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)

Send any inquiries to http://www.renesas.com/inquiry.

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(Note 2) "Renesas Electronics product(s)" means any product developed or manufactured by or for Renesas Electronics.

To all our customers

Regarding the change of names mentioned in the document, such as Mitsubishi Electric and Mitsubishi XX, to Renesas Technology Corp.

The semiconductor operations of Hitachi and Mitsubishi Electric were transferred to Renesas Technology Corporation on April 1st 2003. These operations include microcomputer, logic, analog and discrete devices, and memory chips other than DRAMs (flash memory, SRAMs etc.) Accordingly, although Mitsubishi Electric, Mitsubishi Electric Corporation, Mitsubishi Semiconductors, and other Mitsubishi brand names are mentioned in the document, these names have in fact all been changed to Renesas Technology Corp. Thank you for your understanding. Except for our corporate trademark, logo and corporate statement, no changes whatsoever have been made to the contents of the document, and these changes do not constitute any alteration to the contents of the document itself.

Note : Mitsubishi Electric will continue the business operations of high frequency & optical devices and power devices.

Renesas Technology Corp.
Customer Support Dept.
April 1, 2003

MITSUBISHI Nch POWER MOSFET

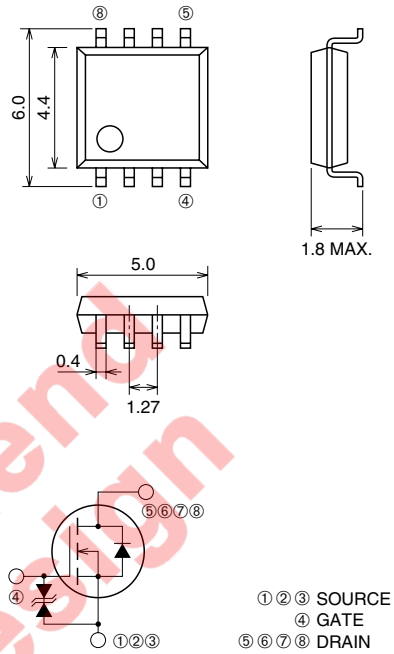
FY10AAJ-03F

HIGH-SPEED SWITCHING USE

FY10AAJ-03F

- 4V DRIVE
- VDSS 30V
- rDS (ON) (MAX) 18mΩ
- ID 10A

OUTLINE DRAWING Dimensions in mm



SOP-8

APPLICATION

Motor control, Lamp control, Solenoid control
DC-DC converter, etc.

MAXIMUM RATINGS (Tc = 25°C)

Symbol	Parameter	Conditions	Ratings	Unit
VDSS	Drain-source voltage	VGS = 0V	30	V
VGSS	Gate-source voltage	VDS = 0V	±20	V
ID	Drain current		10	A
IDM	Drain current (Pulsed)		70	A
IDA	Avalanche drain current (Pulsed)	L = 10µH	10	A
IS	Source current		1.7	A
ISM	Source current (Pulsed)		6.8	A
PD	Maximum power dissipation		1.9	W
Tch	Channel temperature		–55~+150	°C
Tstg	Storage temperature		–55~+150	°C
—	Weight	Typical value	0.07	g

RENESAS
Renesas Technology Corp.

ELECTRICAL CHARACTERISTICS (Tch = 25°C)

Symbol	Parameter	Test conditions	Limits			Unit
			Min.	Typ.	Max.	
$V_{(BR)DSS}$	Drain-source breakdown voltage	I_D = 1mA, V_{GS} = 0V	30	—	—	V
$V_{(BR)GSS}$	Gate-source breakdown voltage	I_G = ±100µA, V_{GS} = 0V	±20	—	—	V
I_{DSS}	Drain-source leakage current	V_{DS} = 30V, V_{GS} = 0V	—	—	0.1	mA
I_{GSS}	Gate-source leakage current	V_{GS} = ±20V, V_{DS} = 0V	—	—	±10	µA
$V_{GS\ (th)}$	Gate-source threshold voltage	I_D = 1mA, V_{DS} = 10V	1.0	1.5	2.0	V
$r_{DS\ (ON)}$	Drain-source on-state resistance	I_D = 10A, V_{GS} = 10V	—	14	18	mΩ
$r_{DS\ (ON)}$	Drain-source on-state resistance	I_D = 5A, V_{GS} = 4.5V	—	19	26	mΩ
$r_{DS\ (ON)}$	Drain-source on-state resistance	I_D = 5A, V_{GS} = 4V	—	20	28	mΩ
$V_{DS\ (ON)}$	Drain-source on-state voltage	I_D = 10A, V_{GS} = 10V	—	0.140	0.180	V
$\lvert y_{fs} \rvert$	Forward transfer admittance	I_D = 10A, V_{DS} = 10V	—	20	—	S
C_{iss}	Input capacitance	V_{DS} = 10V, V_{GS} = 0V, f = 1MHz	—	1200	—	pF
C_{oss}	Output capacitance		—	350	—	pF
C_{rss}	Reverse transfer capacitance		—	160	—	pF
$t_{d\ (on)}$	Turn-on delay time	V_{DD} = 15V, I_D = 5A, V_{GS} = 10V, R_G = 5Ω	—	15	—	ns
t_r	Rise time		—	18	—	ns
$t_{d\ (off)}$	Turn-off delay time		—	40	—	ns
t_f	Fall time		—	10	—	ns
Q_g	Total gate charge	V_{DD} = 15V, V_{GS} = 10V, I_D = 10A	—	24	—	nC
Q_{gs}	Gate-source charge		—	2.8	—	nC
Q_{gd}	Gate-drain charge		—	6.8	—	nC
V_{SD}	Source-drain voltage	I_S = 1.7A, V_{GS} = 0V	—	0.75	1.10	V
$R_{th\ (ch-a)}$	Thermal resistance	Channel to air	—	—	65.8	°C/W
t_{rr}	Reverse recovery time	I_S = 1.7A, di_S/dt = –50A/µs	—	50	—	ns