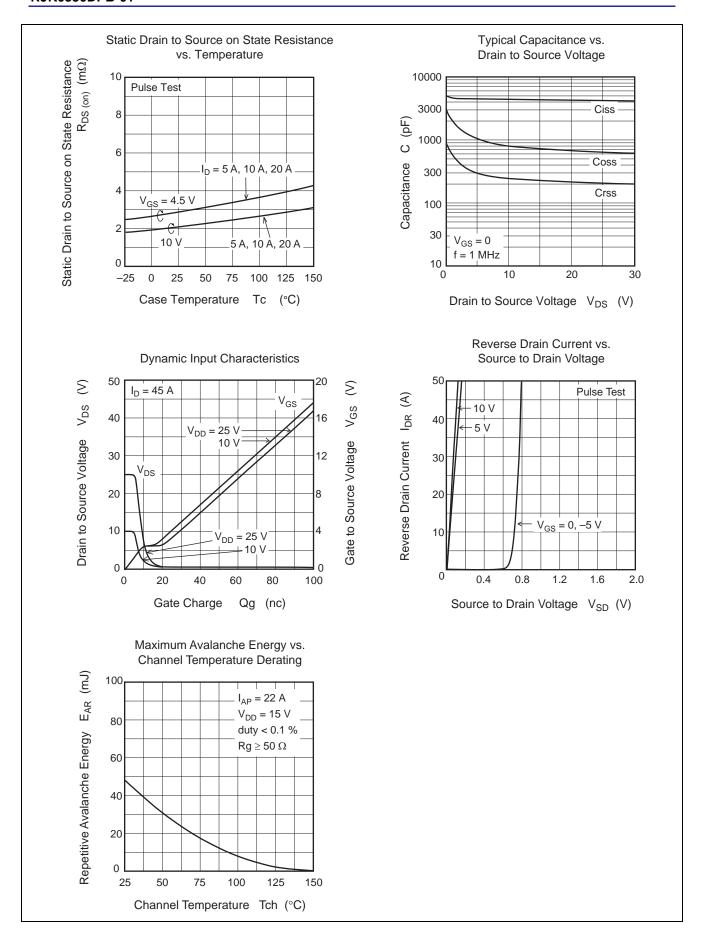
 $(Ta = 25^{\circ}C)$

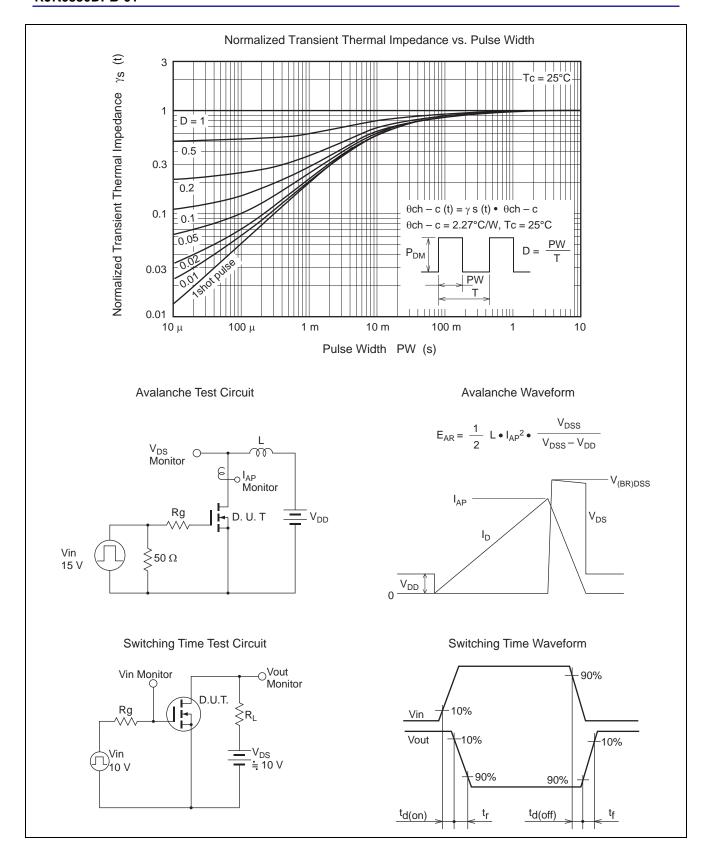
Item	Symbol	Min	Тур	Max	Unit	Test Conditions
Drain to source breakdown voltage	$V_{(BR)DSS}$	30	_	_	V	$I_D = 10 \text{ mA}, V_{GS} = 0$
Gate to source leak current	I _{GSS}	_	_	±0.1	μΑ	$V_{GS} = \pm 20 \text{ V}, V_{DS} = 0$
Zero gate voltage drain current	I _{DSS}	_	_	1	μΑ	$V_{DS} = 30 \text{ V}, V_{GS} = 0$
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 _{DS(on)}	_	2.1	2.7	mΩ	$I_D = 22.5 \text{ A}, V_{GS} = 10 \text{ V}^{\text{Note4}}$
resistance	R _{DS(on)}	_	2.8	3.9	mΩ	$I_D = 22.5 \text{ A}, V_{GS} = 4.5 \text{ V}^{\text{Note4}}$
Forward transfer admittance	y _{fs}	_	90	_	S	$I_D = 22.5 \text{ A}, V_{DS} = 10 \text{ V}^{\text{Note4}}$
Input capacitance	Ciss	_	4300	_	pF	V _{DS} = 10 V, V _{GS} = 0, f = 1 MHz
Output capacitance	Coss	_	800	_	pF	
Reverse transfer capacitance	Crss	_	245	_	pF	
Gate Resistance	Rg	_	0.4	_	Ω	
Total gate charge	Qg	_	27	_	nC	$V_{DD} = 10 \text{ V}, V_{GS} = 4.5 \text{ V},$ $I_{D} = 45 \text{ A}$
Gate to source charge	Qgs	_	10.5	_	nC	
Gate to drain charge	Qgd	_	5.8	_	nC	
Turn-on delay time	t _{d(on)}	_	6.8	_	ns	$V_{GS} = 10 \text{ V}, I_D = 22.5 \text{ A},$
Rise time	t _r	_	3.9	_	ns	$V_{DD}\cong 10 \text{ V}, \text{ R}_{L}=0.44 \Omega,$
Turn-off delay time	t _{d(off)}	_	50	_	ns	$Rg = 4.7 \Omega$
Fall time	t _f	_	5.4	_	ns	
Body-drain diode forward voltage	V_{DF}	_	0.78	1.02	V	$I_F = 45 \text{ A}, V_{GS} = 0^{\text{Note4}}$
Body-drain diode reverse recovery time	t _{rr}	_	36	_	ns	$I_F = 45 \text{ A}, V_{GS} = 0$ $di_F / dt = 100 \text{ A} / \mu \text{s}$
Body-drain diode reverse recovery charge	Q _{rr}	_	34	_	nC	

Notes: 4. Pulse test

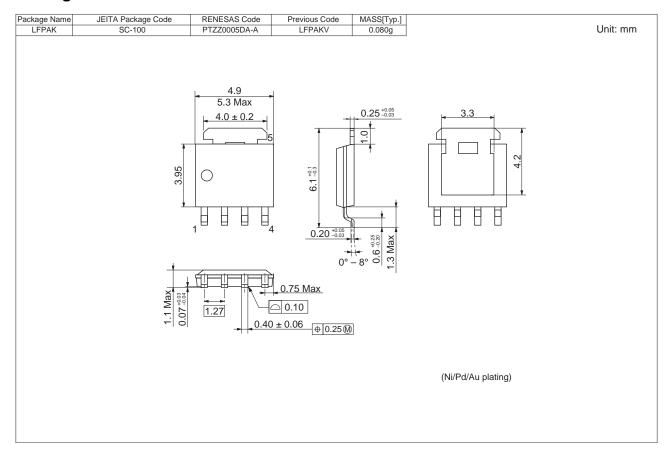
Main Characteristics







Package Dimensions



Ordering Information

Part No.	Quantity	Shipping Container
RJK0330DPB-01-J0	2500 pcs	Taping

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