

2SJ451

Silicon P Channel MOS FET

REJ03G0864-0400

Rev.4.00

Sep 07, 2007

Description

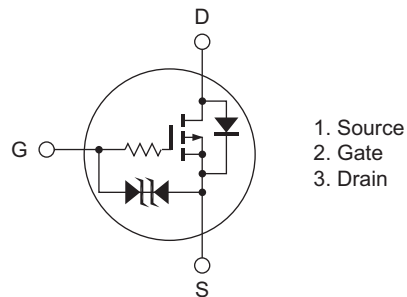
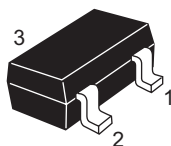
Low frequency power switching

Features

- Low on-resistance.
- Low drive power
- 2.5 V gate drive device.
- Small package (MPAK).

Outline

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



Note: Marking is "ZK-".

Absolute Maximum Ratings

(Ta = 25°C)

Item	Symbol	Value	Unit
Drain to source voltage	V_{DS}	-20	V
Gate to source voltage	V_{GS}	± 20	V
Drain current	I_D	-0.2	A
Drain peak current	$I_{D(pulse)}$ ^{Note 1}	-0.4	A
Channel dissipation	Pch	150	mW
Channel temperature	Tch	150	°C
Storage temperature	Tstg	-55 to +150	°C

Note: 1. PW ≤ 10 μs, duty cycle ≤ 1%

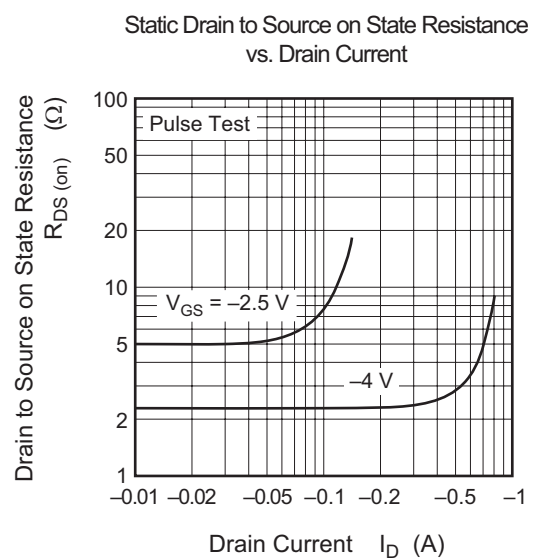
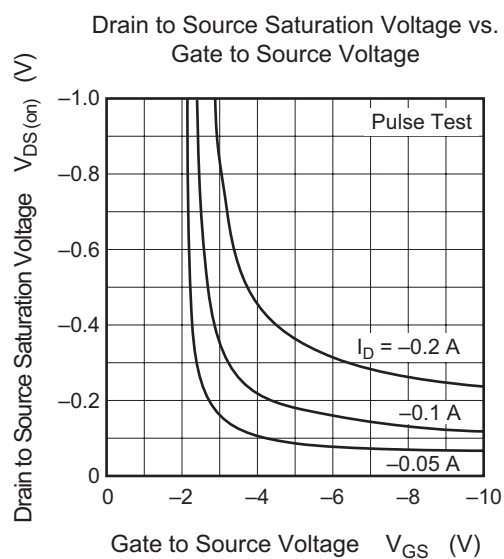
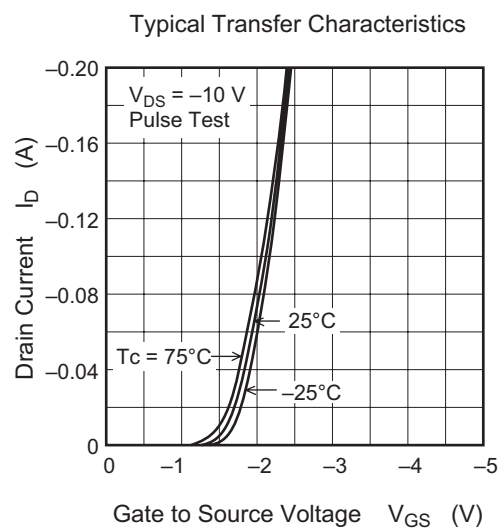
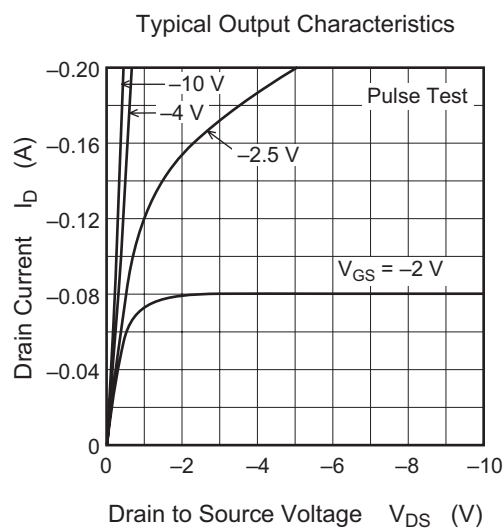
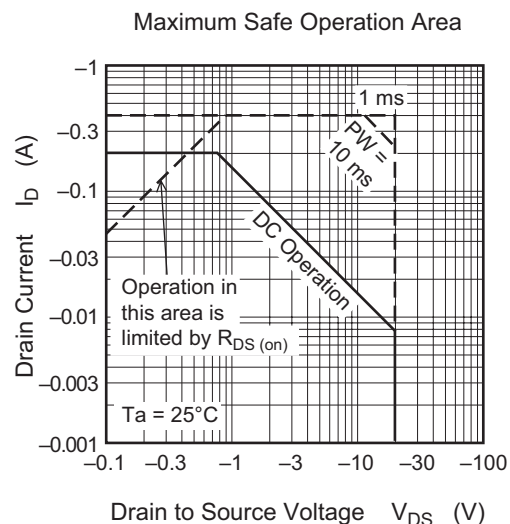
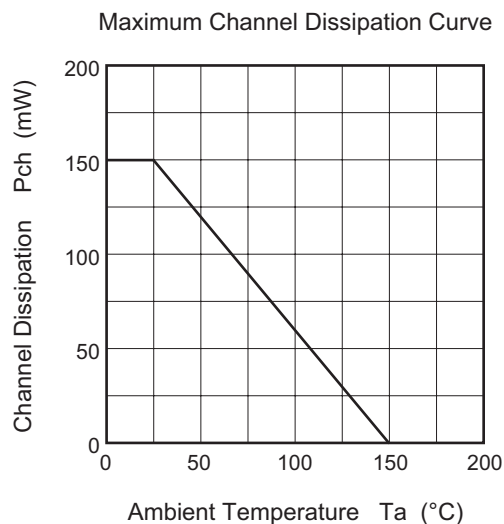
Electrical Characteristics

(Ta = 25°C)

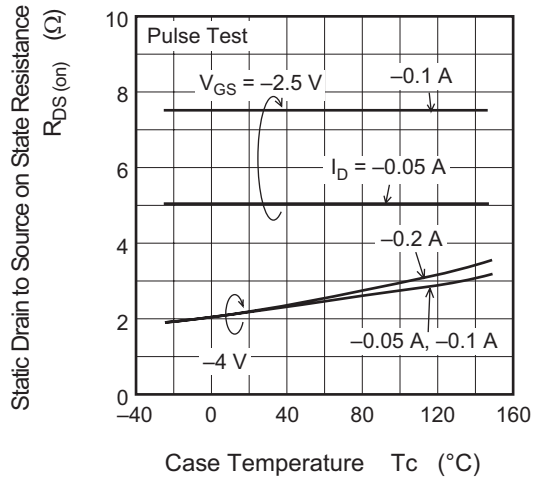
Item	Symbol	Min	Typ	Max	Unit	Test Conditions
Drain to source breakdown voltage	$V_{(BR) DSS}$	-20	—	—	V	$I_D = -100 \mu A, V_{GS} = 0$
Gate to source breakdown voltage	$V_{(BR) GSS}$	± 20	—	—	V	$I_G = \pm 100 \mu A, V_{DS} = 0$
Zero gate voltage drain current	I_{DSS}	—	—	-1.0	μA	$V_{DS} = -16 V, V_{GS} = 0$
Gate to source leak current	I_{GSS}	—	—	± 2.0	μA	$V_{GS} = \pm 16 V, V_{DS} = 0$
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	$R_{DS (on) 1}$	—	2.3	3.5	Ω	$I_D = -100 mA, V_{GS} = -4 V$ ^{Note 2}
	$R_{DS (on) 2}$	—	5.0	9.0	Ω	$I_D = -40 mA, V_{GS} = -2.5 V$ ^{Note 2}
Forward transfer admittance	$ y_{fs} $	0.13	0.23	—	S	$I_D = -100 mA, V_{DS} = -10 V$ ^{Note 2}
Input capacitance	C_{iss}	—	2.4	—	pF	$V_{DS} = -10 V$
Output capacitance	C_{oss}	—	31	—	pF	$V_{GS} = 0$
Reverse transfer capacitance	C_{rss}	—	0.6	—	pF	$f = 1 MHz$
Turn-on delay time	$t_{d (on)}$	—	170	—	ns	$I_D = -0.1 A$
Rise time	t_r	—	680	—	ns	$V_{GS} = -10 V$
Turn-off delay time	$t_{d (off)}$	—	3.0	—	μs	$R_L = 100 \Omega$
Fall time	t_f	—	2.8	—	μs	

Note: 2. Pulse test

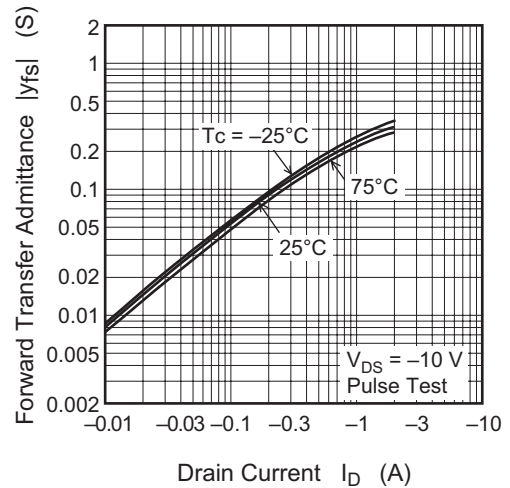
Main Characteristics



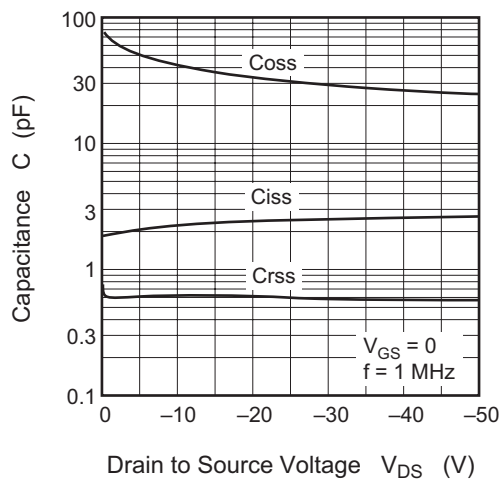
Static Drain to Source on State Resistance
vs. Temperature



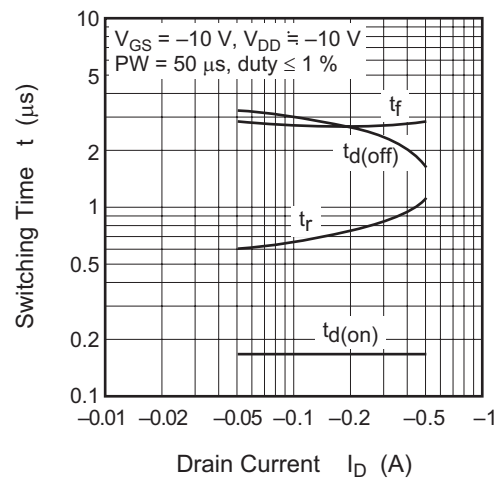
Forward Transfer Admittance vs.
Drain Current



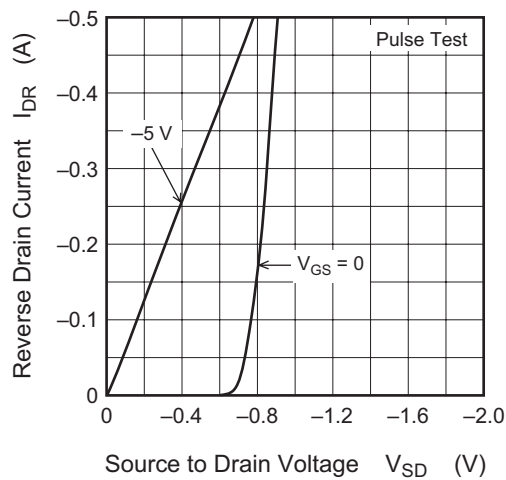
Typical Capacitance vs.
Drain to Source Voltage



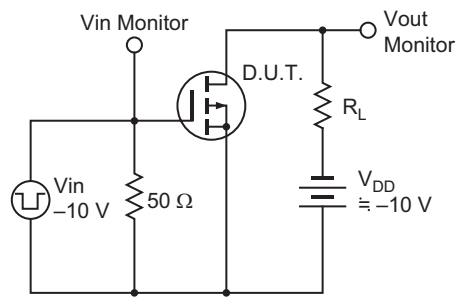
Switching Characteristics



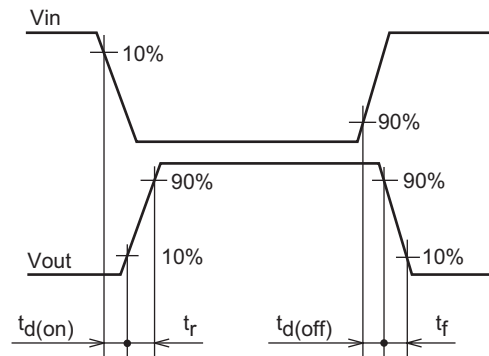
Reverse Drain Current vs.
Source to Drain Voltage



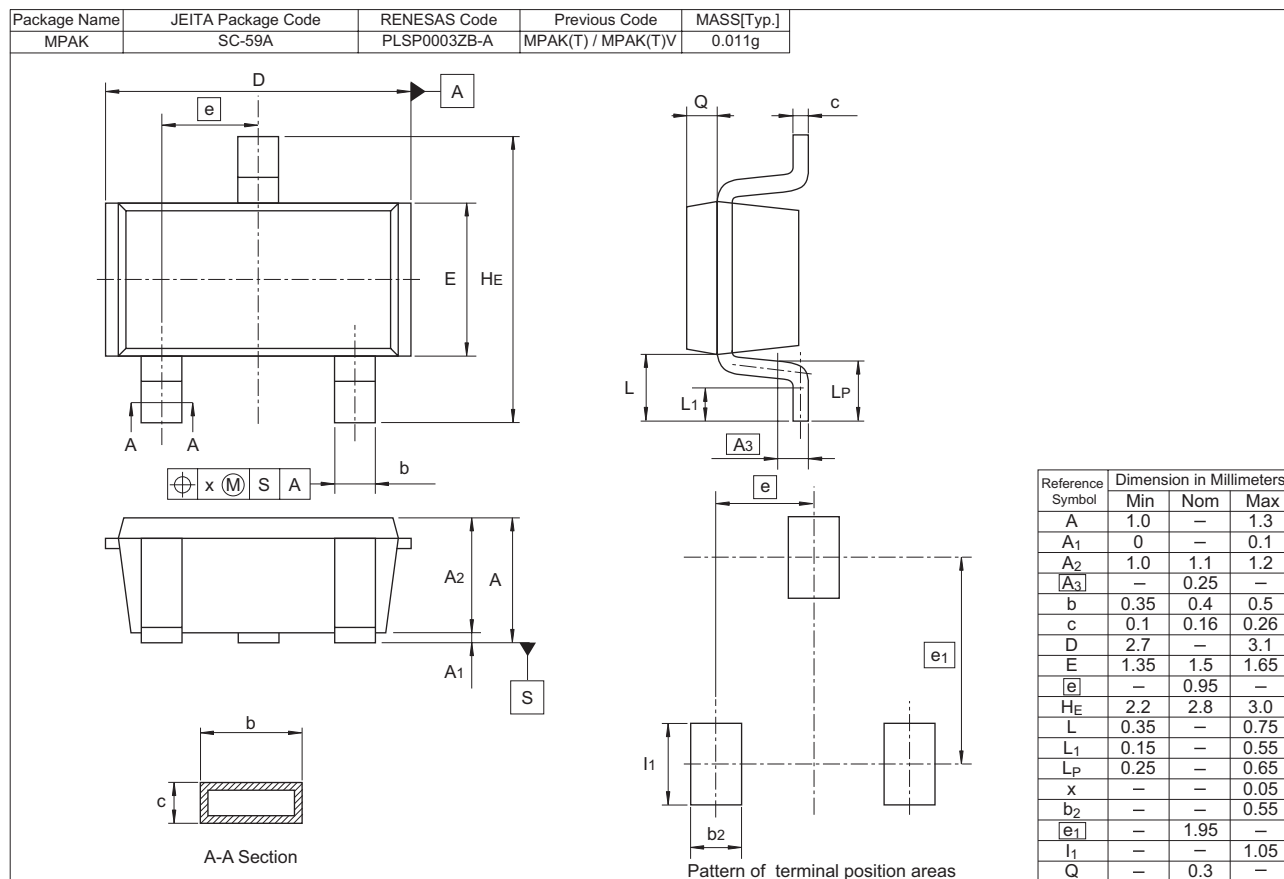
Switching Time Test Circuit



Waveform



Package Dimensions



Ordering Information

Part Name	Quantity	Shipping Container
2SJ451ZK-TL-E	3000 pcs	Taping
2SJ451ZK-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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