

# 2SK3000

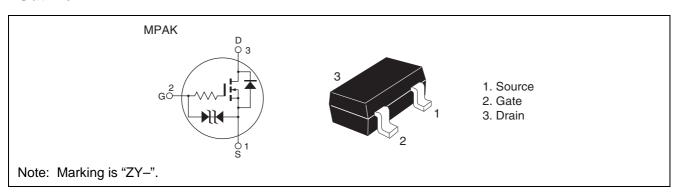
# Silicon N Channel MOS FET Low Frequency Power Switching

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

#### **Features**

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

#### **Outline**



## **Absolute Maximum Ratings**

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

			(1a 25 c)
Item	Symbol	Ratings	Unit
Drain to source voltage	V <sub>DSS</sub>	40	V
Gate to source voltage	V <sub>GSS</sub>	±10	V
Drain current	I <sub>D</sub>	1.0	A
Drain peak current	I <sub>D(pulse)</sub> Note1	4.0	A
Reverse drain current	I <sub>DR</sub>	1.0	A
Channel dissipation	Pch Note2	400	mW
Channel temperature	Tch	150	°C
Storage temperature	Tstg	-55 to +150	°C

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

2. When using the glass epoxy board (10 mm x 10 mm x 1 mm<sup>t</sup>)

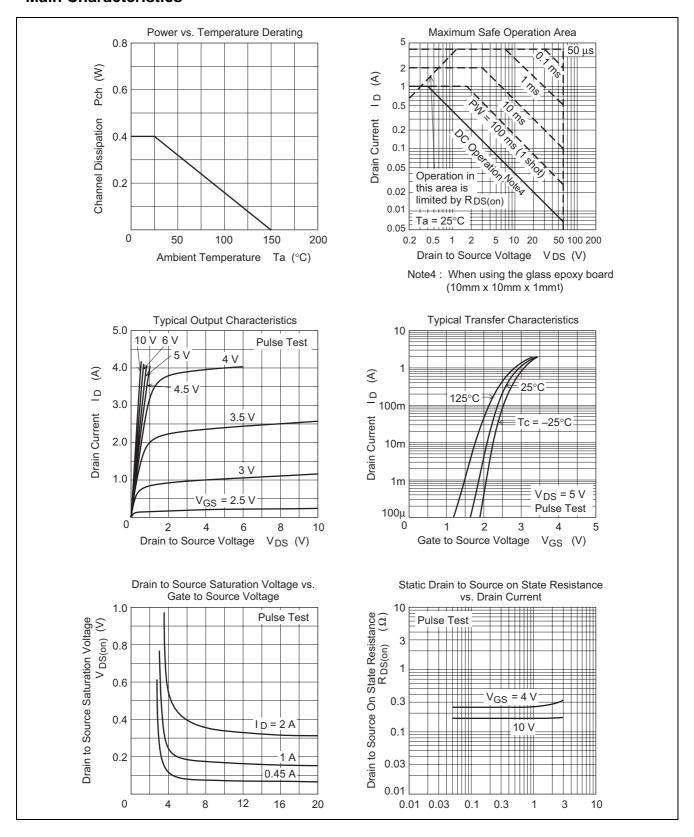
## **Electrical Characteristics**

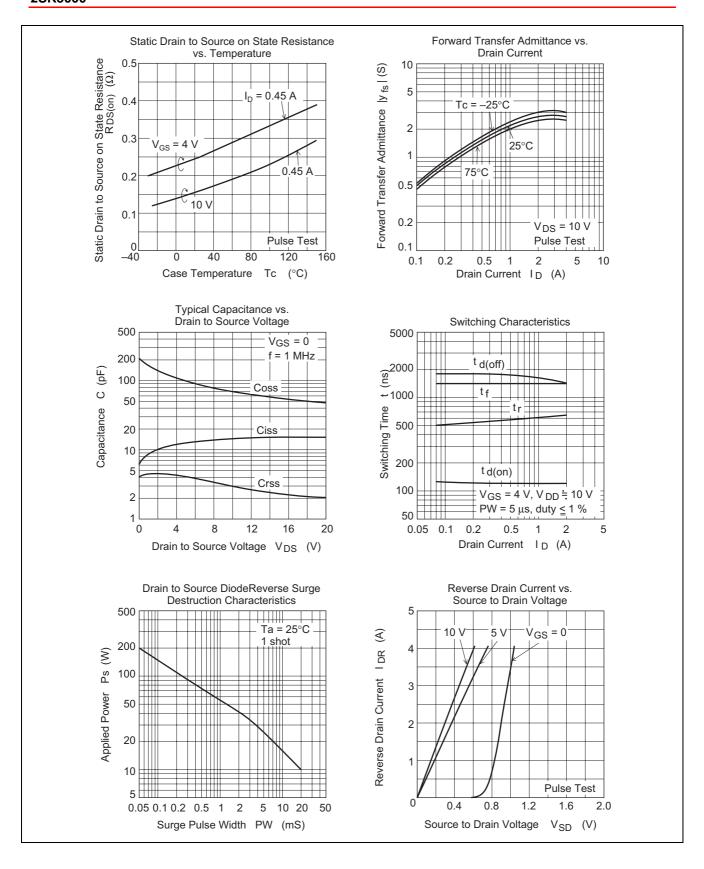
 $(Ta = 25^{\circ}C)$ 

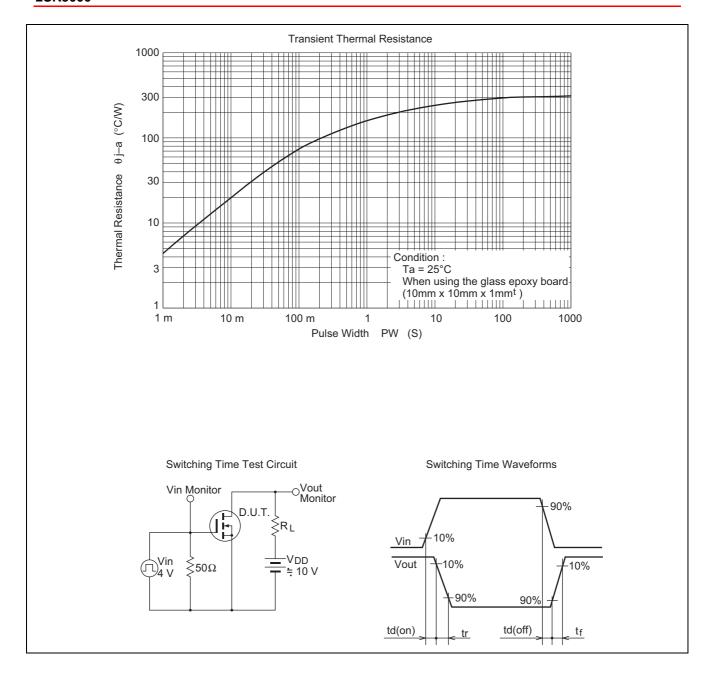
Item	Symbol	Min	Тур	Max	Unit	Test Conditions
Drain to source breakdown voltage	V <sub>(BR)DSS</sub>	40	_	60	V	$I_D = 100  \mu A,  V_{GS} = 0$
Drain to source voltage	$V_{DS(SUS)}$	40	_	_	V	$L = 100 \mu H, I_D = 3 A$
Gate to source breakdown voltage	$V_{(BR)GSS}$	±10	_	_	V	$I_G = \pm 100 \ \mu A, \ V_{DS}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

Notes: 3. Pulse test

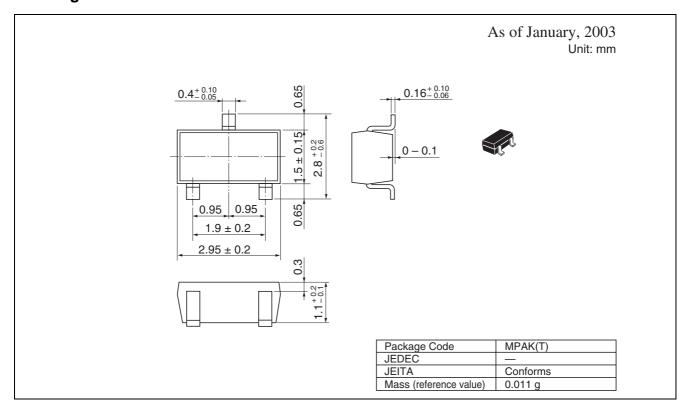
## **Main Characteristics**







## **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.

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Renesas Technology Singapore Pte. Ltd.
1, Harbour Front Avenue, #06-10, Keppel Bay Tower, Singapore 098632 Tel: <65> 6213-0200, Fax: <65> 6278-8001