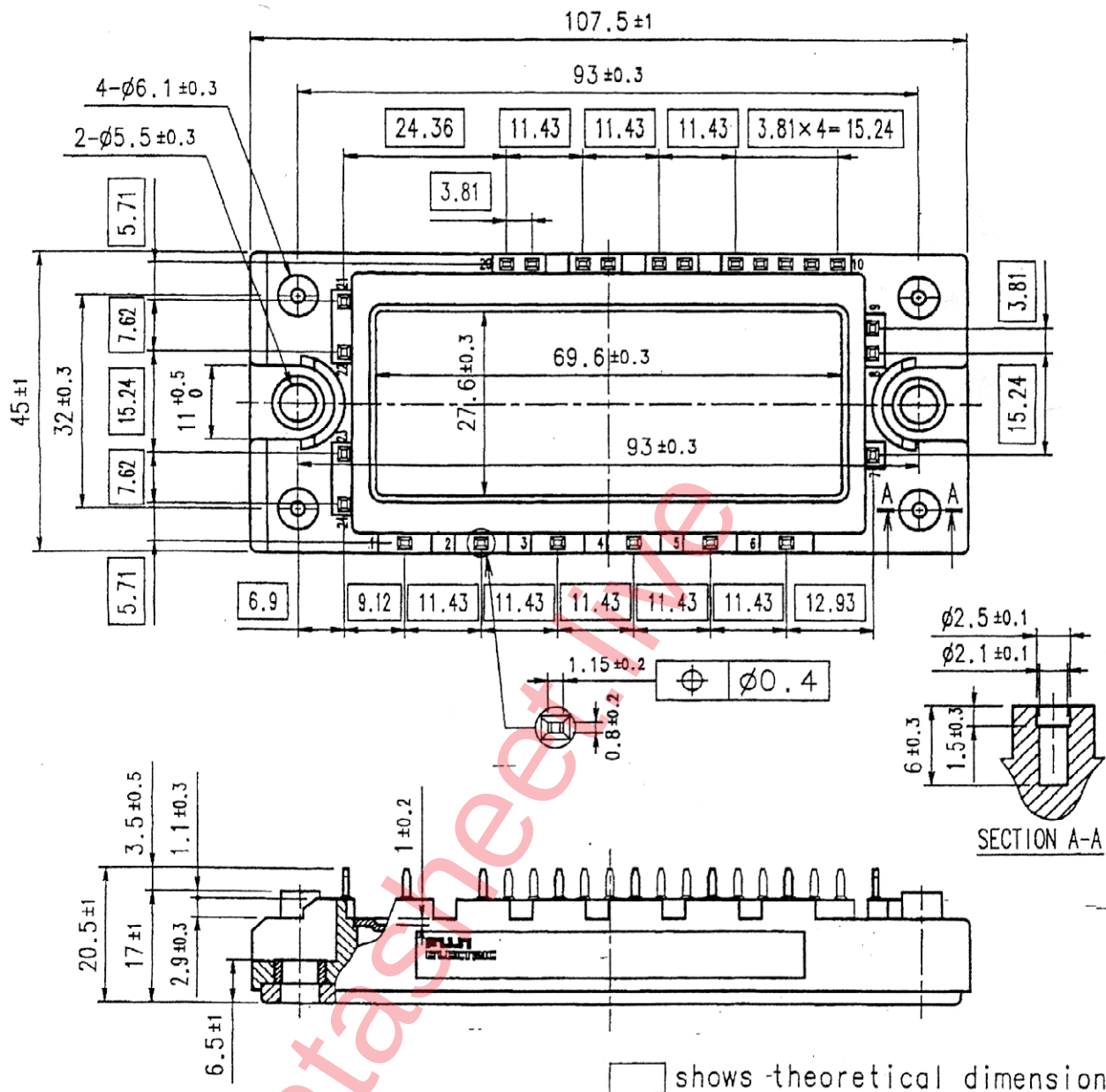
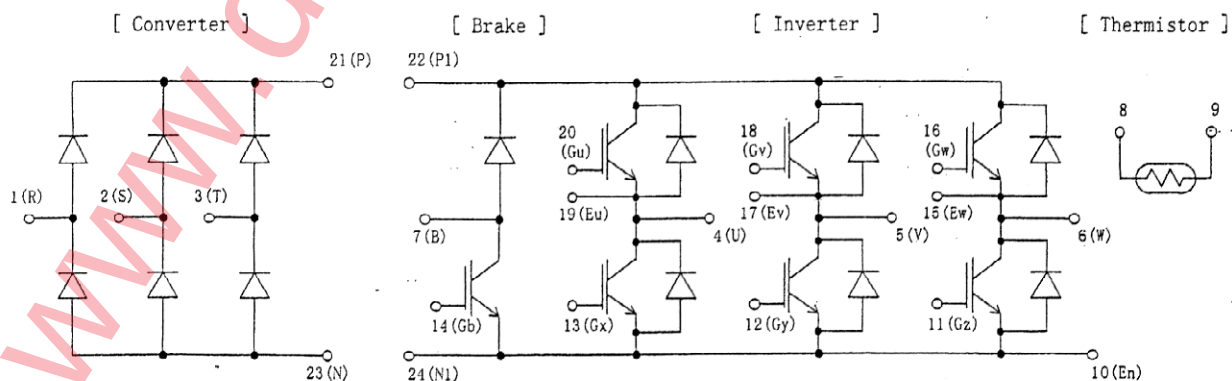


Target Specification of 7MBR10KA060

1. Outline Drawing (Unit : mm)



2. Equivalent circuit



DATE	NAME	APPROVED
Mar-4-99	T. Sator	
CHECKED		
REVISIONS		

Fuji Electric Co., Ltd.

DWG. No.

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3. Absolute Maximum Ratings (at Tc= 25°C unless otherwise specified)

Items		Symbols	Conditions	Maximum Ratings	Units
Inverter	Collector-Emitter voltage	VCES		600	V
	Gate-Emitter voltage	VGES		±20	V
	Collector current	Ic	Continuous	10	A
		Icp	1ms	20	A
		-Ic		10	A
	Collector Power Dissipation	Pc	1 device	40	W
Brake	Collector-Emitter voltage	VCES		600	V
	Gate-Emitter voltage	VGES		±20	V
	Collector current	Ic	Continuous	10	A
		Icp	1ms	20	A
	Collector Power Dissipation	Pc	1 device	40	W
	Repetitive peak reverse Voltage(Diode)	VRRM		600	V
Converter	Repetitive peak reverse Voltage	VRRM		800	V
	Average Output Current	Io	50Hz/60Hz sine wave	10	A
	Surge Current (Non-Repetitive)	IFSM	Tj=150°C, 10ms	70	A
	I ² t (Non-Repetitive)	I ² t	half sine wave	25	A ² s
Junction temperature		Tj		150	°C
Storage temperature		Tstg		-40~ +125	°C
Isolation voltage	between terminal and copper base ^{(*)1}	Viso	AC : 1min.	2500	V
	between thermistor and others ^{(*)2}			2500	V
Mounting Screw Torque ^{(*)3}				3.5	N · m

(*)1 All terminals should be connected together when isolation test will be done.

(*)2 Terminal 8 and 9 should be connected together. Terminal 1 to 7 and 10 to 24 should be connected together and shorted to copper base.

(*)3 Recommendable Value : 2.5~3.5 N · m (M5)

Note :

- This specification is only for technical considerations, and not for contract.
- This specification is subject to be changed without notices.

4. Electrical characteristics (at Tj= 25°C unless otherwise specified)

Items		Symbols	Conditions		Characteristics			Units
					min.	typ.	Max.	
Inverter	Zero gate voltage Collector current	ICES	VGE = 0 V, VCE = 600 V				1.0	mA
	Gate-Emitter leakage current	IGES	VCE = 0 V, VGE = ±20 V				200	nA
	Gate-Emitter threshold voltage	VGE(th)	VCE = 20 V, Ic = 10 mA		6.0		9.0	V
	Collector-Emitter saturation voltage	VCE(sat)	VGE = 15 V,	chip		2.3		V
			Ic = 10 A	terminal		2.5	3.0	
	Input capacitance	Cies	VGE = 0 V, VCE = 10 V f = 1 MHz			660		pF
	Turn-on time	ton	Vcc= 300 V			0.7	1.2	μs
		tr	Ic = 10 A			0.2	0.6	
		tr(i)	VGE = ±15 V					
	Turn-off time	toff	RG = 220 Ω			0.6	1.0	
		tf				0.2	0.35	
Forward on voltage	VF	IF = 10 A	chip		1.8		V	
			terminal		2.0	2.6		
Reverse recovery time	trr	IF = 10 A				300	ns	
Brake	Zero gate voltage Collector current	ICES	VGE = 0 V, VCE = 600 V				1.0	mA
	Gate-Emitter leakage current	IGES	VCE = 0 V, VGE = ±20 V				200	nA
	Collector-Emitter saturation voltage	VCE(sat)	VGE = 15 V,	chip		2.3		V
			Ic = 10 A	terminal		2.5	3.0	
	Turn-on time	ton	Vcc= 300 V			0.7	1.2	μs
		tr	Ic = 10 A			0.2	0.6	
	Turn-off time	toff	VGE = ±15 V			0.6	1.0	
		tf	RG = 220 Ω			0.2	0.35	
Reverse current	IRRM	VR = 600 V				1.0	mA	
Converter	Forward on voltage	VFM	IF = 10 A	chip		1.1	V	
				terminal		1.2		1.5
	Reverse current	IRRM	VR = 800 V				1.0	mA
Thermistor	Resistance	R	T = 25°C			5000	Ω	
			T =100°C		465	495		520
	B value	B	T = 25/50°C		3305	3375	3450	K

5. Thermal resistance characteristics

Items	Symbols	Conditions	Characteristics			Units
			min.	typ.	Max.	
Thermal resistance (1 device)	Rth(j-c)	Inverter IGBT			3.13	°C/W
		Inverter FWD			5.10	
		Brake IGBT			3.13	
		Converter Diode			2.00	
Contact Thermal resistance	Rth(c-f)	with Thermal Compound (※)		0.05		°C/W

※ This is the value which is defined mounting on the additional cooling fin with thermal compound.

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