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April 1st, 2010 Renesas Electronics Corporation

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2SK3000

Silicon N Channel MOS FET Low Frequency Power Switching

REJ03G0379-0300Z (Previous ADE-208-585A (Z)) Rev.3.00 Jun.15.2004

Features

- Low on-resistance $R_{DS(on)} = 0.16 \Omega$ typ. (V_{GS} = 10 V, I_D = 450 mA)
- 4 V gate drive devices.
- Small package (MPAK)
- Expansive drain to source surge power capability

Outline



Absolute Maximum Ratings

			$(Ta = 25^{\circ}C)$
Item	Symbol	Ratings	Unit
Drain to source voltage	V _{DSS}	40	V
Gate to source voltage	V _{GSS}	±10	V
Drain current	ID	1.0	А
Drain peak current	Note1 ID(pulse)	4.0	A
Reverse drain current	I _{DR}	1.0	А
Channel dissipation	Pch Note2	400	mW
Channel temperature	Tch	150	°C
Storage temperature	Tstg	-55 to +150	°C

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

2. When using the glass epoxy board (10 mm x 10 mm x 1 mm^t)



Electrical Characteristics

						$(Ta = 25^{\circ}C)$
Item	Symbol	Min	Тур	Мах	Unit	Test Conditions
Drain to source breakdown voltage	V _{(BR)DSS}	40	_	60	V	$I_D = 100 \ \mu A, \ V_{GS} = 0$
Drain to source voltage	V _{DS(SUS)}	40	—	—	V	$L = 100 \ \mu H, I_D = 3 \ A$
Gate to source breakdown voltage	V _{(BR)GSS}	±10	_	_	V	$I_G = \pm 100 \ \mu A, \ V_{DS} = 0$
Zero gate voltage drain current	I _{DSS}	—	—	1.0	μΑ	$V_{DS} = 40 V, V_{GS} = 0$
Gate to source leak current	I _{GSS}	—	—	±5	μΑ	$V_{GS} = \pm 6.5 V, V_{DS} = 0$
Gate to source cutoff voltage	V _{GS(off)}	1.1	—	2.1	V	$I_D = 10 \ \mu A, \ V_{DS} = 5 \ V$
Forward transfer admittance	y _{fs}	0.5	1.2	—	S	$I_D = 450 \text{ mA}, V_{DS} = 10 \text{ V}^{\text{Note3}}$
Static drain to source on state	R _{DS(on)}	—	0.24	0.5	Ω	$I_D = 450 \text{ mA}, V_{GS} = 4 \text{V}^{\text{Note3}}$
resistance	R _{DS(on)}	—	0.16	0.3	Ω	$I_D = 450 \text{ mA}, V_{GS} = 10 \text{ V}^{\text{Note3}}$
Input capacitance	Ciss	—	14.0	—	pF	V _{DS} = 10 V
Output capacitance	Coss	—	68	—	pF	$V_{GS} = 0$
Reverse transfer capacitance	Crss	—	3.0	—	pF	f = 1 MHz
Turn-on delay time	t _{d(on)}	—	0.12	—	μs	$V_{GS} = 4 \text{ V}, I_D = 450 \text{ mA}$
Rise time	tr	—	0.6	—	μs	$R_L = 22 \Omega$
Turn-off delay time	t _{d(off)}	_	1.7		μs	
Fall time	t _f		1.4		μs	

Notes: 3. Pulse test



Main Characteristics











Package Dimensions



Ordering Information

Part Name	Quantity	Shipping Container
2SK3000	3000 pcs	φ178 mm Reel Taping (TL)

Note: For some grades, production may be terminated. Please contact the Renesas sales office to check the state of production before ordering the product.

