

RJK5026DPE

Silicon N Channel MOS FET High Speed Power Switching

R07DS0494EJ0200 (Previous: REJ03G1852-0100) Rev.2.00

Jul 21, 2011

Features

- Low on-resistance $R_{DS(on)}=1.35~\Omega~typ.~(at~I_D=3~A,~V_{GS}=10~V,~Ta=25^{\circ}C)$
- Low leakage current
- High speed switching

Outline

RENESAS Package code: PRSS0004AE-B
(Package name: LDPAK(S)-(1))

1. Gate
2. Drain
3. Source
4. Drain

Absolute Maximum Ratings

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

Item	Symbol	Ratings	Unit
Drain to source voltage	V _{DSS}	500	V
Gate to source voltage	V _{GSS}	±30	V
Drain current	I _D	6	Α
Drain peak current	I _{D (pulse)} Note1	18	Α
Body-drain diode reverse drain current	I _{DR}	6	Α
Body-drain diode reverse drain peak current	I _{DR (pulse)} Note1	18	Α
Avalanche current	I _{AP} Note3	4	Α
Avalanche energy	E _{AR} Note3	0.88	mJ
Channel dissipation	Pch Note2	62.5	W
Channel to case thermal impedance	θch-c	2	°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 Tc = 25°C
- 3. STch = 25° C, Tch $\leq 150^{\circ}$ C

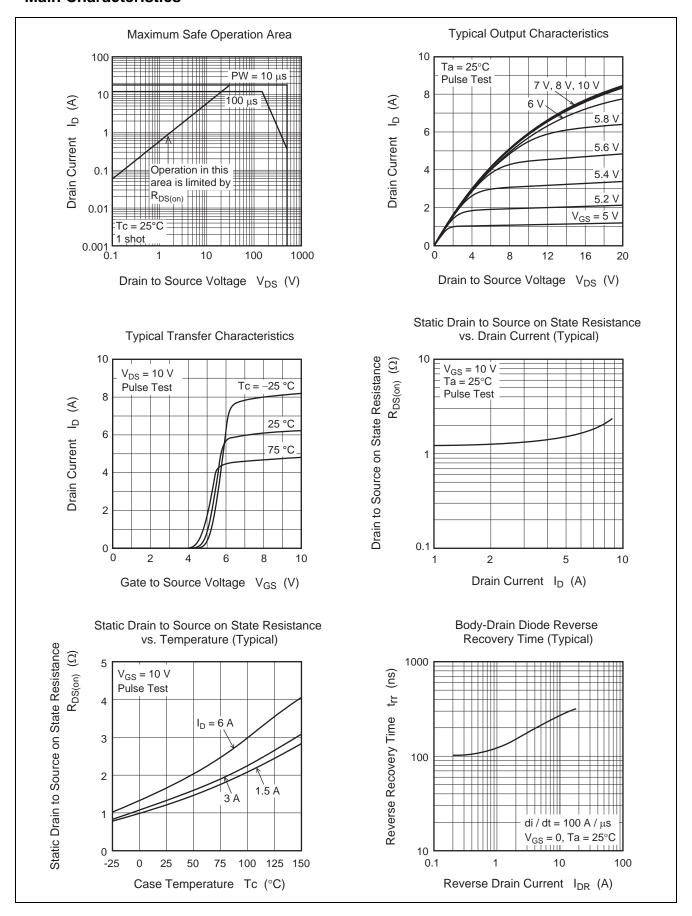
Electrical Characteristics

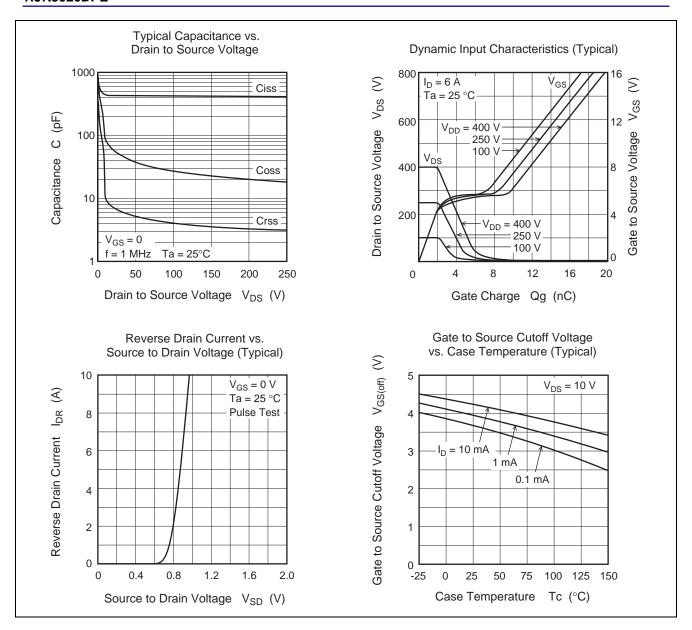
 $(Ta = 25^{\circ}C)$

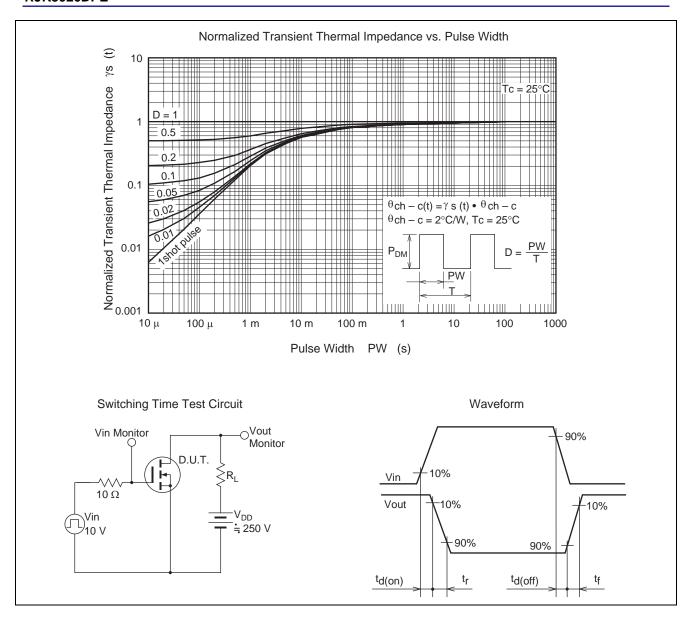
Item	Symbol	Min	Тур	Max	Unit	Test conditions
Drain to source breakdown voltage	$V_{(BR)DSS}$	500	_	_	V	$I_D = 10 \text{ mA}, V_{GS} = 0$
Zero gate voltage drain current	I _{DSS}			1	μΑ	$V_{DS} = 500 \text{ V}, V_{GS} = 0$
Gate to source leak current	I _{GSS}	_	_	±0.1	μΑ	$V_{GS} = \pm 30 \text{ V}, V_{DS} = 0$
Gate to source cutoff voltage	V _{GS(off)}	3.0	_	4.5	V	$V_{DS} = 10 \text{ V}, I_D = 1 \text{ mA}$
Static drain to source on state resistance	R _{DS(on)}	_	1.35	1.70	Ω	$I_D = 3 \text{ A}, V_{GS} = 10 \text{ V}^{Note4}$
Input capacitance	Ciss	_	440	_	pF	V _{DS} = 25 V
Output capacitance	Coss	_	52	_	pF	V _{GS} = 0 f = 1 MHz
Reverse transfer capacitance	Crss	_	7	_	pF	
Turn-on delay time	t _{d(on)}	_	26	_	ns	$\begin{split} I_D &= 3 \text{ A} \\ V_{GS} &= 10 \text{ V} \\ R_L &= 83.3 \Omega \\ Rg &= 10 \Omega \end{split}$
Rise time	t _r	_	19	_	ns	
Turn-off delay time	t _{d(off)}	_	50	_	ns	
Fall time	t _f	_	14	_	ns	
Total gate charge	Qg	_	14	_	nC	$V_{DD} = 400 \text{ V}$ $V_{GS} = 10 \text{ V}$ $I_D = 6 \text{ A}$
Gate to source charge	Qgs	_	2.5	_	nC	
Gate to drain charge	Qgd	_	6.9	_	nC	
Body-drain diode forward voltage	V_{DF}	_	0.9	1.5	V	$I_F = 6 \text{ A}, V_{GS} = 0^{\text{Note4}}$
Body-drain diode reverse recovery time	t _{rr}	_	230	_	ns	$I_F = 6 \text{ A}, V_{GS} = 0$ di _F /dt = 100 A/ μ s

Notes: 4. Pulse test

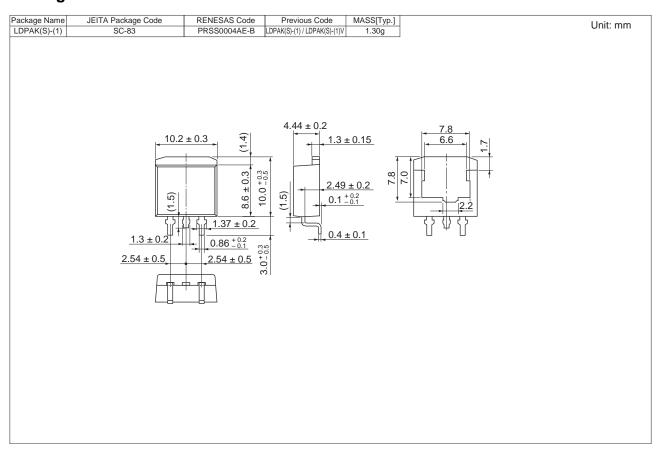
Main Characteristics







Package Dimensions



Ordering Information

Orderable Part Number	Quantity	Shipping Container
RJK5026DPE-00-J3	1000 pcs	Taping

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