

2SK1521, 2SK1522

Silicon N Channel MOS FET

REJ03G0949-0200

(Previous: ADE-208-1289)

Rev.2.00 Sep 07, 2005

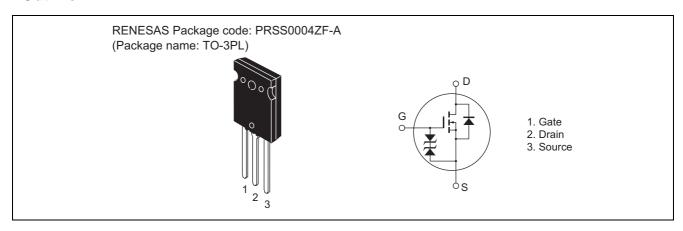
Application

High speed power switching

Features

- Low on-resistance
- High speed switching
- Low drive current
- Built-in fast recovery diode ($t_{rr} = 120 \text{ ns}$)
- Suitable for motor control, switching regulator, DC-DC converter

Outline



Absolute Maximum Ratings

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

Item		Symbol	Ratings	Unit
Drain to source voltage 2SK1521		V _{DSS}	450	V
	2SK1522		500	
Gate to source voltage		V _{GSS}	±30	V
Drain current		I _D	50	А
Drain peak current		I _{D(pulse)} *1	200	А
Body to drain diode reverse drain current		I _{DR}	50	А
Channel dissipation		Pch*2	250	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 $T_C = 25$ °C

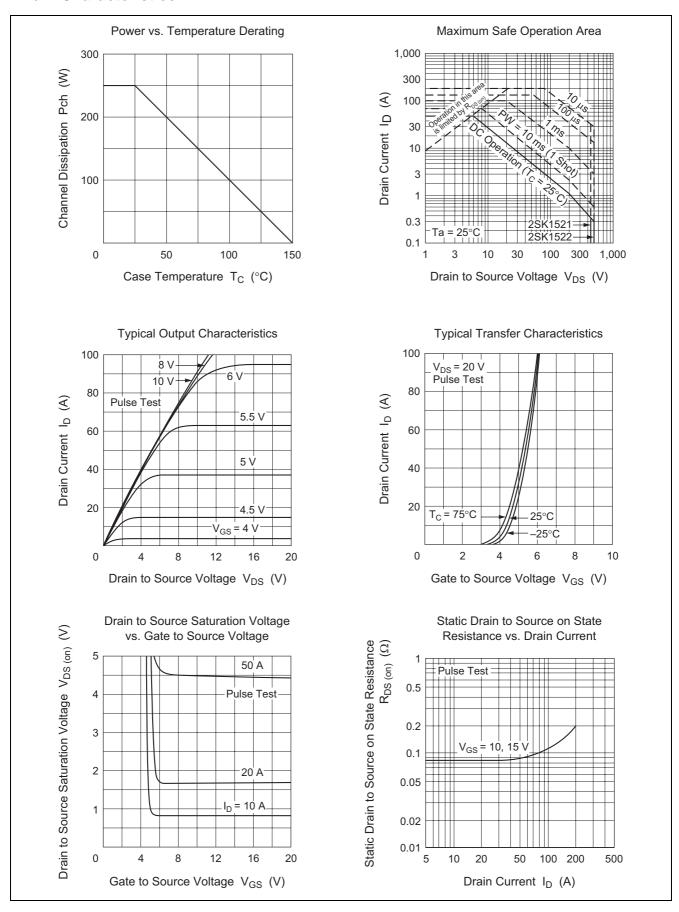
Electrical Characteristics

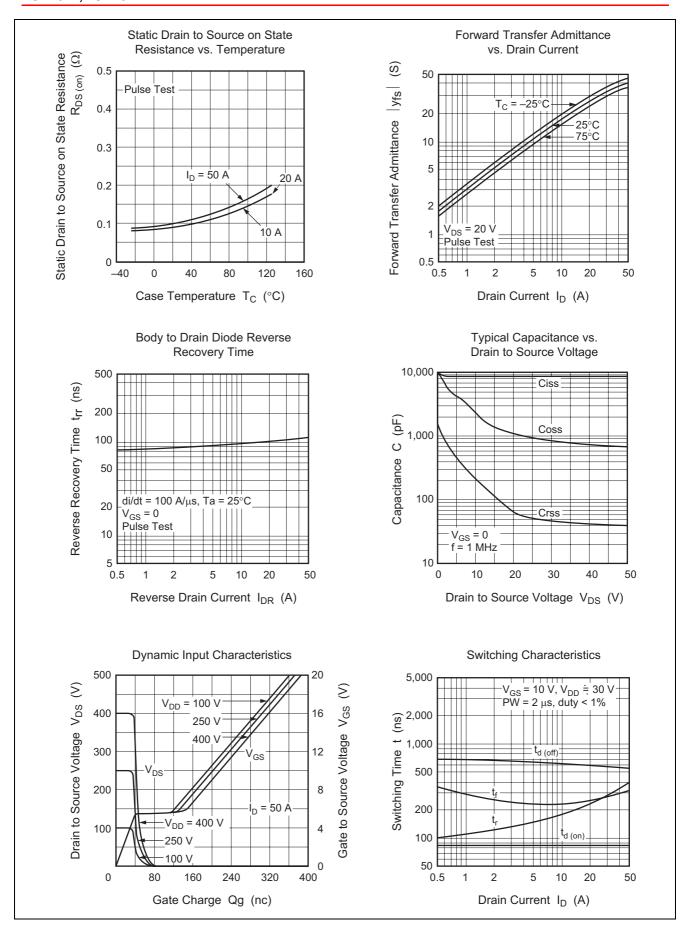
 $(Ta = 25^{\circ}C)$

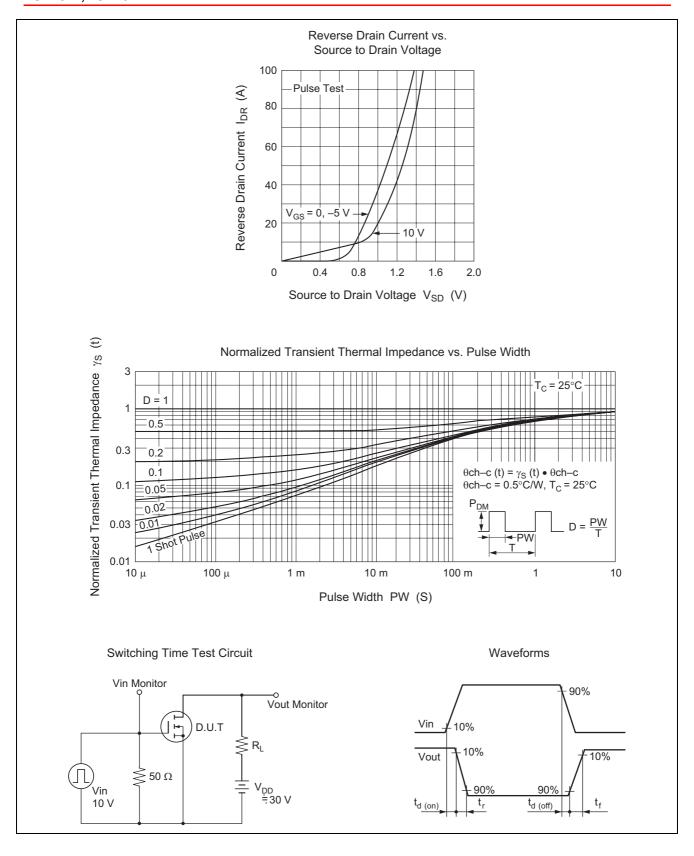
Item		Symbol	Min	Тур	Max	Unit	Test conditions
Drain to source	2SK1521	$V_{(BR)DSS}$	450	_	_	V	$I_D = 10 \text{ mA}, V_{GS} = 0$
breakdown voltage	2SK1522		500				
Gate to source breakdow	n voltage	$V_{(BR)GSS}$	±30		1	V	$I_G = \pm 100 \ \mu A, \ V_{DS} = 0$
Gate to source leak current		I_{GSS}	_	-	±10	μΑ	$V_{GS} = \pm 25 \text{ V}, V_{DS} = 0$
Zero gate voltage drain	2SK1521	I _{DSS}	_	_	250	μΑ	V _{DS} = 360 V, V _{GS} = 0
current	2SK1522						$V_{DS} = 400 \text{ V}, V_{GS} = 0$
Gate to source cutoff voltage		V _{GS(off)}	2.0		3.0	V	I _D = 1 mA, V _{DS} = 10 V
Static drain to source on	2SK1521	R _{DS(on)}	_	0.08	0.10	Ω	$I_D = 25 \text{ A}, V_{GS} = 10 \text{ V}^{*3}$
state resistance	2SK1522		_	0.085	0.11		
Forward transfer admittance		y _{fs}	22	35	_	S	$I_D = 25 \text{ A}, V_{DS} = 10 \text{ V}^{*3}$
Input capacitance		Ciss	_	8700	_	pF	$V_{DS} = 10 \text{ V}, V_{GS} = 0,$
Output capacitance		Coss	_	2400	_	pF	f = 1 MHz
Reverse transfer capacitance		Crss	_	235	_	pF	
Turn-on delay time		t _{d(on)}	_	85	_	ns	$I_D = 25 \text{ A}, V_{GS} = 10 \text{ V},$
Rise time		t _r	_	250	_	ns	$R_L = 1.2 \Omega$
Turn-off delay time		$t_{d(off)}$	_	600	_	ns	
Fall time		t _f	_	250	-	ns	
Body to drain diode forward voltage		V_{DF}	_	1.1	_	V	$I_F = 50 \text{ A}, V_{GS} = 0$
Body to drain diode reverse recovery		t _{rr}	_	120	_	ns	$I_F = 50 \text{ A}, V_{GS} = 0,$
time							$di_F/dt = 100 A/\mu s$

Note: 3. Pulse test

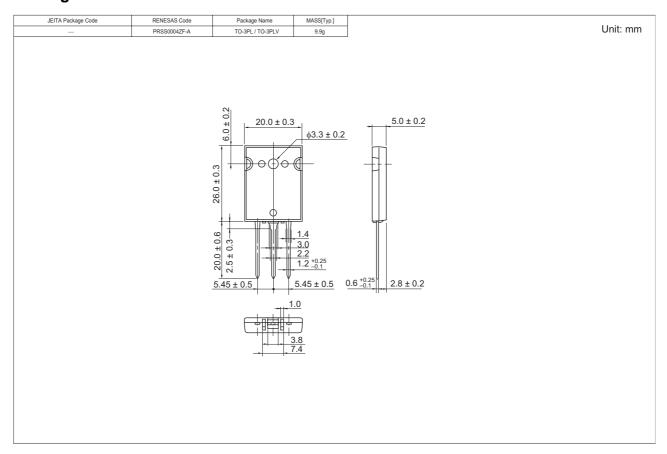
Main Characteristics







Package Dimensions



Ordering Information

Part Name	Quantity	Shipping Container
2SK1521-E	500 pcs	Box (Case)
2SK1522-E	500 pcs	Box (Case)

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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