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.

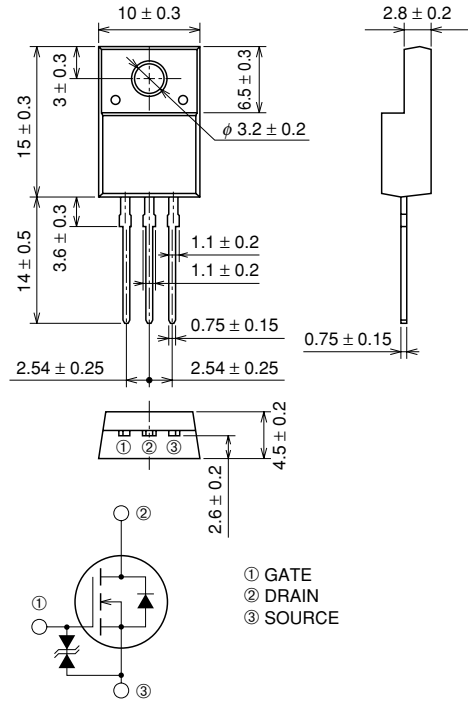Renesas Technology Corp.
Customer Support Dept.
April 1, 2003

RENESAS
Renesas Technology Corp.

FL14KM-12A

- 10V DRIVE
- V$_{DSS}$ 600V
- r$_{DS (ON)}$ (MAX) 0.75Ω
- I$_D$ 14A

OUTLINE DRAWING Dimensions in mm

① GATE
② DRAIN
③ SOURCE

TO-220FN

APPLICATION

SMPS, Inverter type fluorescent light sets, etc.

MAXIMUM RATINGS (Tc = 25°C)

Symbol	Parameter	Conditions	Ratings	Unit
V$_{DSS}$	Drain-source voltage	V$_{GS}$ = 0V	600	V
V$_{GSS}$	Gate-source voltage	V$_{DS}$ = 0V	±30	V
I$_D$	Drain current		14	A
I$_{DM}$	Drain current (Pulsed)		42	A
I$_{DA}$	Avalanche current (Pulsed)	L = 200μH	14	A
P$_D$	Maximum power dissipation		40	W
T$_{ch}$	Channel temperature		−55 ~ +150	°C
T$_{stg}$	Storage temperature		−55 ~ +150	°C
V$_{iso}$	Isolation voltage	AC for 1minute, Terminal to case	2000	V
—	Weight	Typical value	2.0	g

Sep. 2001

ELECTRICAL CHARACTERISTICS (Tch = 25°C)

Symbol	Parameter	Test conditions	Min.	Typ.	Max.	Unit
V (BR) DSS	Drain-source breakdown voltage	I_D = 1mA, V_{GS} = 0V	600	—	—	V
V (BR) GSS	Gate-source breakdown voltage	I_G = ±100μA, V_{DS} = 0V	±30	—	—	V
IGSS	Gate-source leakage current	V_{GS} = ±25V, V_{DS} = 0V	—	—	±10	μA
IDSS	Drain-source leakage current	V_{DS} = 600V, V_{GS} = 0V	—	—	1	mA
VGS (th)	Gate-source threshold voltage	I_D = 1mA, V_{DS} = 10V	2.0	3.0	4.0	V
rDS (ON)	Drain-source on-state resistance	I_D = 7A, V_{GS} = 10V	—	0.58	0.75	Ω
VDS (ON)	Drain-source on-state voltage	I_D = 7A, V_{GS} = 10V	—	4.06	5.25	V
|yfs|	Forward transfer admittance	I_D = 7A, V_{DS} = 10V	—	11	—	S
Ciss	Input capacitance		—	1600	—	pF
Coss	Output capacitance	V_{DS} = 25V, V_{GS} = 0V, f = 1MHz	—	210	—	pF
Crss	Reverse transfer capacitance		—	80	—	pF
td (on)	Turn-on delay time		—	30	—	ns
tr	Rise time	V_{DD} = 200V, I_D = 7A, V_{GS} = 10V, R_{GEN} = R_{GS} = 50Ω	—	60	—	ns
td (off)	Turn-off delay time		—	290	—	ns
tf	Fall time		—	120	—	ns
VSD	Source-drain voltage	I_S = 7A, V_{GS} = 0V	—	1.5	2.0	V
Rth (ch-c)	Thermal resistance	Channel to case	—	—	3.13	°C/W