

2SK1517, 2SK1518 Silicon N Channel MOS FET

REJ03G0947-0200 (Previous: ADE-208-1287) Rev.2.00 Sep 07, 2005

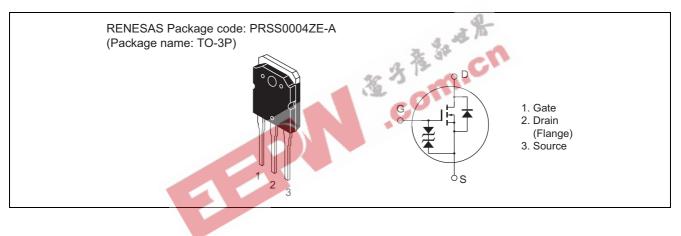
Application

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		Ratings	Unit
2SK1517	V _{DSS}	450	V
2SK1518		500	
Gate to source voltage		±30	V
	ID	20	А
	I _{D(pulse)} *1	80	А
Body to drain diode reverse drain current		20	А
	Pch∗₂	120	W
	Tch	150	°C
	Tstg	-55 to +150	°C
	2SK1517 2SK1518	2SK1517 VDSS 2SK1518 VGSS ID ID ID(pulse) ID e drain current IDR Pch*2 Tch	$\begin{tabular}{ c c c c c c c c c c c c c c c c c c c$

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

2. Value at $T_C = 25^{\circ}C$

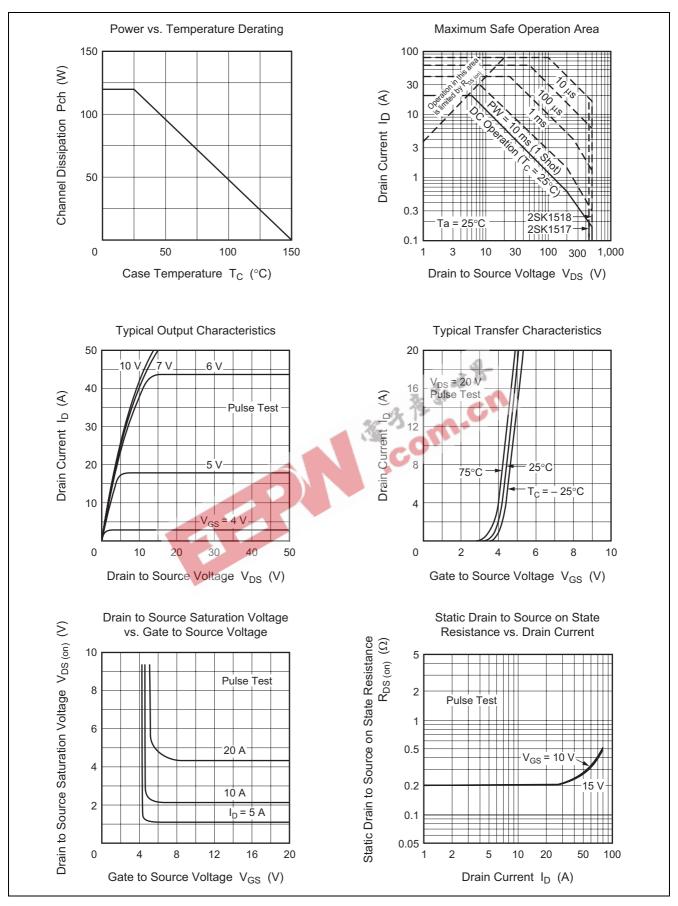
Electrical Characteristics

							$(Ta = 25^{\circ}C)$	
Item		Symbol	Min	Тур	Max	Unit	Test conditions	
Drain to source	2SK1517	V _{(BR)DSS}	450	—	—	V	$I_D = 10 \text{ mA}, V_{GS} = 0$	
breakdown voltage	2SK1518		500			0		
Gate to source breakdown voltage		V _{(BR)GSS}	±30	_	_	- 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	2SK1517	I _{DSS}	—	-	250	μA	$V_{DS} = 360 \text{ V}, \text{ V}_{GS} = 0$	
current	2SK1518			36			$V_{DS} = 400 \text{ V}, V_{GS} = 0$	
Gate to source cutoff voltage		V _{GS(off)}	2.0		3.0	V	$I_D = 1 \text{ mA}, V_{DS} = 10 \text{ V}$	
Static drain to source on	2SK1517	R _{DS(on)}	<u> </u>	0.20	0.25	Ω	I_D = 10 A, V_{GS} = 10 V * ³	
state resistance	2SK1518		\mathcal{H}	0.22	0.27			
Forward transfer admittance		y _{fs}	10	16	—	S	$I_D = 10 \text{ A}, V_{DS} = 10 \text{ V}^{*3}$	
Input capacitance		Ciss		3050	—	pF	$V_{DS} = 10 V, V_{GS} = 0,$	
Output capacitance		Coss	_	940	—	pF	f = 1 MHz	
Reverse transfer capacita	nce	Crss	—	140	—	pF		
Turn-on delay time		t _{d(on)}	—	35	—	ns	$I_D = 10 \text{ A}, V_{GS} = 10 \text{ V},$	
Rise time		tr	—	130	—	ns	$R_L = 3 \Omega$	
Turn-off delay time		t _{d(off)}	—	240	—	ns		
Fall time		t _f	—	105	—	ns]	
Body to drain diode forwa	rd voltage	V _{DF}	—	1.0	_	V	$I_F = 20 \text{ A}, V_{GS} = 0$	
Body to drain diode reverse recovery		t _{rr}	—	120	_	ns	$I_F = 20 \text{ A}, V_{GS} = 0,$	
time							di _F /dt = 100 A/µs	

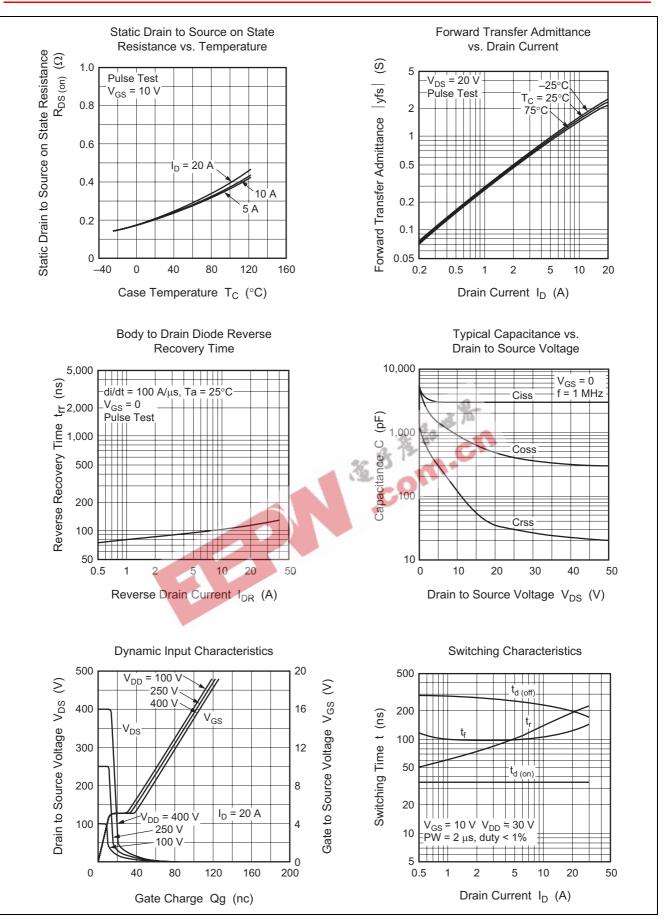
Note: 3. Pulse test



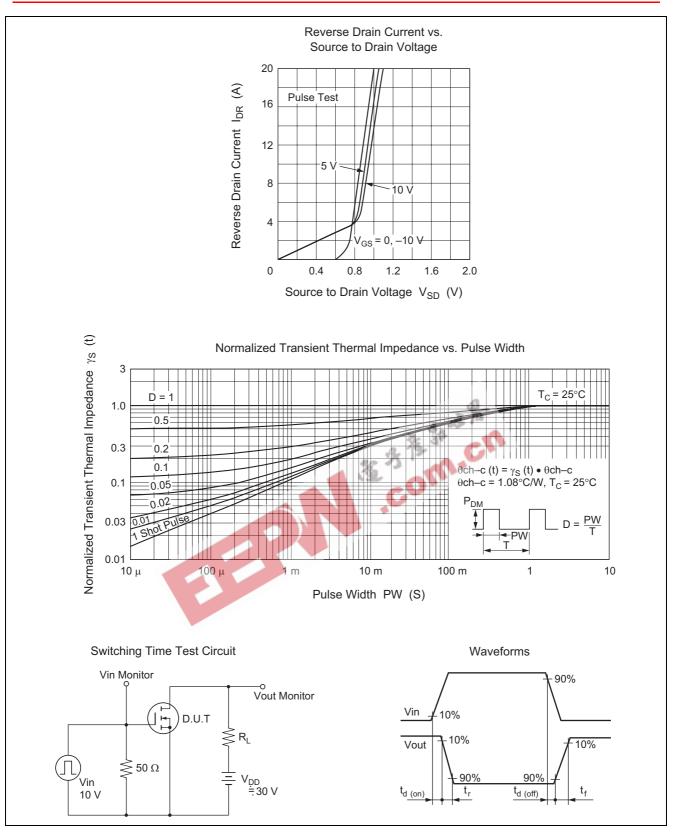
Main Characteristics



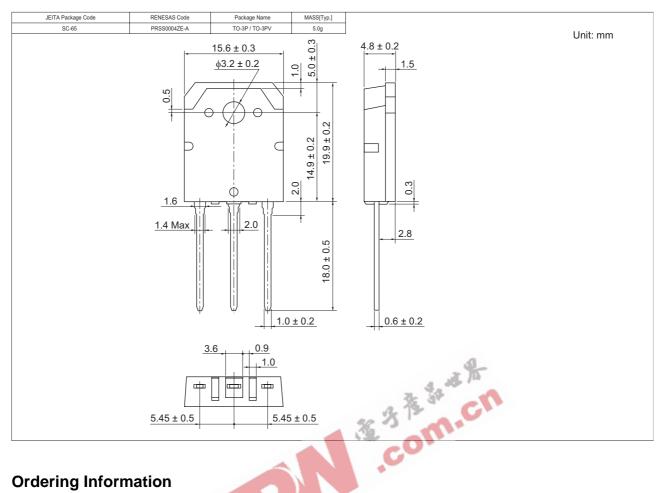








Package Dimensions



Part NameQuantityShipping Container2SK1517-E360 pcsBox (Tube)2SK1518-E360 pcsBox (Tube)

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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