

## 2SK2980

Silicon N Channel MOS FET  
High Speed Power Switching

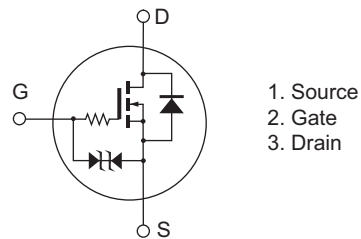
REJ03G1061-0400  
(Previous: ADE-208-571B)  
Rev.4.00  
Sep 07, 2005

### Features

- Low on-resistance  
 $R_{DS(on)} = 0.2 \Omega$  typ. ( $V_{GS} = 4 \text{ V}$ ,  $I_D = 500 \text{ mA}$ )
- 2.5 V gate drive devices.
- Small package (MPAK)

### Outline

RENESAS Package code: PLSP0003ZB-A  
(Package name: MPAK)



Note: Marking is "ZZ-"

## Absolute Maximum Ratings

(Ta = 25°C)

Item	Symbol	Ratings	Unit
Drain to source voltage	$V_{DSS}$	30	V
Gate to source voltage	$V_{GSS}$	+12	V
		-10	V
Drain current	$I_D$	1.0	A
Drain peak current	$I_{D(pulse)}$ <sup>Note1</sup>	4	A
Channel dissipation	$P_{ch}$ <sup>Note2</sup>	0.8	W
Channel temperature	$T_{ch}$	150	°C
Storage temperature	$T_{stg}$	-55 to +150	°C

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

2. Value at when using alumina ceramic board (12.5 x 20 x 0.7 mm)

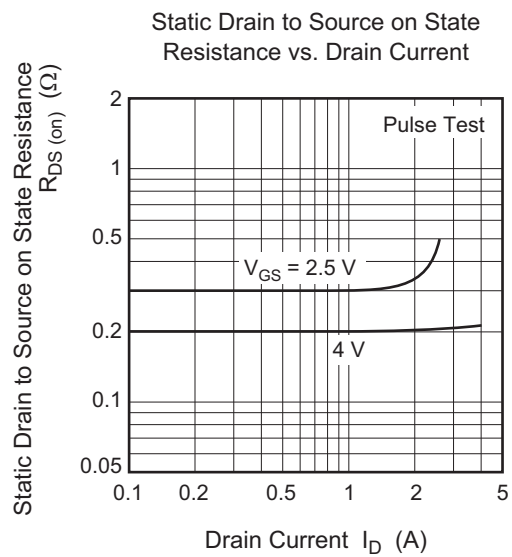
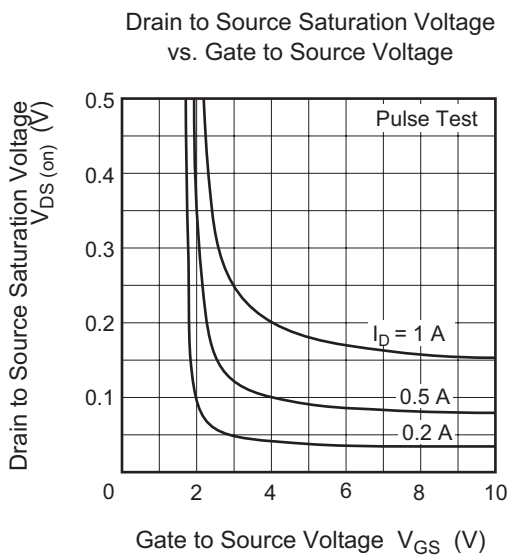
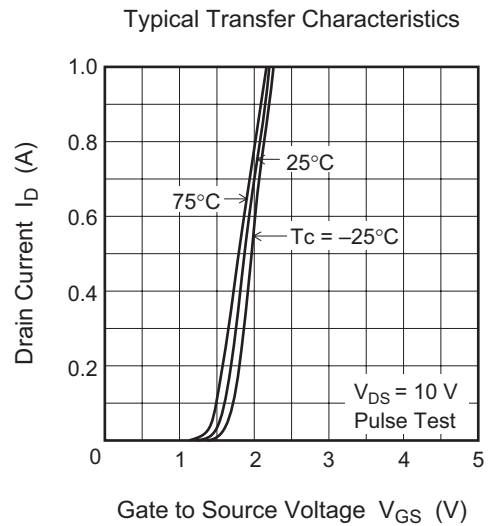
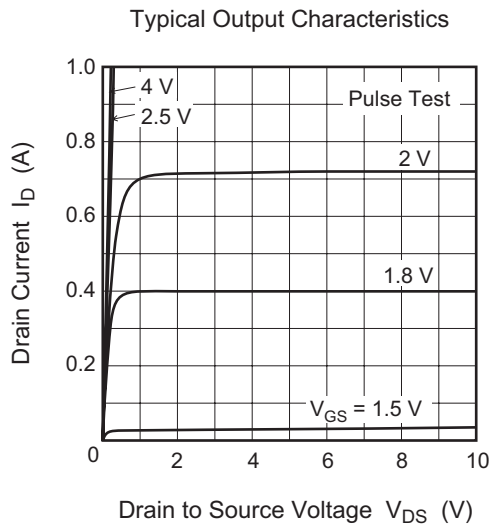
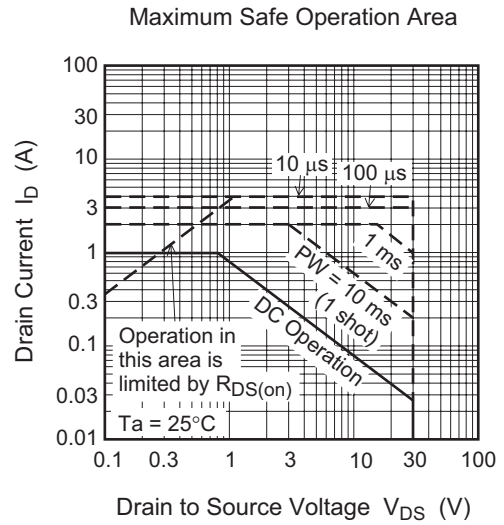
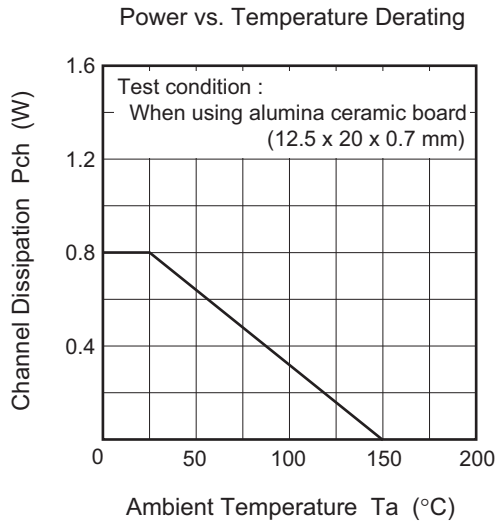
## Electrical Characteristics

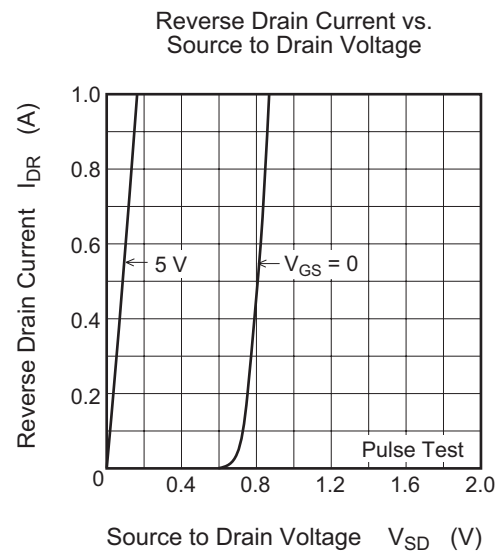
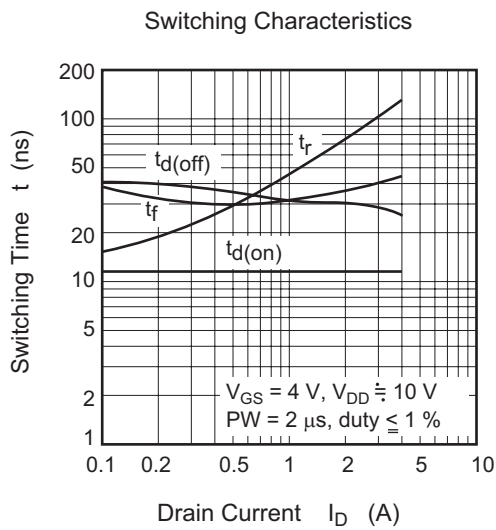
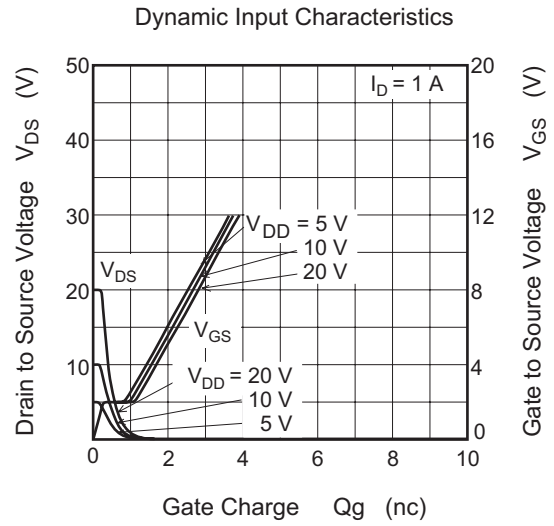
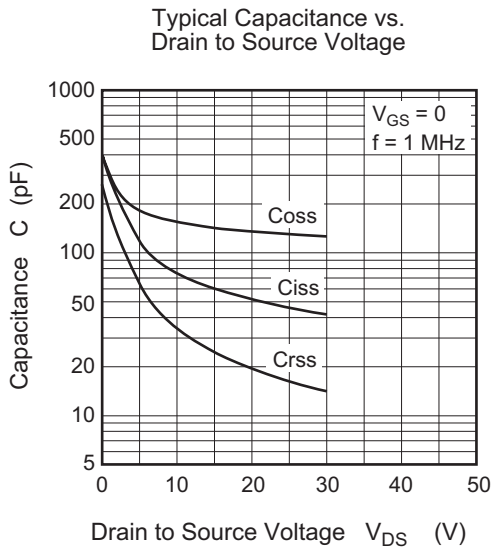
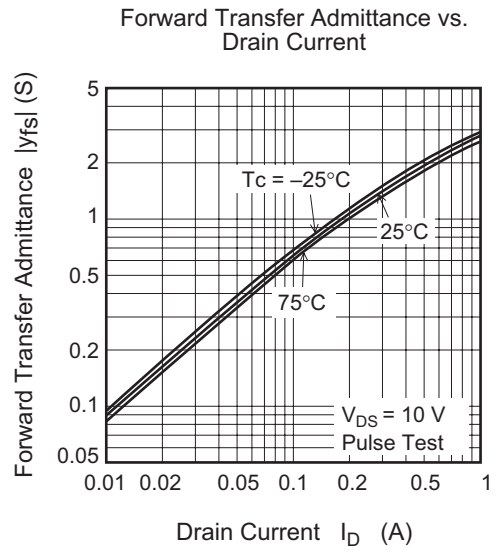
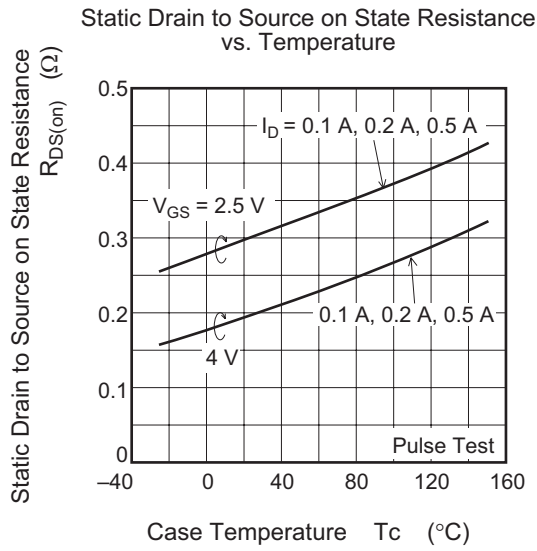
(Ta = 25°C)

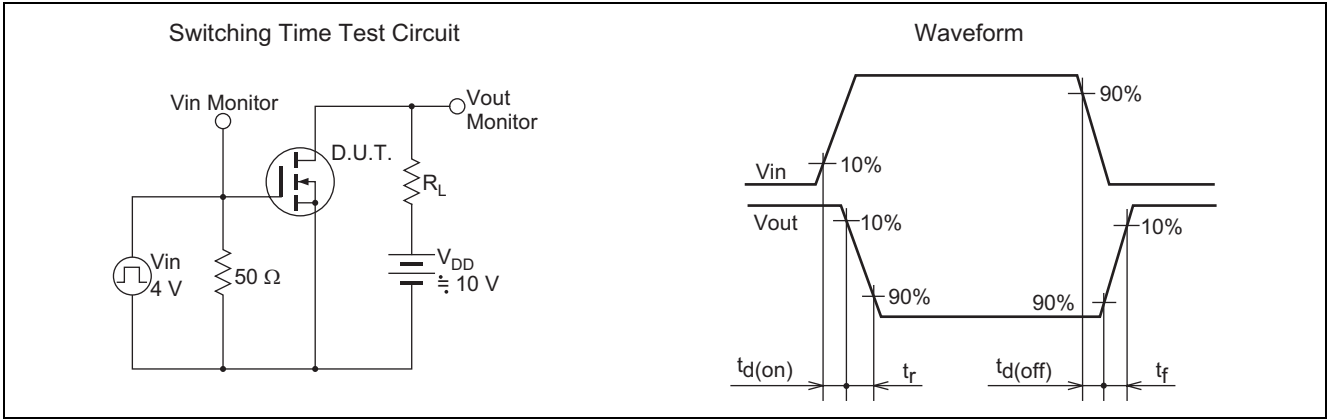
Item	Symbol	Min	Typ	Max	Unit	Test Conditions
Drain to source breakdown voltage	$V_{(BR)DSS}$	30	—	—	V	$I_D = 100\ \mu A$ , $V_{GS} = 0$
Gate to source breakdown voltage	$V_{(BR)GSS}$	+12	—	—	V	$I_G = +100\ \mu A$ , $V_{DS} = 0$
		-10	—	—	V	$I_G = -100\ \mu A$ , $V_{DS} = 0$
Zero gate voltage drain current	$I_{DSS}$	—	—	1.0	$\mu A$	$V_{DS} = 30\ V$ , $V_{GS} = 0$
Gate to source leak current	$I_{GSS}$	—	—	$\pm 5.0$	$\mu A$	$V_{GS} = \pm 8\ V$ , $V_{DS} = 0$
Gate to source cutoff voltage	$V_{GS(off)}$	0.5	—	1.5	V	$I_D = 10\ \mu A$ , $V_{DS} = 5\ V$
Static drain to source on state resistance	$R_{DS(on)}$	—	0.2	0.28	$\Omega$	$I_D = 500\ mA$ , $V_{GS} = 4\ V$ <sup>Note3</sup>
Static drain to source on state resistance	$R_{DS(on)}$	—	0.3	0.5	$\Omega$	$I_D = 500\ mA$ , $V_{GS} = 2.5\ V$ <sup>Note3</sup>
Forward transfer admittance	$ y_{fs} $	1.2	2.0	—	S	$I_D = 500\ mA$ , $V_{DS} = 10\ V$ <sup>Note3</sup>
Input capacitance	$C_{iss}$	—	155	—	pF	$V_{DS} = 10\ V$ , $V_{GS} = 0$ , $f = 1\ MHz$
Output capacitance	$C_{oss}$	—	75	—	pF	
Reverse transfer capacitance	$C_{rss}$	—	35	—	pF	
Turn-on delay time	$t_{d(on)}$	—	12	—	ns	$V_{GS} = 4\ V$ , $I_D = 500\ mA$ , $R_L = 20\ \Omega$
Rise time	$t_r$	—	30	—	ns	
Turn-off delay time	$t_{d(off)}$	—	35	—	ns	
Fall time	$t_f$	—	30	—	ns	

Note: 3. Pulse test

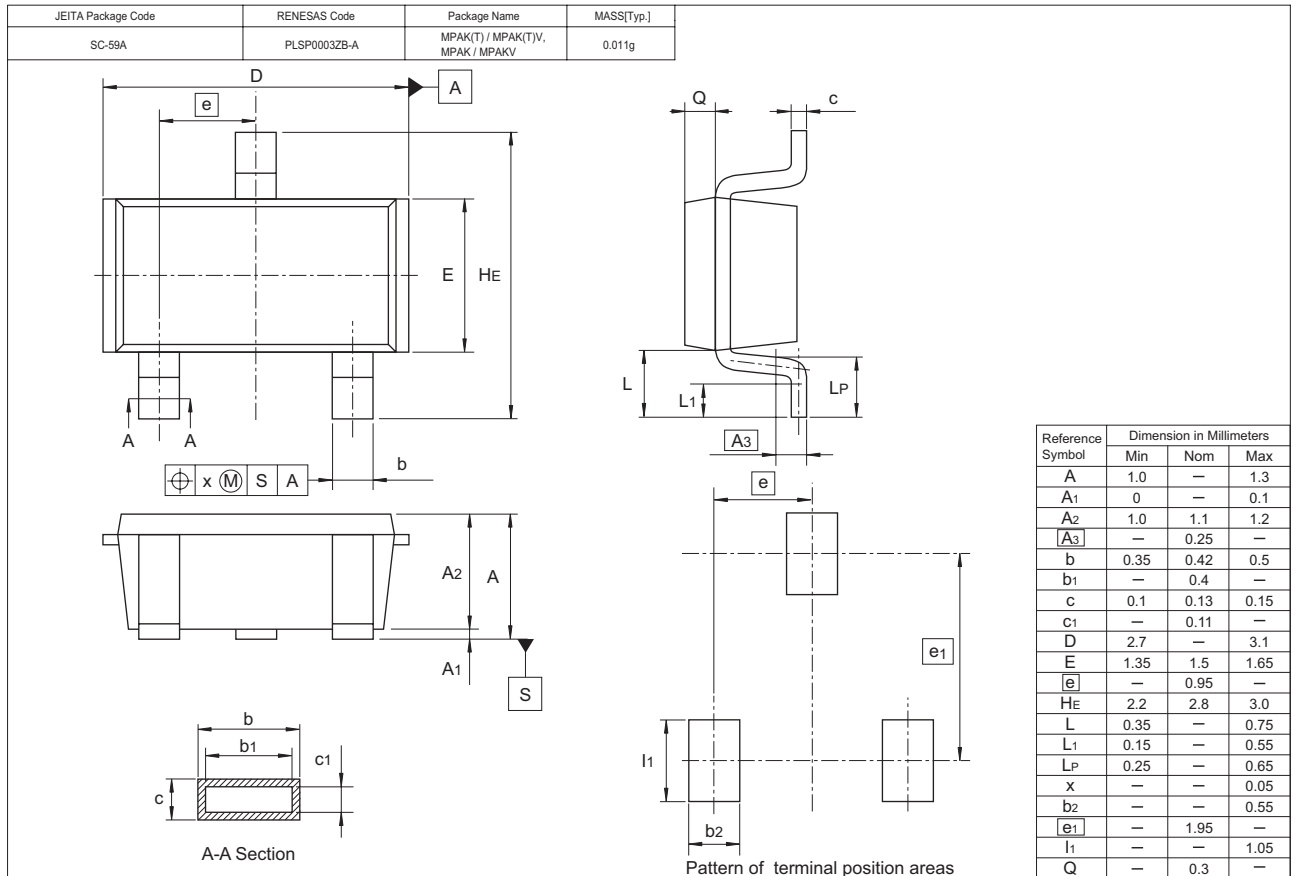
### Main Characteristics







### Package Dimensions



### Ordering Information

Part Name	Quantity	Shipping Container
2SK2980ZZ-TL-E	3000 pcs	Taping
2SK2980ZZ-TR-E	3000 pcs	Taping

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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