

# 2SK1336

### Silicon N Channel MOS FET

REJ03G0933-0200

(Previous: ADE-208-1273)

Rev.2.00

Sep 07, 2005

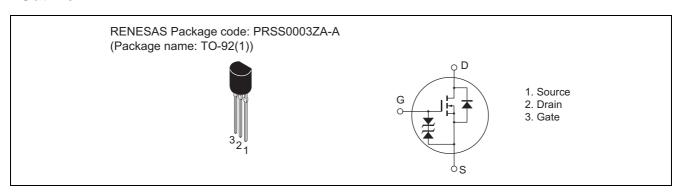
### **Application**

High speed power switching

#### **Features**

- Low on-resistance
- High speed switching
- Low drive current
- 4 V gate drive device
  - Can be driven from 5 V source
- Suitable for motor drive, DC-DC converter, power switch and solenoid drive

#### **Outline**



## **Absolute Maximum Ratings**

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

Item	Symbol	Ratings	Unit
Drain to source voltage	V <sub>DSS</sub>	60	V
Gate to source voltage	V <sub>GSS</sub>	±20	V
Drain current	I <sub>D</sub>	0.3	А
Drain peak current	I <sub>D(pulse)</sub> *1	1.2	А
Body to drain diode reverse drain current	I <sub>DR</sub>	0.3	А
Channel dissipation	Pch	400	mW
Channel temperature	Tch	150	°C
Storage temperature	Tstg	-55 to +150	°C

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

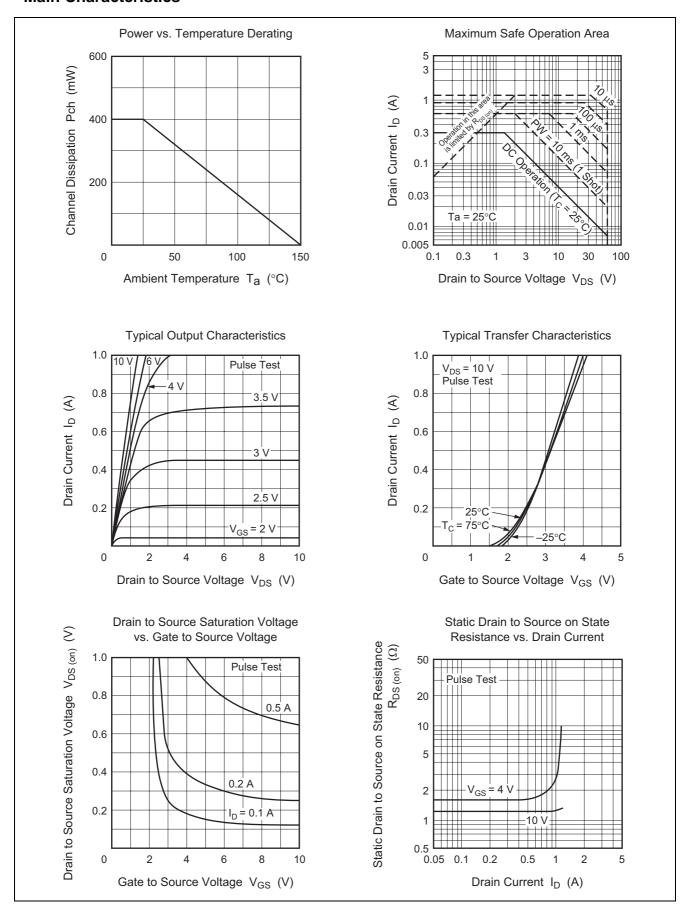
#### **Electrical Characteristics**

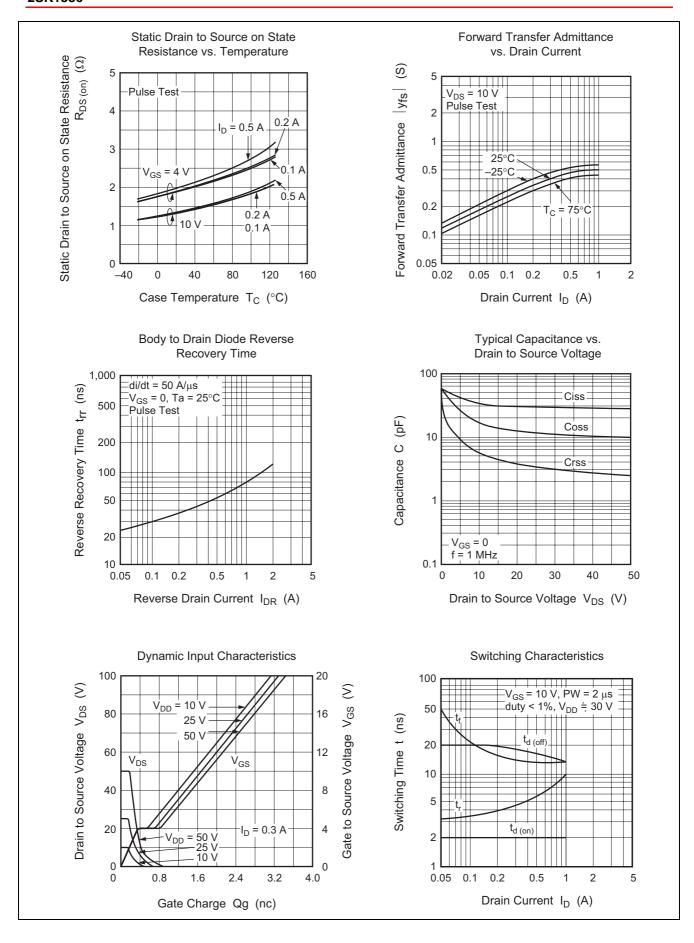
 $(Ta = 25^{\circ}C)$ 

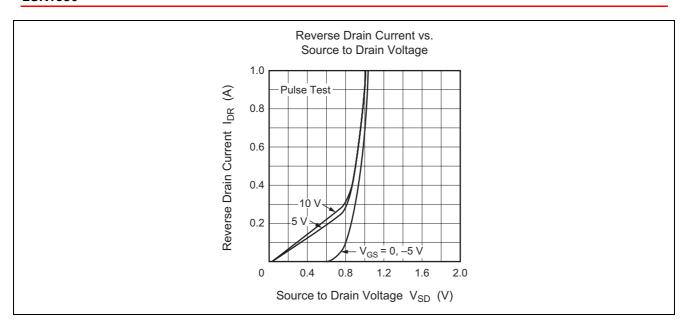
Item	Symbol	Min	Тур	Max	Unit	Test conditions
Drain to source breakdown voltage	$V_{(BR)DSS}$	60	_	_	V	$I_D = 10 \text{ mA}, V_{GS} = 0$
Gate to source breakdown voltage	$V_{(BR)GSS}$	±20	_	_	V	$I_G = \pm 100 \ \mu A, \ V_{DS} = 0$
Gate to source leak current	$I_{GSS}$	_	_	±10	μΑ	$V_{GS} = \pm 16 \text{ V}, V_{DS} = 0$
Zero gate voltage drain current	I <sub>DSS</sub>	_	_	50	μΑ	$V_{DS} = 50 \text{ V}, V_{GS} = 0$
Gate to source cutoff voltage	$V_{GS(off)}$	1.0	_	2.0	V	$I_D = 1 \text{ mA}, V_{DS} = 10 \text{ V}$
Static drain to source on state	R <sub>DS(on)</sub>	_	1.3	1.7	Ω	$I_D = 0.2 \text{ A}, V_{GS} = 10 \text{ V}^{*2}$
resistance		_	1.8	2.5	Ω	$I_D = 0.2 \text{ A}, V_{GS} = 4 \text{ V}^{*2}$
Forward transfer admittance	y <sub>fs</sub>	0.22	0.35	_	S	$I_D = 0.2 \text{ A}, V_{DS} = 10 \text{ V}^{*2}$
Input capacitance	Ciss	_	33	_	pF	$V_{DS} = 10 \text{ V}, V_{GS} = 0,$
Output capacitance	Coss	_	17	_	pF	f = 1 MHz
Reverse transfer capacitance	Crss	_	5	_	pF	
Turn-on delay time	t <sub>d(on)</sub>	_	2	_	ns	$I_D = 0.2 \text{ A}, V_{GS} = 10 \text{ V},$
Rise time	t <sub>r</sub>	_	4	_	ns	$R_L = 150 \Omega$
Turn-off delay time	t <sub>d(off)</sub>	_	18	_	ns	
Fall time	t <sub>f</sub>	_	16	_	ns	
Body to drain diode forward voltage	$V_{DF}$	_	0.9	_	V	$I_F = 0.3 \text{ A}, V_{GS} = 0$
Body to drain diode reverse recovery time	t <sub>rr</sub>	_	45	_	ns	$I_F = 0.3 \text{ A}, V_{GS} = 0,$ $di_F/dt = 50 \text{ A/}\mu\text{s}$

Note: 2. Pulse test

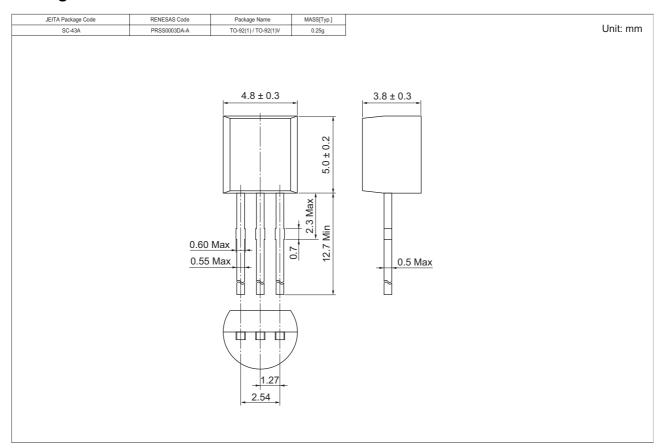
#### **Main Characteristics**







## **Package Dimensions**



### **Ordering Information**

Part Name	Quantity	Shipping Container
2SK1336TZ-E	2500 pcs	Taping

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