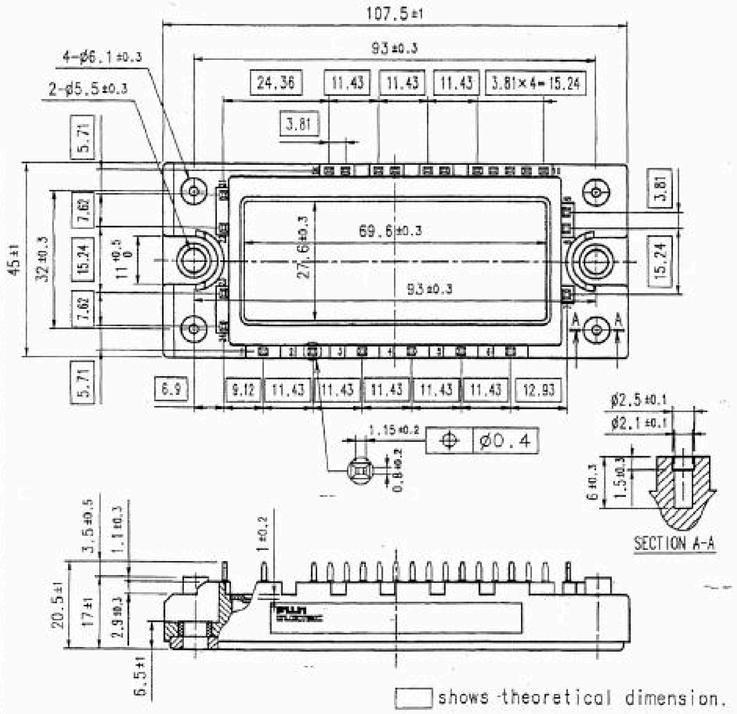
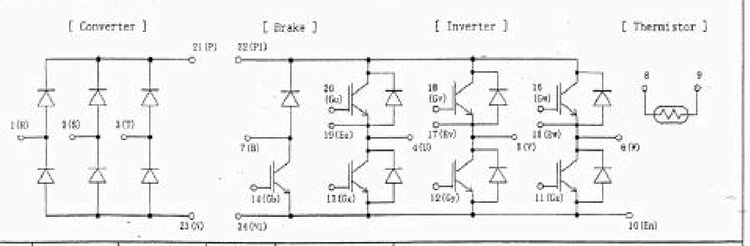
Target Specification of 7MBR10KA060

1. Outline Drawing (Unit : mm)



2. Equivalent circuit



	DATE	NAME	APPROVED
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REVISIONS			

Fuji Electric Co.,Ltd.

DWG. No. MT6M 2677 1/3

MA4LE

3. Absolute Maximum Ratings (at Tc= 25℃ 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℃, 10ms	70	A
	I^2t (Non-Repetitive)		I^2t	half sine wave	25	A^2s
Junction temperature			Tj		150	℃
Storage temperature			Tstg		-40～ +125	℃
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℃ unless otherwise specified)

	Items	Symbols	Conditions		Characteristics min.	typ.	Max.	Units
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, Ic = 10 A	chip		2.3		V
				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 Ic = 10 A VGE = ±15 V RG = 220 Ω			0.7	1.2	μs
		tr				0.2	0.6	
		$tr_{(i)}$						
	Turn-off time	toff				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, Ic = 10 A	chip		2.3		V
				terminal		2.5	3.0	
	Turn-on time	ton	Vcc= 300 V Ic = 10 A VGE = ±15 V RG = 220 Ω			0.7	1.2	μs
		tr				0.2	0.6	
	Turn-off time	toff				0.6	1.0	
		tf				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℃			5000		Ω
			T =100℃		465	495	520	
	B value	B	T = 25/50℃		3305	3375	3450	K

5. Thermal resistance characteristics

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

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