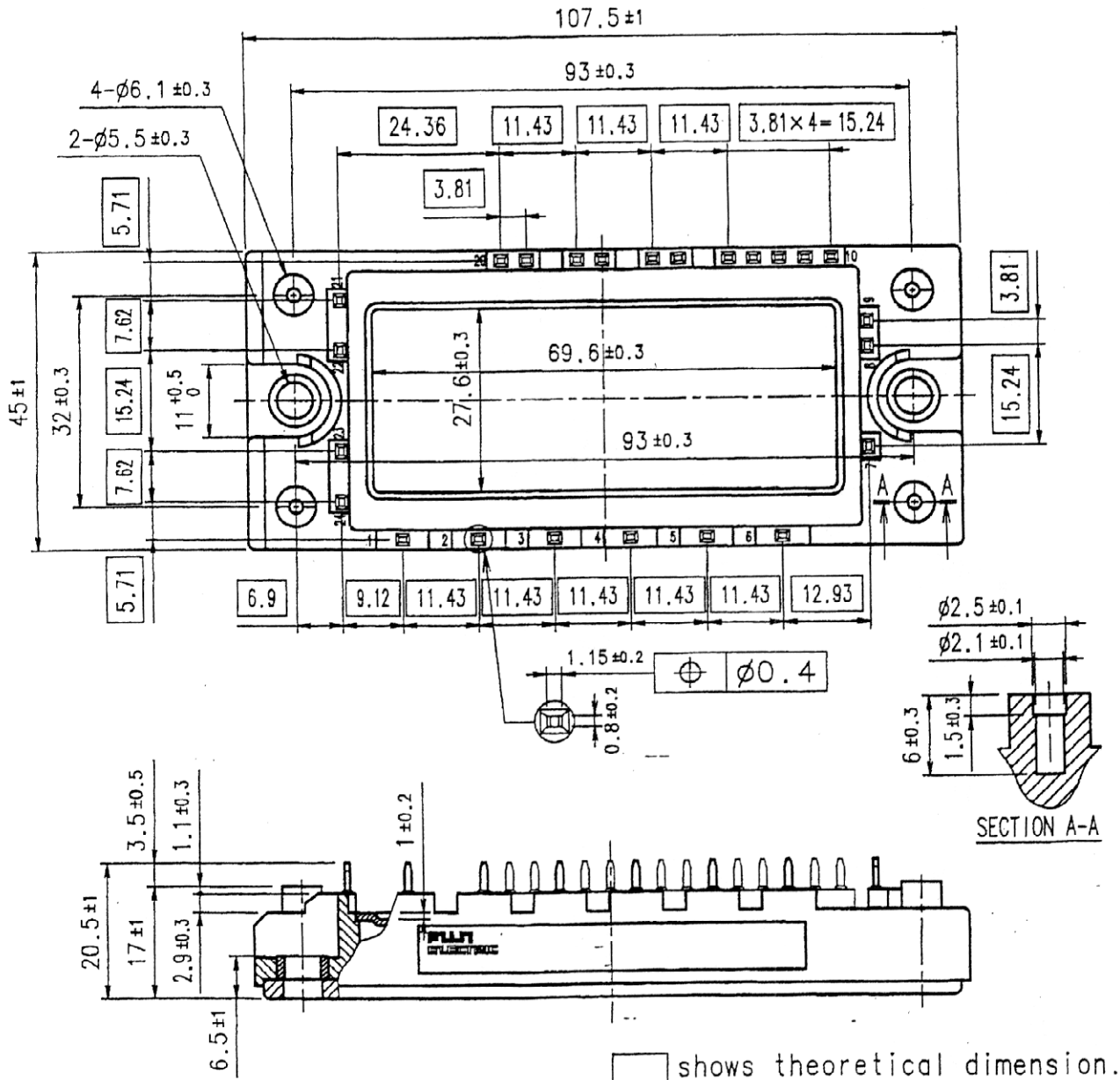
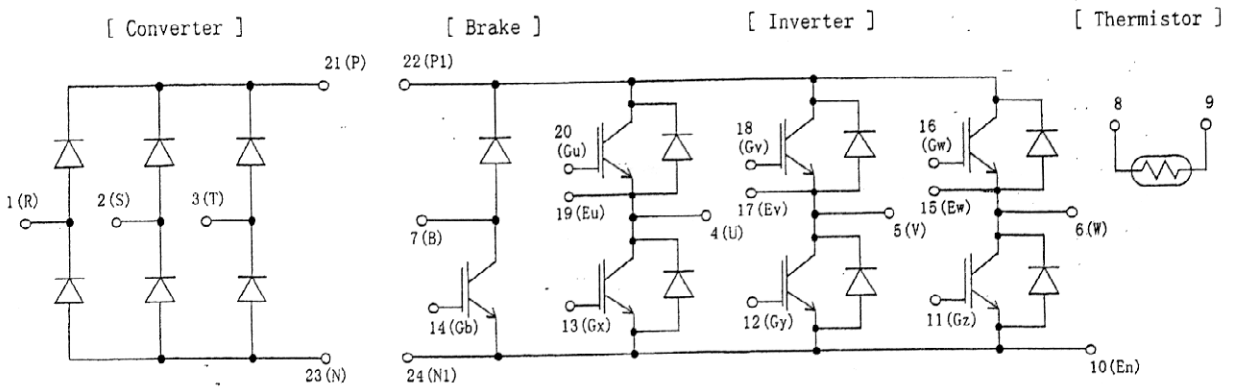


Target Specification of 7 MBR 1 5 K A 0 6 0

1. Outline Drawing (Unit : mm)



2. Equivalent circuit



DATE	NAME	APPROVED
Mar. - 4 - '99	T. Sato	
CHECKED		
REVISIONS		

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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	15	A
		Icp	lms	30	A
		-Ic		15	A
Collector Power Dissipation	Pc	1 device	60	W	
Brake	Collector-Emitter voltage	VCES		600	V
	Gate-Emitter voltage	VGES		±20	V
	Collector current	Ic	Continuous	15	A
		Icp	lms	30	A
	Collector Power Dissipation	Pc	1 device	60	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	15	A
	Surge Current (Non-Repetitive)	IFSM	Tj=150°C, 10ms	105	A
	I ² t (Non-Repetitive)	I ² t	half sine wave	55	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 = 15 mA		6.0	9.0	V
	Collector-Emitter saturation voltage	VCE(sat)	VGE = 15 V, chip Ic = 15 A terminal	2.3 2.5	3.0	V	
	Input capacitance	Cies	VGE = 0 V, VCE = 10 V f = 1 MHz		1000		pF
	Turn-on time	ton	Vcc= 300 V		0.7	1.2	μs
		tr	Ic = 15 A		0.2	0.6	
		tr(j)	VGE = ±15 V				
	Turn-off time	toff	RG = 150 Ω		0.6	1.0	μs
		tf			0.2	0.35	
Forward on voltage	VF	IF = 15 A	chip	1.8		V	
			terminal	2.0	2.6		
Reverse recovery time	trr	IF = 15 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 Ic = 15 A terminal	2.3 2.5	3.0	V	
	Turn-on time	ton	Vcc= 300 V		0.7	1.2	μs
		tr	Ic = 15 A		0.2	0.6	
	Turn-off time	toff	VGE = ±15 V		0.6	1.0	
		tf	RG = 150 Ω		0.2	0.35	
Reverse current	IRRM	VR = 600 V			1.0	mA	
Converter	Forward on voltage	VFM	IF = 15 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
B value	B	T = 25/50°C		3305	3375	3450	K

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5. Thermal resistance characteristics

Items	Symbols	Conditions	Characteristics			Units
			min.	typ.	Max.	
Thermal resistance (1 device)	Rth(j-c)	Inverter IGBT			2.08	°C/W
		Inverter FWD			5.10	
		Brake IGBT			2.08	
		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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