

2SK1301

Silicon N Channel MOS FET

REJ03G0920-0200

(Previous: ADE-208-1259)

Rev.2.00 Sep 07, 2005

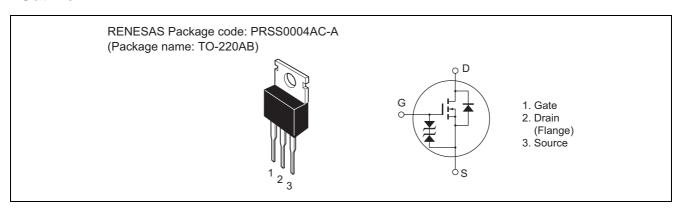
Application

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 _{DSS}	100	V
Gate to source voltage	V _{GSS}	±20	V
Drain current	I _D	15	Α
Drain peak current	I _{D(pulse)} *1	60	Α
Body to drain diode reverse drain current	I _{DR}	15	Α
Channel dissipation	Pch ^{*2}	50	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 $T_C = 25^{\circ}C$

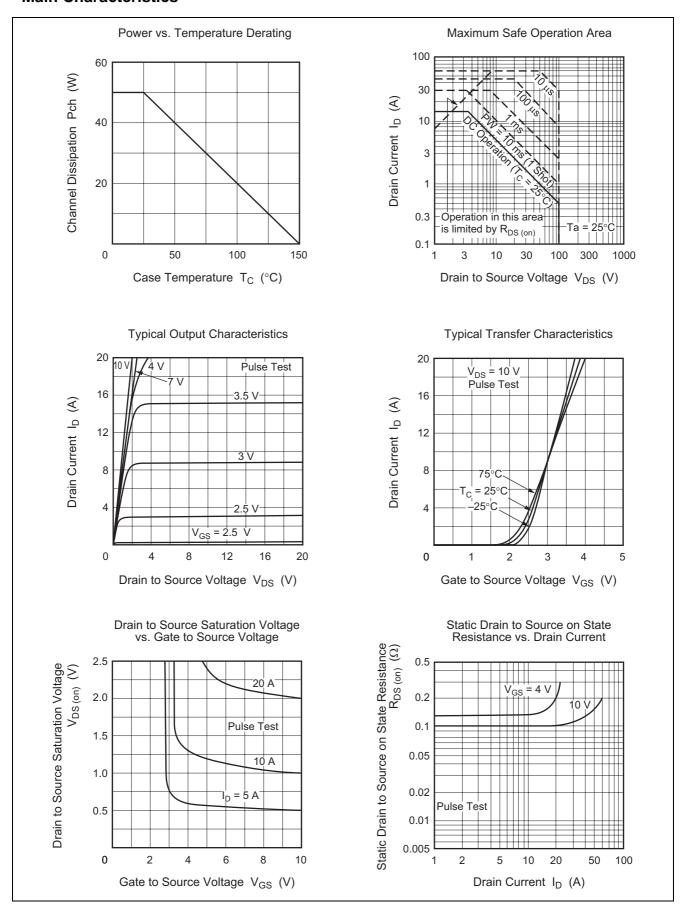
Electrical Characteristics

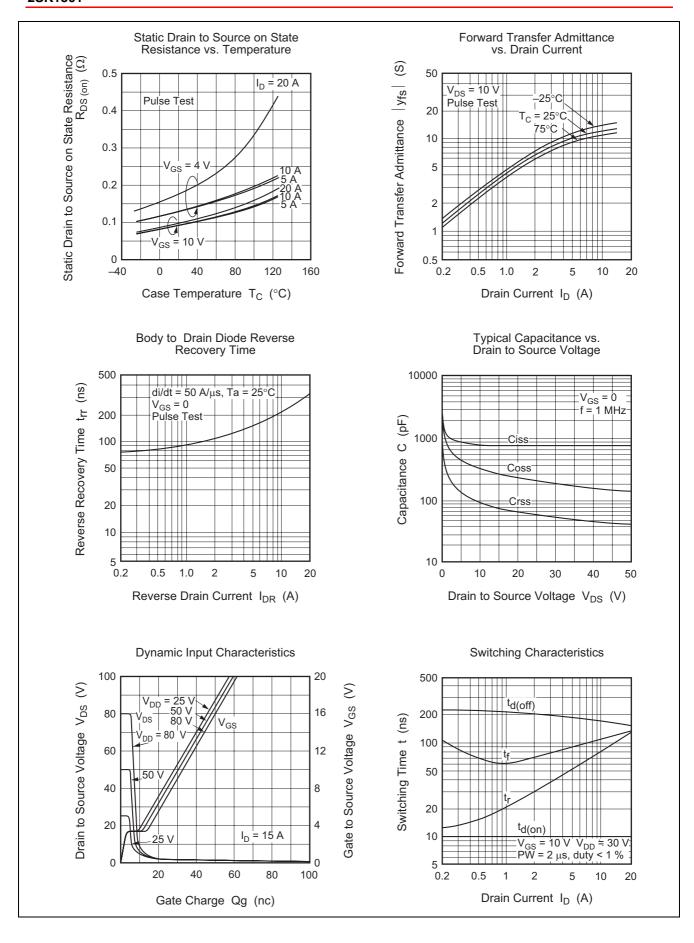
 $(Ta = 25^{\circ}C)$

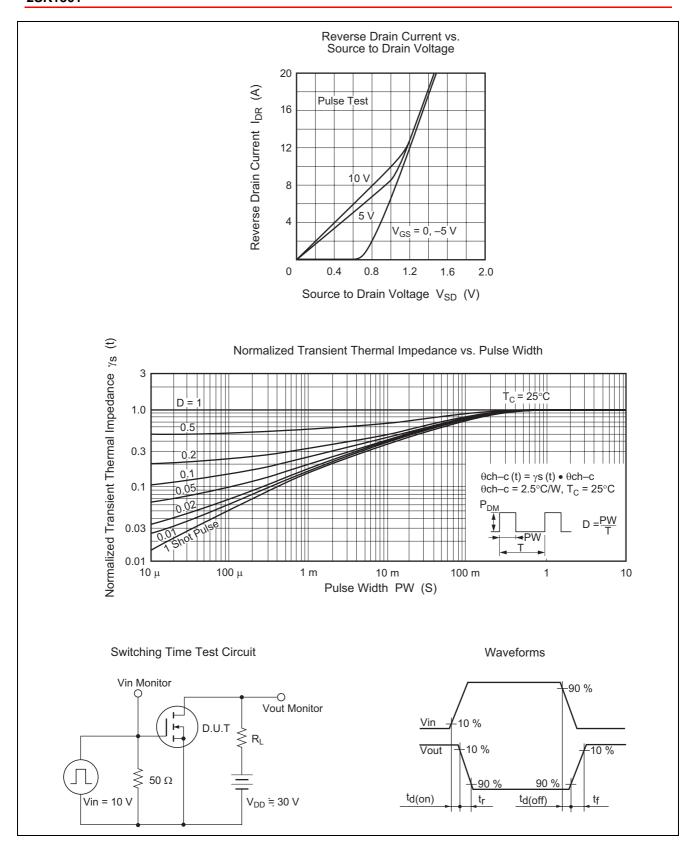
Item	Symbol	Min	Тур	Max	Unit	Test conditions
Drain to source breakdown voltage	$V_{(BR)DSS}$	100	_	_	V	$I_D = 10 \text{ mA}, V_{GS} = 0$
Gate to source breakdown voltage	V _{(BR)GSS}	±20	_	_	V	$I_G = \pm 100 \ \mu A, \ V_{DS} = 0$
Gate to source leak current	I_{GSS}	_	_	±10	μΑ	$V_{GS} = \pm 16 \text{ V}, V_{DS} = 0$
Zero gate voltage drain current	I _{DSS}	1	_	250	μΑ	$V_{DS} = 80 \text{ V}, V_{GS} = 0$
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 _{DS(on)}	_	0.10	0.13	Ω	$I_D = 8 \text{ A}, V_{GS} = 10 \text{ V}^{*3}$
resistance		_	0.13	0.18	Ω	$I_D = 8 A, V_{GS} = 4 V^{*3}$
Forward transfer admittance	y _{fs}	7	11	_	S	$I_D = 8 \text{ A}, V_{DS} = 10 \text{ V}^{*3}$
Input capacitance	Ciss	_	860	_	pF	$V_{DS} = 10 \text{ V}, V_{GS} = 0,$
Output capacitance	Coss	_	340	_	pF	f = 1 MHz
Reverse transfer capacitance	Crss	_	100	_	pF]
Turn-on delay time	t _{d(on)}	_	10	_	ns	$I_D = 8 A, V_{GS} = 10 V,$
Rise time	t _r	_	70	_	ns	$R_L = 3.75 \Omega$
Turn-off delay time	t _{d(off)}	_	180	_	ns]
Fall time	t _f	_	100	_	ns]
Body to drain diode forward voltage	V_{DF}	_	1.3	_	V	$I_F = 15 \text{ A}, V_{GS} = 0$
Body to drain diode reverse recovery time	t _{rr}		250	_	ns	$I_F = 15 \text{ A}, V_{GS} = 0,$ $di_F/dt = 50 \text{ A}/\mu\text{s}$

Note: 3. Pulse test

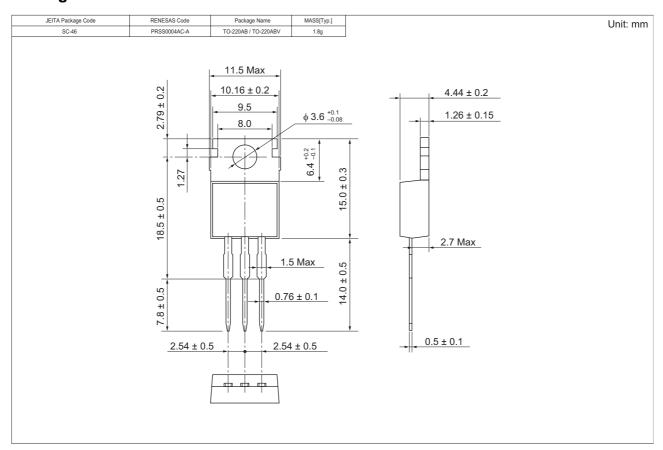
Main Characteristics







Package Dimensions



Ordering Information

Part Name	Quantity	Shipping Container
2SK1301-E	500 pcs	Box (Sack)

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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