To our customers,

Old Company Name in Catalogs and Other Documents

On April 1st, 2010, NEC Electronics Corporation merged with Renesas Technology Corporation, and Renesas Electronics Corporation took over all the business of both companies. Therefore, although the old company name remains in this document, it is a valid Renesas Electronics document. We appreciate your understanding.

Renesas Electronics website: http://www.renesas.com

April 1st, 2010
Renesas Electronics Corporation

Issued by: Renesas Electronics Corporation (http://www.renesas.com)

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2SJ399

Silicon P-Channel MOS FET

REJ03G0193-0200Z
(Previous ADE-208-267 (Z))
Rev.2.00
Apr.05.2004

Application

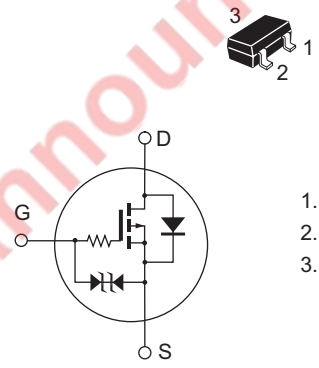
Low frequency power switching

Features

- Low on-resistance
- Small package
- Low drive current
- 4 V gate drive device can be driven from 5 V source
- Suitable for low signal load switch.

Outline

MPAK



1. Source
2. Gate
3. Drain

Note: Marking is “ZF–”

Absolute Maximum Ratings

(Ta = 25°C)

Item	Symbol	Ratings	Unit
Drain to source voltage	V_{DSS}	–30	V
Gate to source voltage	V_{GSS}	±20	V
Drain current	I_D	–0.2	A
Drain peak current	$I_{D(pulse)}$ Note	–0.4	A
Body to drain diode reverse drain current	I_{DR}	–0.2	A
Channel dissipation	Pch	150	mW
Channel temperature	Tch	150	°C
Storage temperature	Tstg	–55 to +150	°C

Note: PW ≤ 100 µs, duty cycle ≤ 10%

Electrical Characteristics

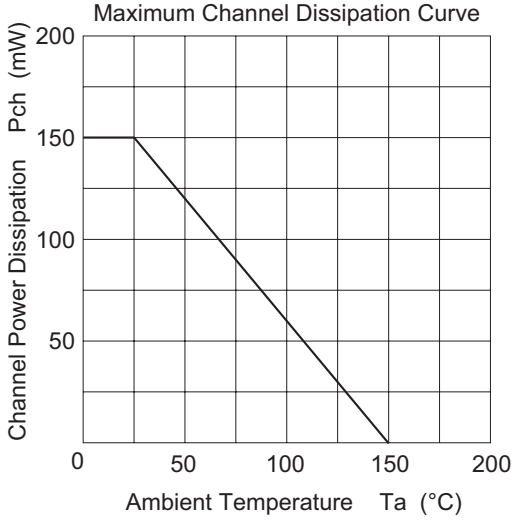
(Ta = 25°C)

Item	Symbol	Min	Typ	Max	Unit	Test Conditions
Drain to source breakdown voltage	$V_{(BR)DSS}$	–30	—	—	V	I_D = –100 µA, V_{GS} = 0
Gate to source breakdown voltage	$V_{(BR)GSS}$	±20	—	—	V	I_G = ±100 µA, V_{DS} = 0
Gate to source leak current	I_{GSS}	—	—	±2	µA	V_{GS} = ±16 V, V_{DS} = 0
Zero gate voltage drain current	I_{DSS}	—	—	–1	µA	V_{DS} = –30 V, V_{GS} = 0
Gate to source cutoff voltage	$V_{GS(off)}$	–1.0	—	–2.0	V	I_D = –10 µA, V_{DS} = –5 V
Static drain to source on state resistance	$R_{DS(on)}$	—	2.7	7.5	Ω	I_D = –20 mA, V_{GS} = –4 V
		—	2.0	7.0	Ω	I_D = –10 mA, V_{GS} = –10 V
Input capacitance	Ciss	—	1.1	—	pF	V_{DS} = –10 V
Output capacitance	Coss	—	22.3	—	pF	V_{GS} = 0
Reverse transfer capacitance	Crss	—	0.17	—	pF	f = 1 MHz
Turn-on delay time	$t_{d(on)}$	—	530	—	ns	I_D = –0.1 A
Rise time	t_r	—	2170	—	ns	V_{GS} = –10 V
Turn-off delay time	$t_{d(off)}$	—	7640	—	ns	R_L = 100 Ω
Fall time	t_f	—	7690	—	ns	PW = 5 µs

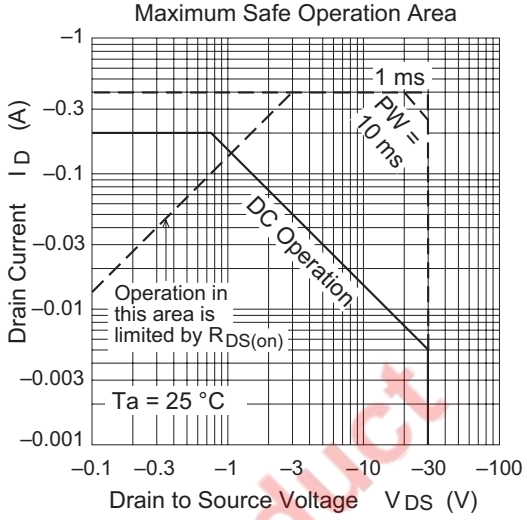
Note: Pulse Test

Main Characteristics

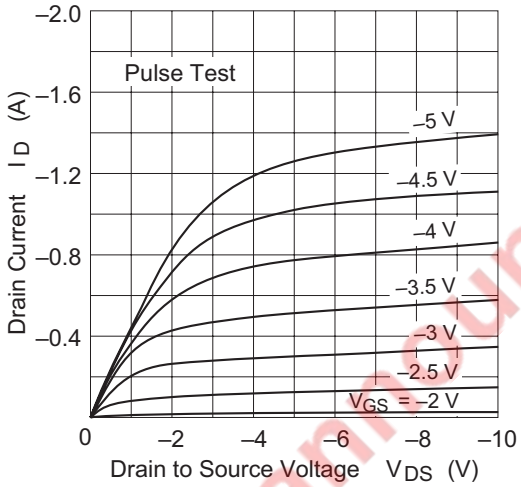
Maximum Channel Dissipation Curve



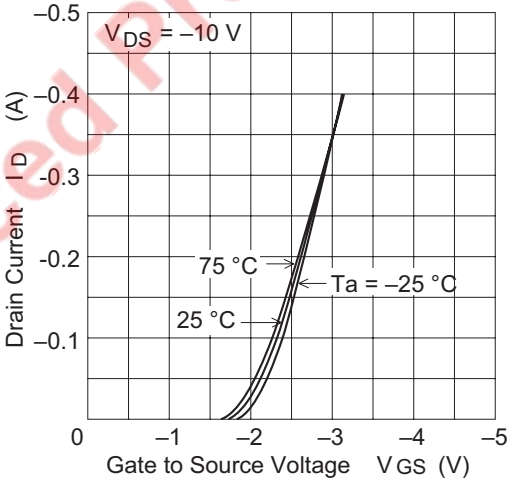
Maximum Safe Operation Area



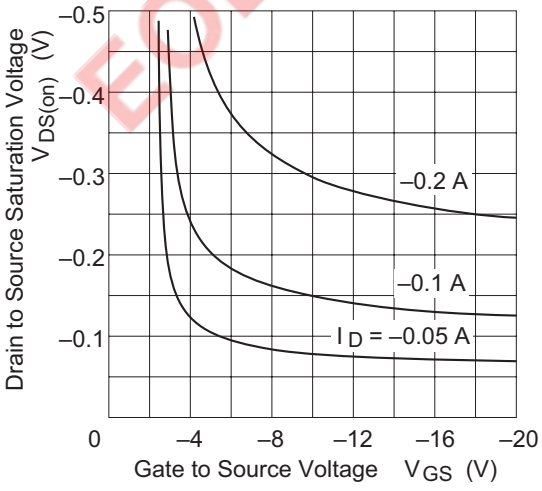
Typical Output Characteristics



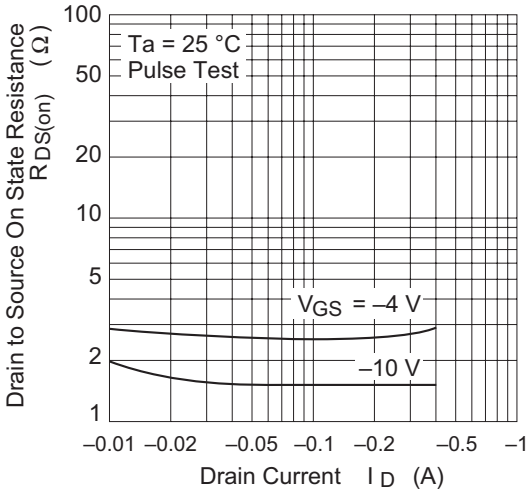
Typical Transfer Characteristics



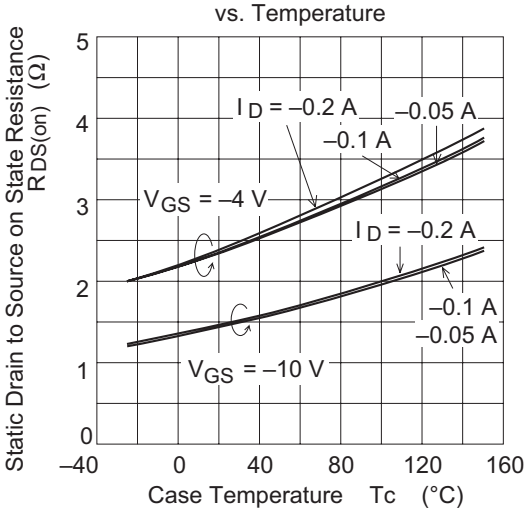
Drain to Source Saturation Voltage vs. Gate to Source Voltage



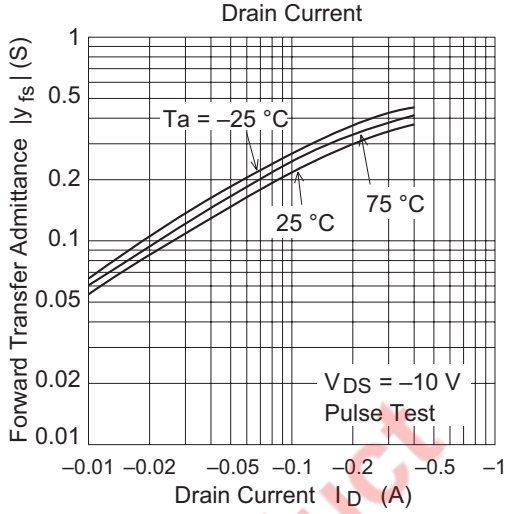
Static Drain to Source on State Resistance vs. Drain Current



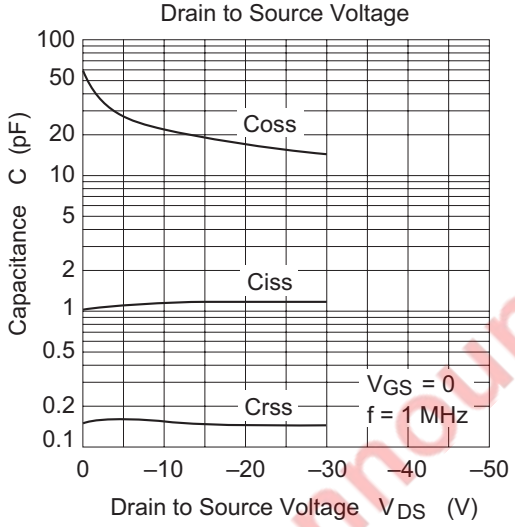
Static Drain to Source on State Resistance vs. Temperature



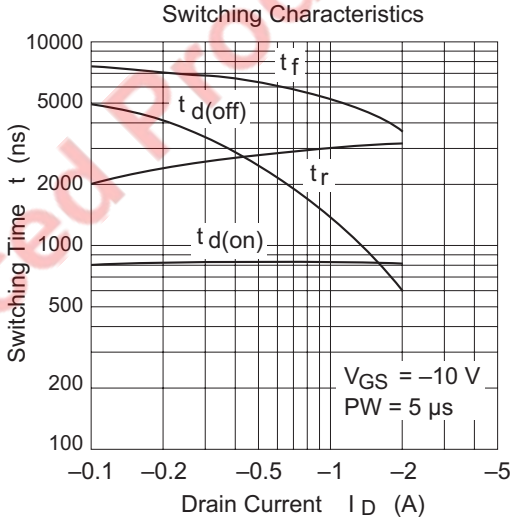
Forward Transfer Admittance vs. Drain Current



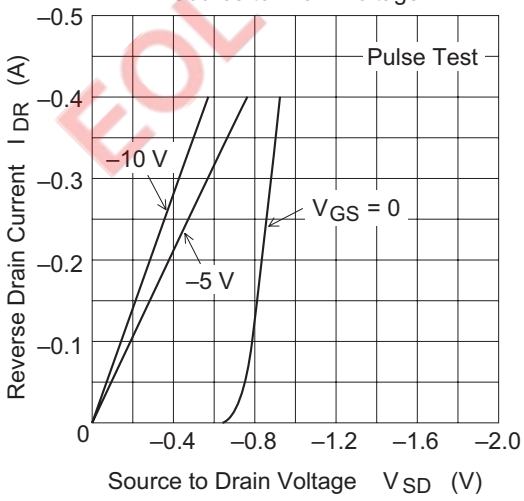
Typical Capacitance vs. Drain to Source Voltage



Switching Characteristics

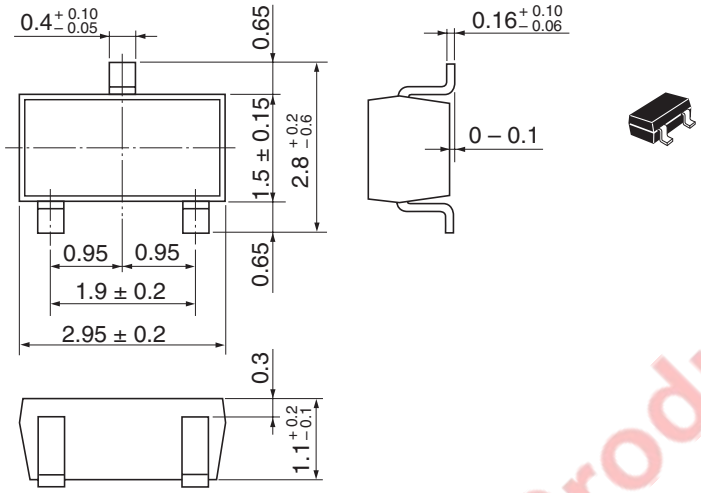


Reverse Drain Current vs. Source to Drain Voltage



Package Dimensions

As of January, 2003
Unit: mm



Package Code	MPAK(T)
JEDEC	—
JEITA	Conforms
Mass (reference value)	0.011 g

Ordering Information

Part Name	Quantity	Shipping Container
2SJ399	3000 pcs	φ178 mm Taping Reel (TL)

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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Colophon .1.0