(TENTATIVE DATA)

TOSHIBA IGBT MODULE

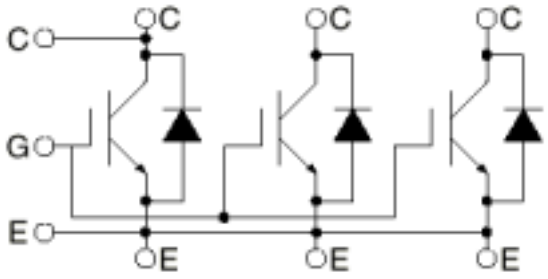
MG900GXH1US53

SILICON N-CHANNEL IGBT

HIGH POWER SWITCHING APPLICATIONS.
MOTOR CONTROL APPLICATIONS.

Features • High Input Impedance
• Enhancement Mode
• Electrodes are Isolated from Case

EQUIVALENT CIRCUIT



MAXIMUM RATINGS (Ta=25degC)

Characteristic		Symbol	Rating	Unit
Collector-Emitter Voltage		V_{CES}	4500	V
Gate-Emitter Voltage		V_{GES}	±20	V
Collector Current	RMS	I_C	900 (NOTE.1)	A
Forward Current	Peak turn-off current	I_{CP}	1800 (NOTE.2)	A
Peak1 cycle surge current	10ms(half sine)	I_{FSM}	6600	A
Collector Power Dissipation(Tc=25degC)		P_C	10000	W
Operating Junction Temperature		T_j	-40...125	degC
Storage Temperature Range		T_{stg}	-40...125	degC
Isolation Voltage		V_{Isol}	6000 (AC 1MIN.)	V
Screw Torque	Terminal:M4/M8	-	2/7	Nm
	Mounting		4	

NOTE.1: Tc=75degC(Half sine), This value does not contain the Switching dissipation
NOTE.2: Vcc=<3000V, Vcp=<4000V, Ls=180nH, RG=6.4ohm, VGE=+/-15V, Tj=<125degC

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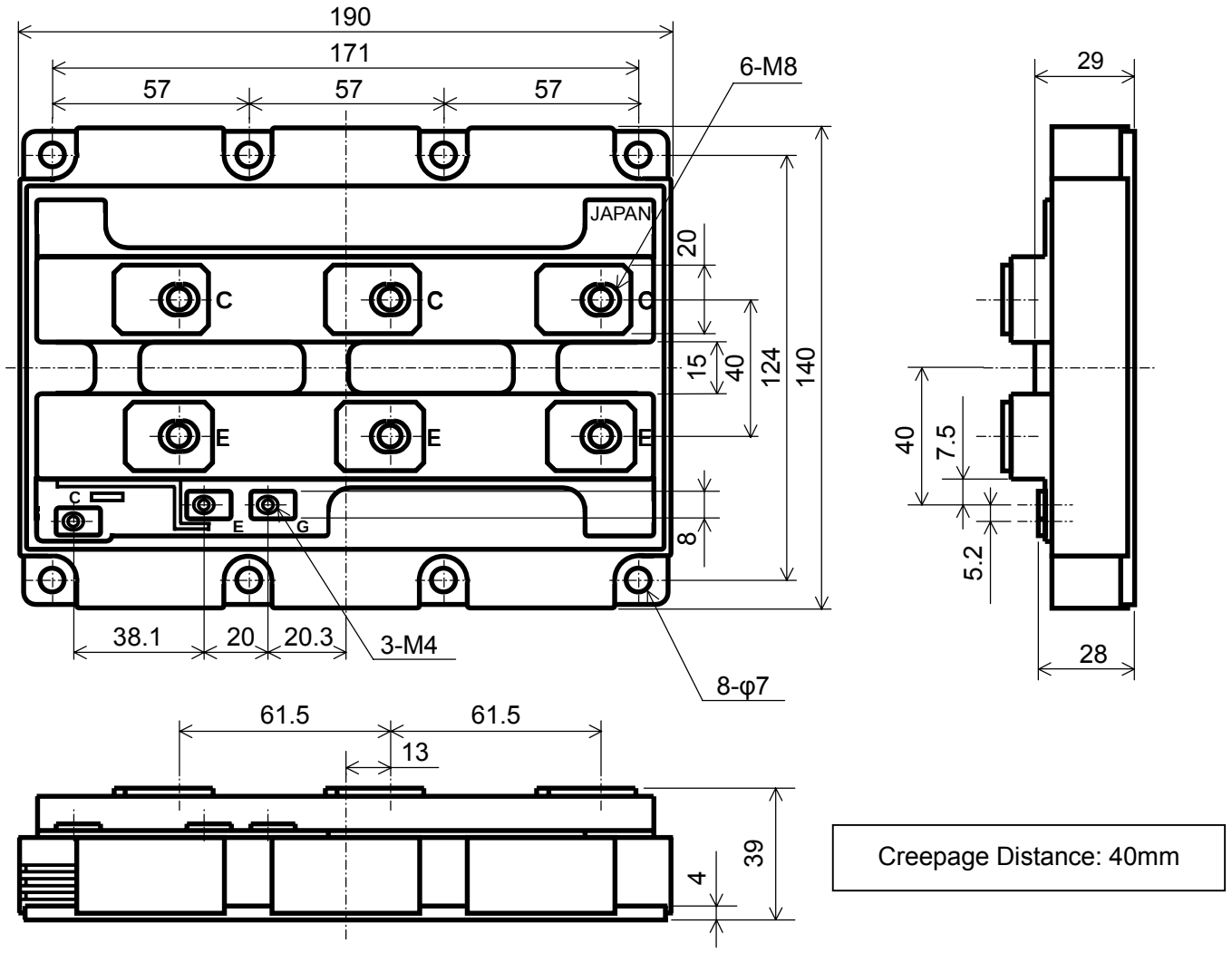
ELECTRICAL CHARACTERISTICS(Tc=125degC Except Thermal Resistance)

Characteristic		Symbol	Test condition	Min.	Typ.	Max.	Unit
Gate leakage current		I_{GES}	V_{GE}=±20V, V_{CE}=0V	-50	-	50	nA
Collector cut-off current		I_{CES}	V_{CE}=4500V, V_{GE}=0V,	-		100	mA
Gate-Emitter cut-off voltage		$V_{GE(off)}$	V_{CE}=5V, I_C=900mA	-	5.0	-	V
Collector-Emitter saturation voltage		$V_{CE(sat)}$	I_C=900A,V_{GE}=15V	-	3.6		V
Input capacitance		C_{ies}	V_{CE}=10V, V_{GE}=0V, f=100kHz	-	200	-	nF
Switching time	Rise time	t_r	V_{CC}=2250V, I_C=900A, V_{GG}=±15V, RG(on)/(off)=18/8.2Ω (Inductive Load, Ls<>180nH)	-	1.0	-	us
	Turn-on time	t_{on}		-	1.5	-	us
	Fall time	t_f		-	3.5	-	us
	Turn-off time	t_{off}		-	9.0	-	us
Forward voltage of Diode		V_F	I_F=900A,V_{GE}=0V	-	3.8		V
Reverse recovery time		Qrr	I_F=900A,V_{GG}=-15V, diF/dt<>-2000A/μs, V_{CC}=2250V	-	800	-	uC
		Irr			1200	-	A
Switching dissipation (NOTE.3)	turn-on loss	Eon	V_{CC}=2250V, I_C=900A, V_{GG}=±15V, RG(on)/(off)=18/8.2Ω (Inductive Load, Ls<>180nH)	-	4.5	-	J
	turn-off loss	Eoff		-	3.6	-	J
	Diode Reverse recovery loss	Edsw	I_F=900A,V_{GG}=-15V, diF/dt<>-2000A/μs, V_{CC}=2250V	-	1.2	-	J
Short Circuit Capability		SC	VGE=+/-15V, tw=10us	3000	-	-	V
Thermal Resistance		$R_{th(j-c)}$	Transistor Stage	-	-	10	K/kW
			Diode Stage	-	-	20	
		$R_{th(c-f)}$	per Module	-	6.0	-	

NOTE.3: Switching dissipation is fully integrated.

(TENTATIVE DATA)

Unit: mm



Creepage Distance: 40mm

1400g(typ.)

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