Tentative

CM100DY-34A

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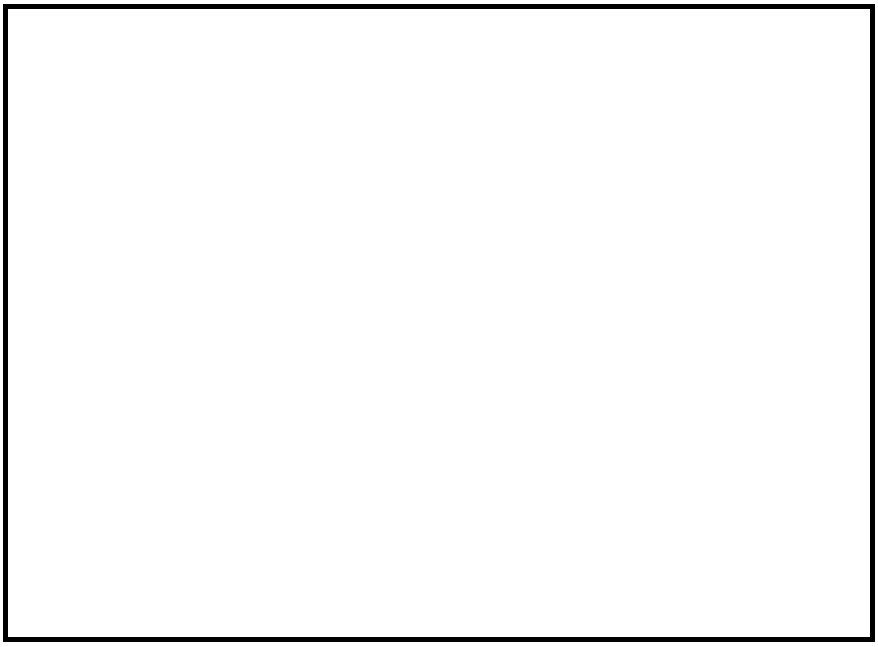
Apr.	T.Igarashi 25.Oct.'05			

HIGH POWER SWITCHING USE

Notice : This is not a final specification. Some parametric limits are subject to change.

CM100DY-34A

●Ic····· 100A
●V_{CES}·····1700V
●Insulated Type
●2-elements in a pack



APPLICATION

General purpose inverters & Servo controls,etc

ABSOLUTE MAXIMUM RATINGS (T_j = 25°C, unless otherwise specified)

Symbol	Item	Conditions	Ratings	Units
V_{CES}	Collector-emitter voltage	G-E Short	1700	V
V_{GES}	Gate-emitter voltage	C-E Short	±20	V
I_C	Collector current	DC, Tc=108 °C *1 ②	100	A
I_{CM}		Pulse ②	200	
I_E ①	Emitter current	Operation ②	100	A
I_{EM} ①		Pulse ②	200	
Pc ③	Maximum collector dissipation	Tc= 25 °C *1	960	W
Tj	Junction temperature		−40～+150	°C
Tstg	Storage temperature		−40～+125	°C
Viso	Isolation voltage	Main terminal to base plate,AC 1 min.	3500	V
—	Torque strength	Main terminal M5	2.5 ～ 3.5	N·m
—	Torque strength	Mounting holes M6	3.5 ～ 4.5	N·m
—	Weight	Typical value	310	g

ELECTRICAL CHARACTERISTICS (T_j = 25°C, unless otherwise specified)

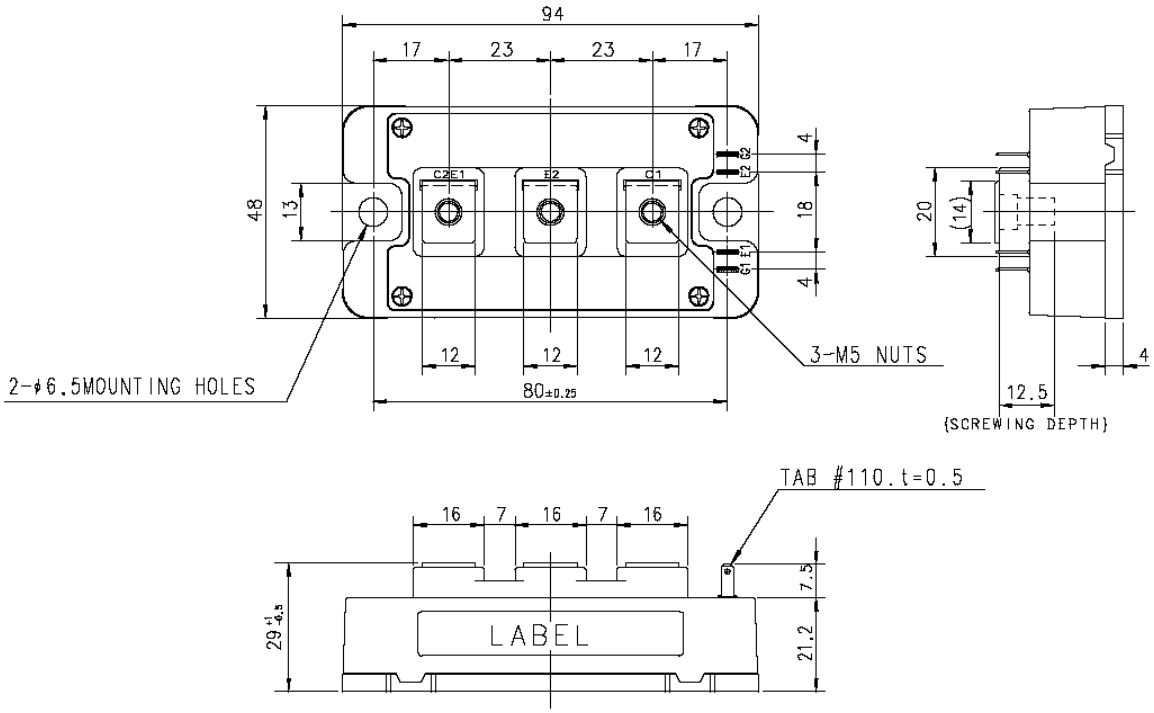
Symbol	Item	Conditions		Min.	Typ.	Max.	Units
I_{CES}	Collector cutoff current	V_{CE}=V_{CES},V_{GE}= 0V		—	—	1	mA
$V_{GE(th)}$	Gate-emitter threshold voltage	I_C=10mA,V_{CE}= 10V		5.5	7.0	8.5	V
I_{GES}	Gate leakage current	±V_{GE}=V_{GES} ,V_{CE}= 0V		—	—	2.0	μA
$V_{CE(sat)}$	Collector to emitter saturation voltage	T_j= 25 °C	I_C = 100A	—	2.2	2.8	V
		T_j= 125 °C	V_{GE}= 15V	—	2.45	—	
Cies	Input capacitance	V_{CE}= 10V		—	—	24.7	nF
Coes	Output capacitance	V_{GE}= 0V		—	—	2.8	
Cres	Reverse transfer capacitance			—	—	0.53	
Q_G	Total gate charge	V_{CC}=1000V,Ic=100A,V_{GE}=15V		—	670	—	nC
td(on)	Turn-on delay time	V_{CC}=1000V,Ic=100A		—	—	200	ns
tr	Turn-on rise time	V_{GE1}=V_{GE2}=15V		—	—	150	
td(off)	Turn-off delay time	R_G=4.8Ω,Inductive load		—	—	550	
tf	Turn-off fall time	switching operation		—	—	350	
trr ①	Reverse recovery time	I_E=100A		—	—	300	
Qrr ①	Reverse recovery charge			—	10	—	μC
V_{EC} ①	Emitter-collector voltage	I_E=100A,V_{GE}= 0V		—	—	3.0	V
Rth(j-c)Q	Thermal resistance	IGBT part (1/2 module) *1		—	—	0.13	°C/W
Rth(j-c)R		FWDi part(1/2 module) *1		—	—	0.21	
Rth(c-f)	Contact thermal resistance	Case to fin,Thermal compound Applied (1/2module) *1 *2		—	—	—	
R_G	External gate resistance			4.8	—	48	Ω

*1: Tc, Tf measured point is just under the chips.
*2: Typical value is measured by using Shin-Etsu Chemical Co.,Ltd "G-746".

① I_E, I_{EM},V_{EC},trr & Qrr represent characteristics of the anti-parallel,emitter to collector free-wheel diode (FWDi).
② Pulse width and repetition rate should be such that the device junction temperature (T_j) dose not exceed Tjmax rating.
③ Junction temperature (T_j) should not increase beyond 150°C.
④ Pulse width and repetition rate should be such as to cause neglible temperature rise.

OUTLINE DRAWING

Dimensions in mm



CIRCUIT DIAGRAM