

## 2SJ386

### Silicon P Channel MOS FET

REJ03G0861-0200  
(Previous: ADE-208-1195)  
Rev.2.00  
Sep 07, 2005

#### Description

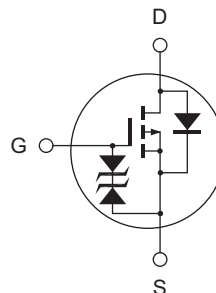
High speed power switching

#### Features

- Low on-resistance
- High speed switching
- Low drive current
- 4 V gate drive device can be driven from 5 V source
- Suitable for Switching regulator, DC-DC converter

#### Outline

RENESAS Package code: PRSS0003DC-A  
(Package name: TO-92 Mod)



1. Source
2. Drain
3. Gate

## Absolute Maximum Ratings

(Ta = 25°C)

Item	Symbol	Value	Unit
Drain to source voltage	$V_{DSS}$	-30	V
Gate to source voltage	$V_{GSS}$	±20	V
Drain current	$I_D$	-3	A
Drain peak current	$I_{D (pulse)}$ <sup>Note 1</sup>	-5	A
Body to drain diode reverse drain current	$I_{DR}$	-3	A
Channel dissipation	Pch	0.9	W
Channel temperature	Tch	150	°C
Storage temperature	Tstg	-55 to +150	°C

Note: 1. PW ≤ 10 μs, duty cycle ≤ 1%

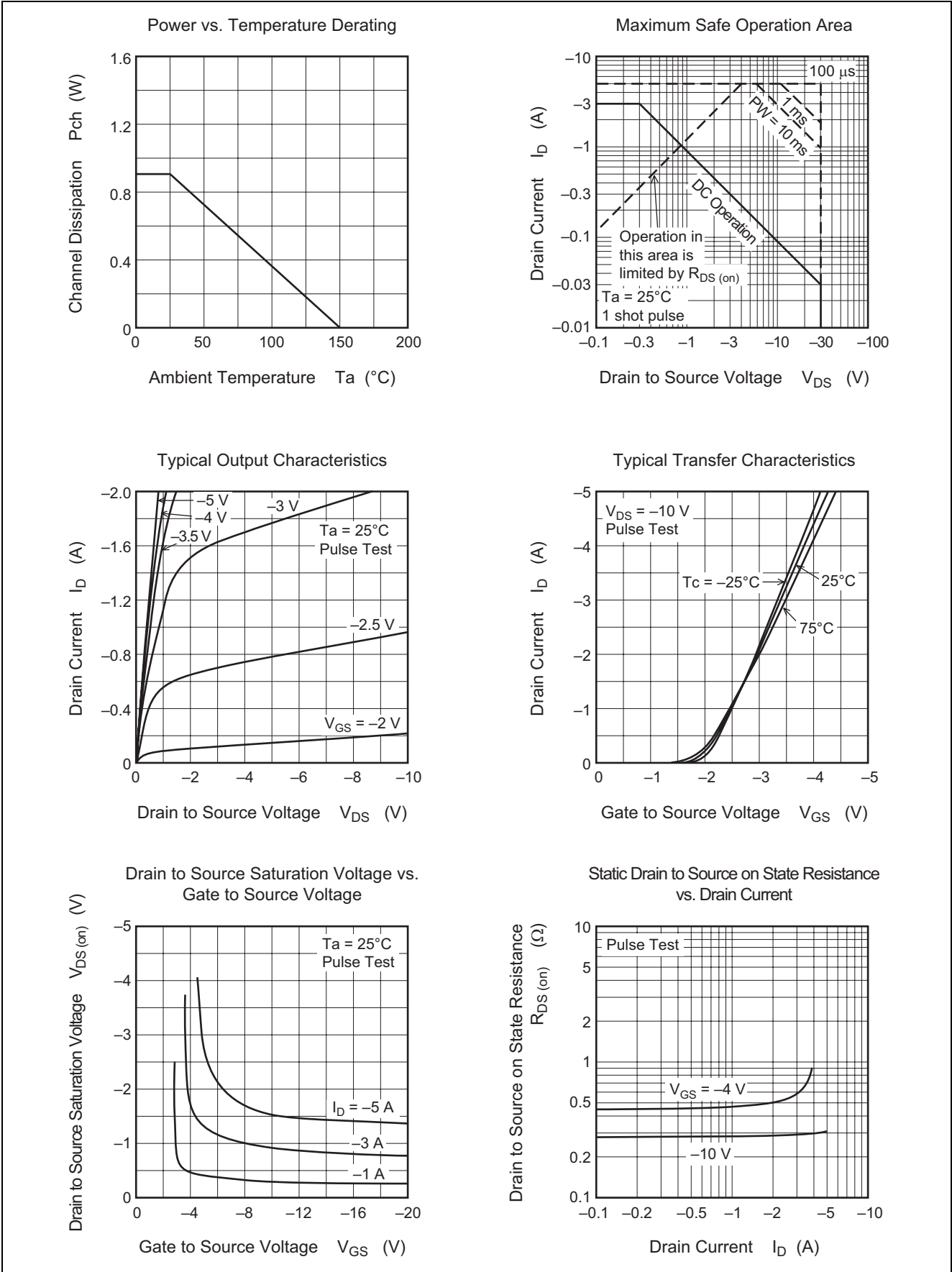
## Electrical Characteristics

(Ta = 25°C)

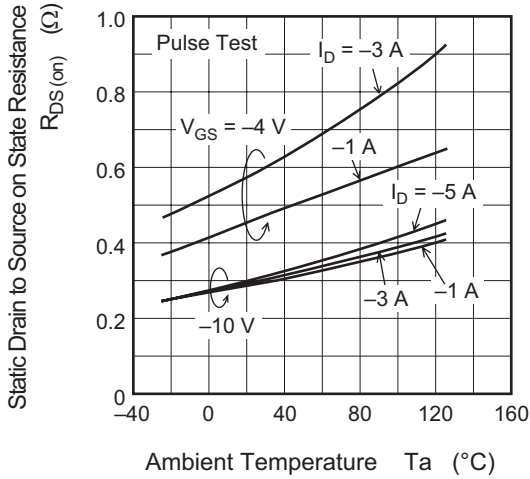
Item	Symbol	Min	Typ	Max	Unit	Test Conditions
Drain to source breakdown voltage	$V_{(BR) DSS}$	-30	—	—	V	$I_D = -10 \text{ mA}$ , $V_{GS} = 0$
Gate to source breakdown voltage	$V_{(BR) GSS}$	±20	—	—	V	$I_G = \pm 100 \mu\text{A}$ , $V_{DS} = 0$
Gate to source leak current	$I_{GSS}$	—	—	±10	μA	$V_{GS} = \pm 16 \text{ V}$ , $V_{DS} = 0$
Zero gate voltage drain current	$I_{DSS}$	—	—	-10	μA	$V_{DS} = -24 \text{ V}$ , $V_{GS} = 0$
Gate to source cutoff voltage	$V_{GS (off)}$	-1.0	—	-2.5	V	$I_D = -1 \text{ mA}$ , $V_{DS} = -10 \text{ V}$
Static drain to source on state resistance	$R_{DS (on)}$	—	0.3	0.4	Ω	$I_D = -2 \text{ A}$ , $V_{GS} = -10 \text{ V}$ <sup>Note 2</sup>
	$R_{DS (on)}$	—	0.55	0.8	Ω	$I_D = -2 \text{ A}$ , $V_{GS} = -4 \text{ V}$ <sup>Note 2</sup>
Forward transfer admittance	$ y_{fs} $	1.0	1.7	—	S	$I_D = -1 \text{ A}$ , $V_{DS} = -10 \text{ V}$ <sup>Note 2</sup>
Input capacitance	$C_{iss}$	—	177	—	pF	$V_{DS} = -10 \text{ V}$
Output capacitance	$C_{oss}$	—	120	—	pF	$V_{GS} = 0$
Reverse transfer capacitance	$C_{rss}$	—	59	—	pF	f = 1 MHz
Turn-on delay time	$t_{d (on)}$	—	8	—	ns	$I_D = -2 \text{ A}$
Rise time	$t_r$	—	28	—	ns	$V_{GS} = -10 \text{ V}$
Turn-off delay time	$t_{d (off)}$	—	45	—	ns	$R_L = 15 \Omega$
Fall time	$t_f$	—	60	—	ns	

Note: 2. Pulse test

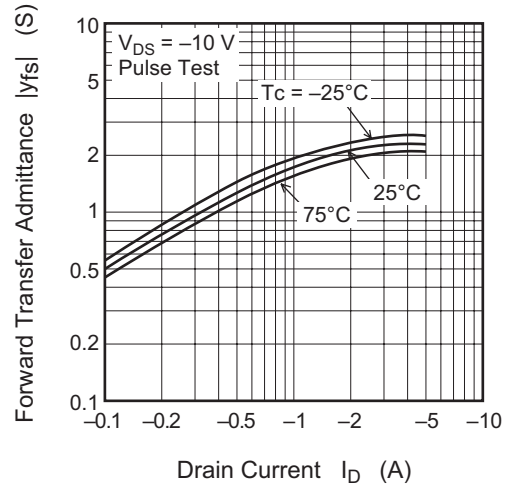
## Main Characteristics



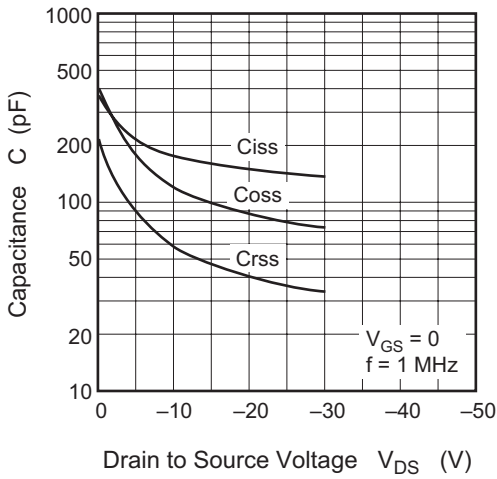
Static Drain to Source on State Resistance vs. Temperature



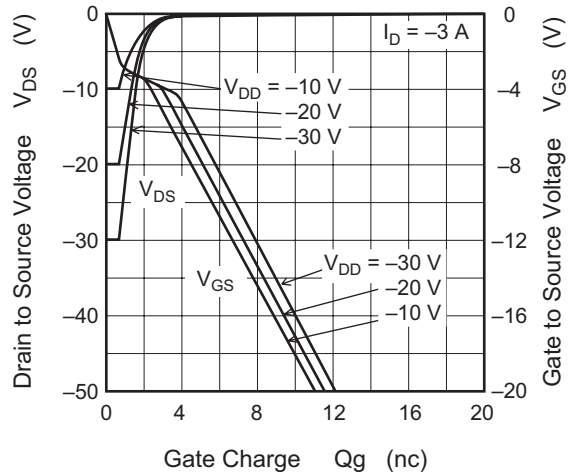
Forward Transfer Admittance vs. Drain Current



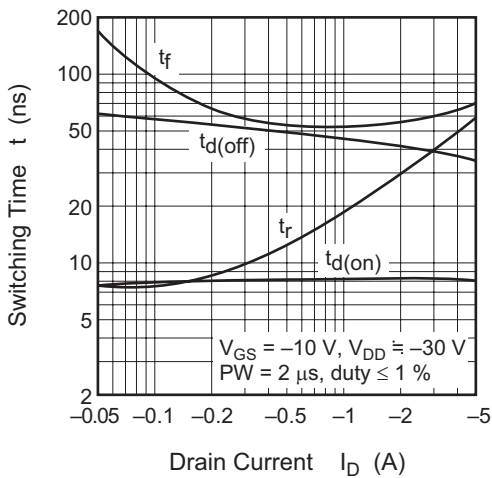
Typical Capacitance vs. Drain to Source Voltage



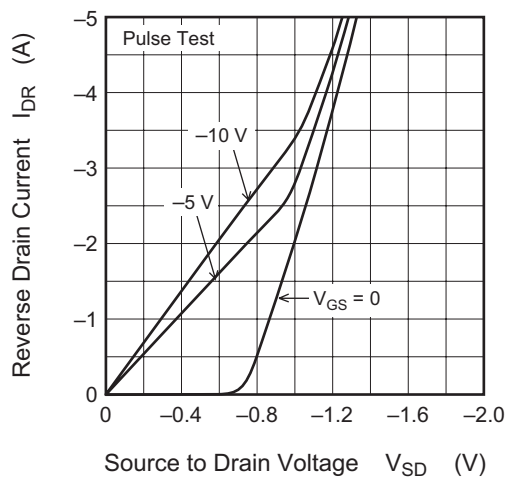
Dynamic Input Characteristics



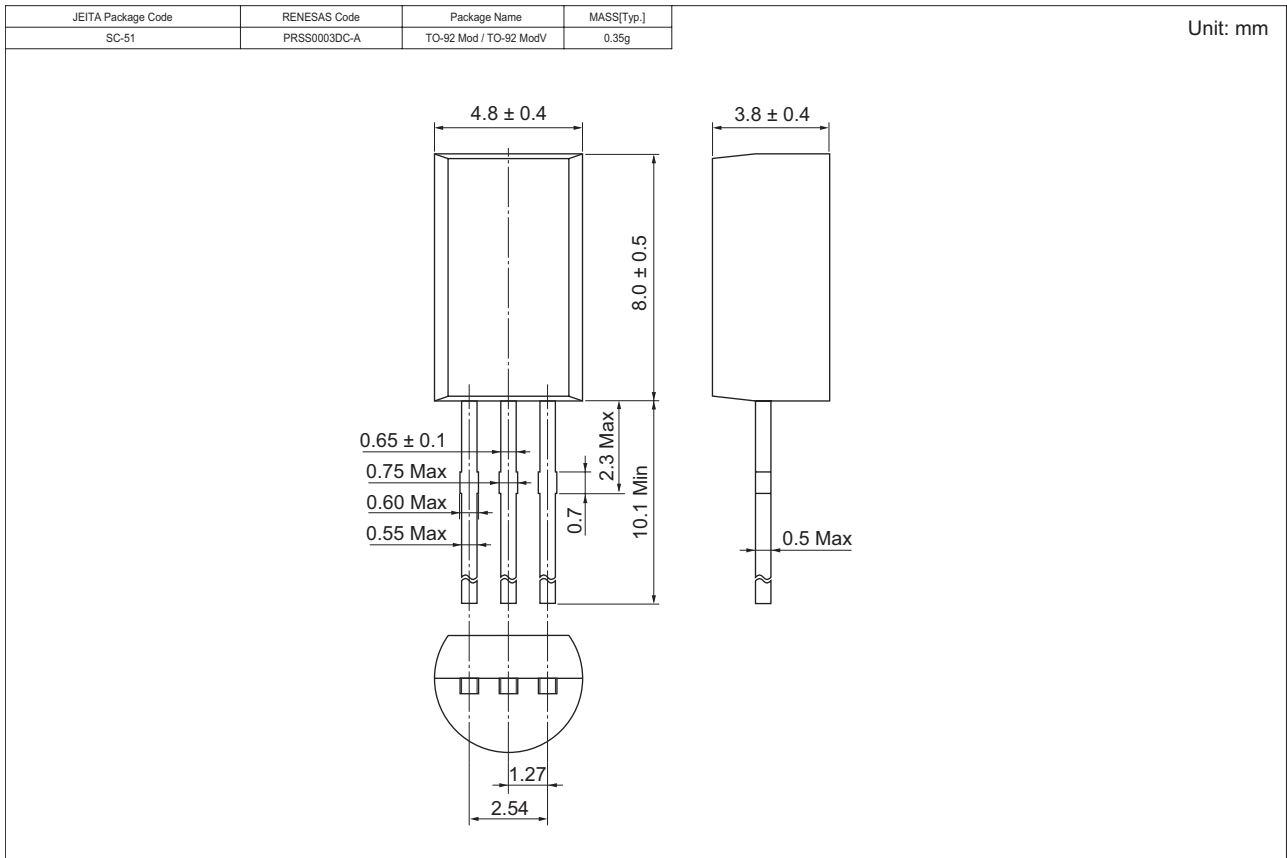
Switching Characteristics



Reverse Drain Current vs. Source to Drain Voltage



## Package Dimensions



## Ordering Information

Part Name	Quantity	Shipping Container
2SJ386TZ-E	2500 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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