

Target specification of 1600V/100A Converter + Brake module (Tentative)

1. Maximum rating (at Tc=25°C unless otherwise specified)

Item		Symbol	Condition	Max.	Unit	
Converter	Repetitive peak reverse voltage	VRRM		1600	V	
	Non-repetitive peak reverse voltage	VRSM		1760	V	
	Average output current	Io	50/60Hz sine wave Tc=97°C	100	A	
	One cycle surge current (50Hz)	IFSM	From rated load	1200	A	
	I ² t	I ² t	From rated load	6000	A ² s	
	Operation junction temperature	Tj		-40 to +125	°C	
Brake	Collector-Emitter voltage	VCES		1400	V	
	Gate-Emitter voltage	VGES		±20	V	
	Collector current	Ic	DC	Tc=25°C	75	A
				Tc=75°C	50	
		Icp	1ms	Tc=25°C	150	A
				Tc=75°C	100	
	Collector power dissipation	Pc	1 device	360	W	
	Repetitive peak reverse voltage	VRRM		1400	V	
	Operation junction temperature	Tj		150	°C	
Storage junction temperature	Tstg		-40 to +125	°C		
Isolation voltage	Viso	AC : 1min.	2500	V		
Mounting screw torque		M5 screw		N·m		

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

Item		Symbol	Condition	min.	typ.	max.	Unit
Co.	Forward voltage	VFM	Tj=25°C, IFM=100A			1.25	V
	Reverse current	IRRM	Tj=150°C, VR=VRRM			20	mA
Brake	Zero gate voltage Collector current	ICES	VGE=0V, VCE=1400V			1.0	mA
	Gate-Emitter leakage current	IGES	VCE=0V, VGE=±20V			200	nA
	Collector-Emitter saturation voltage	VCE(sat)	VGE=15V, Ic=50A		2.3		V
	Turn-on time	ton	Vcc= V IC=50A				μs
		tr					
	Turn-off time	toff	VGE=±15V RG=25 Ω				μs
		tf					
Reverse current	IRRM	VR=1400V			1.0	mA	

3. Thermal characteristics

Item	Symbol	Condition	min.	typ.	max.	Unit
Thermal resistance	Rth(j-c)	Converter (per total loss)			0.22	°C/W
		Brake IGBT (1 device)			0.35	
Thermal Resistance (Case to fine)	Rth(c-f)	with thermal compound				°C/W

4. Outline drawing and equivalent circuit

MT5Q0588

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	DATE	NAME	APPROVED
DRAWN	Sep. - 14 - 99	S. Miyashita	
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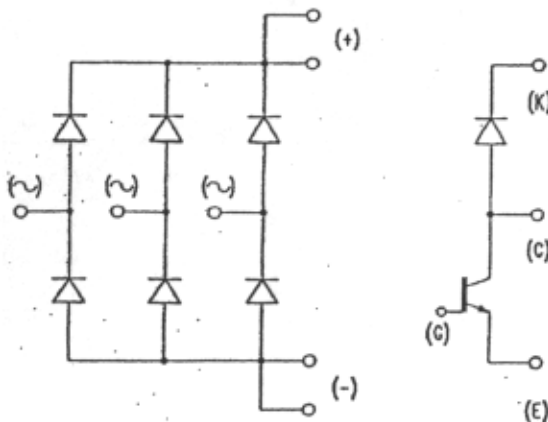
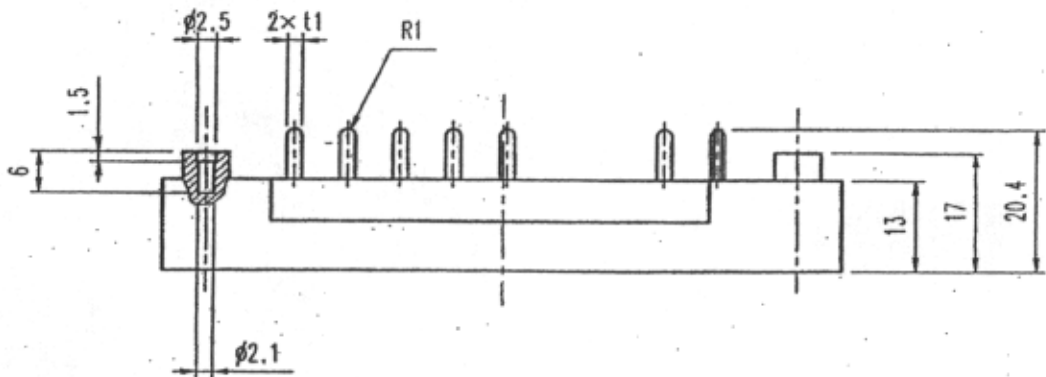
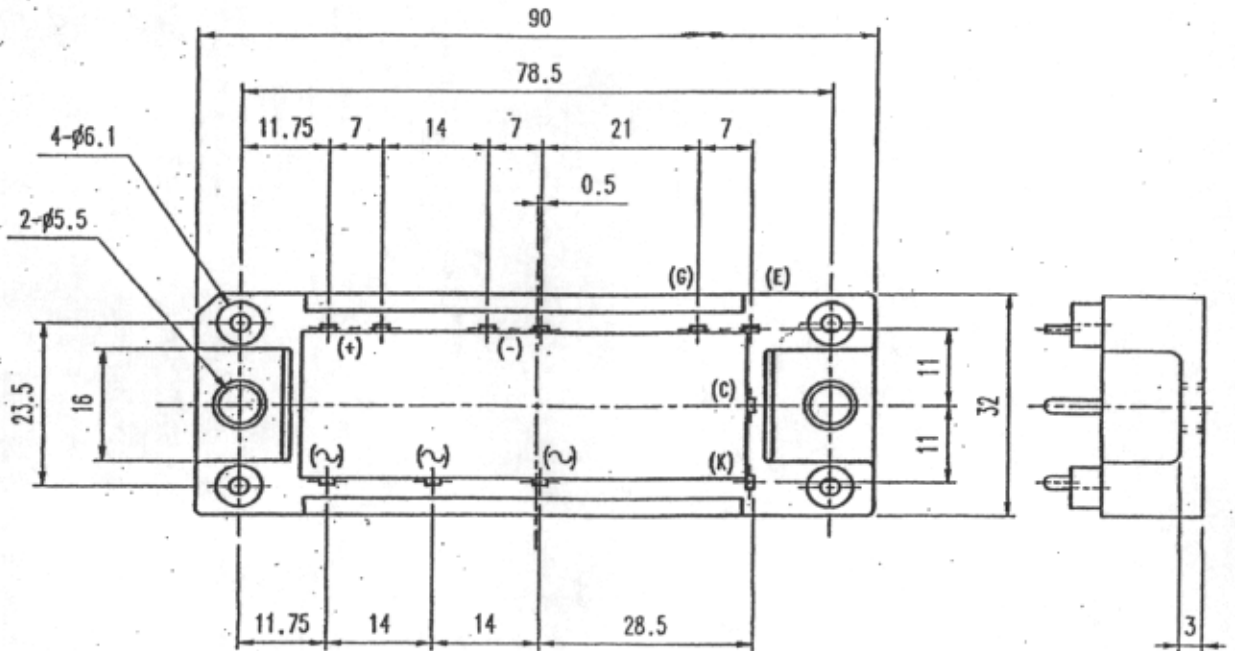
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Outline drawing of Converter + Brake module(Draft)



REVISIONS	

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