

CUS100MB

SPECIFICATIONS

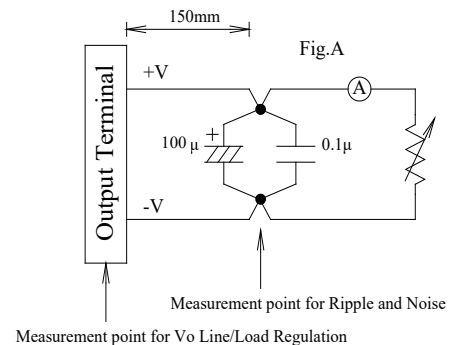
CA833-01-01C

ITEMS		MODEL	CUS100 MB-5	CUS100 MB-12	CUS100 MB-15	CUS100 MB-18	CUS100 MB-24	CUS100 MB-28	CUS100 MB-36	CUS100 MB-48
1	Nominal Output Voltage	V	5	12	15	18	24	28	36	48
2	Maximum Output Current @ Convection cooling	A	12	6.7	5.4	4.5	4.2	3.6	2.8	2.1
	Maximum Output Current @ Force air cooling	A	16	8.4	6.7	5.6				
3	Maximum Output Power @ Convection cooling	W	60.0	80.4	81.0	81.0	100.8	100.8	100.8	100.8
	Maximum Output Power @ Force air cooling	W	80.0	100.8	100.5	100.8				
4	Efficiency @ Convection cooling (Typ.) 115/230 VAC (*1)	%	83 / 84	87 / 89	88 / 89	88 / 89	88 / 90	88 / 90	88 / 90	88 / 90
	Efficiency @ Force air cooling (Typ.) 115/230 VAC (*1)	%	81 / 83	87 / 88	87 / 89	87 / 89				
5	Input Voltage Range	(*)2	85 - 265 VAC (47-63Hz)							
6	Input Current @ Convection cooling (Typ.) 115/230 VAC (*1)	A	1.2 / 0.8		1.5 / 0.9		1.8 / 1.1			
	Input Current @ Force air cooling (Typ.) 115/230 VAC (*1)	A	1.5 / 0.9		1.8 / 1.1					
7	In-rush Current (Typ.)	(*)1)(*)3	A 30 / 60 at Cold Start							
8	Output Voltage Range	(*)	-10 / +10							
9	Maximum Ripple & Noise	(*)1)(*)4)(*)5	mV 120		120		150		150	
10	Maximum Ripple & Noise (0%~35% Load)	(*)4)(*)5	mV 240		280		280		280	
11	Maximum Line Regulation	(*)4)(*)6	mV 20		48		60		72	
12	Maximum Load Regulation	(*)4)(*)7	mV 40		96		120		144	
13	No Load Power Consumption	W	< 0.5 @ 230VAC, Ta=25°C, Nominal Output Voltage							
14	Temperature Coefficient	(*)4	Less than 0.02% / °C							
15	Over Current Protection	(*)8	A >16.9	> 8.7	> 7.0	> 5.8	> 4.4	> 3.7	> 2.9	> 2.2
16	Over Voltage Protection	(*)9	V 5.75 - 7.25	13.8 - 17.4	17.25 - 21.75	20.7 - 26.1	27.6 - 34.8	32.2 - 40.6	41.4 - 52.2	55.2 - 69.6
17	Hold-up time (Typ.)	(*)1	ms 10 / 60							
18	Leakage Current	(*)10	- 0.3mA max @265VAC,60Hz							
19	Parallel Operation	-	No							
20	Series Operation	-	Possible							
21	Operating Temperature	(*)11	-20°C ~ +70°C, start up at -30°C							
22	Operating Humidity	-	10 - 90%RH (No condensing)							
23	Storage Temperature	-	-40°C ~ +85°C							
24	Storage Humidity	-	10 - 90%RH (No condensing)							
25	Cooling	(*)12	Convection or Force Air Cooling							
26	Withstand Voltage	-	Input-FG : 2kVAC (20mA) 1xMOPP, Input-Output : 4kVAC (20mA) 2xMOPP, Output-FG : 1.5kVAC (20mA) 1xMOPP							
27	Isolation Resistance	-	More than 100MΩ at 25°C,70%RH, Output - FG : 500VDC							
28	Vibration	-	At no operating, 10-500Hz (Sweep for Imin.) Maximum 19.6m/s <sup>2</sup> X,Y,Z 1 hour each							
29	Shock	-	Less than 196m/s <sup>2</sup> , MIL-STD-810F							
30	Safety	-	Approved by IEC/ES/CSA/EN 60601-1(cTUVus), IEC/UL/CSA/EN 62368-1(cURus), Designed to meet GB4943.1							
31	EMI	(*)1	Designed to meet EN55011-B, EN55032-B, FCC-Class B							
32	Immunity	-	Designed to meet IEC61000-4-2 (Level 2,3), IEC61000-4-3 (Level 3), IEC61000-4-4 (Level 3), IEC61000-4-5 (Level 3,4), IEC61000-4-6 (Level 3), IEC61000-4-8 (Level 4), IEC61000-4-11 Designed to meet IEC60601-1-2 Ed.4.1							
33	Weight (Typ.)	g	165							
34	Size (L x W x H)	mm	101.6 x 50.8 x 25.4 (Refer to Outline Drawing)							

\*Read instruction manual carefully, before using the power supply unit.

=NOTES=

- \*1. At 115VAC/230VAC, Ta=25°C, nominal output voltage and maximum output power.
- \*2. For cases where conformance to various safety specs (UL, CSA, EN) are required, input voltage range will be 100 ~ 240VAC (50-60Hz).  
Output derating required when Vin is less than 115VAC, refer output derating curve for details.
- \*3. Not applicable for the in-rush current to noise filter for less than 0.2ms.
- \*4. Please refer to Fig. A for measurement of Vo, line and load regulation and ripple voltage.
- \*5. Ripple & noise are measured at 20MHz by using a 150mm twisted pair of load wires terminated with a 0.1uF and 100uF capacitor.
- \*6. 85~265VAC, constant load.
- \*7. No load - full load, constant input voltage.
- \*8. Hiccup with automatic recovery.  
Avoid operating at over load or short circuit condition.
- \*9. OVP circuit shut down the output, manual reset (Re power on) to get output voltage.
- \*10. Measured by the each measuring method of UL, CSA, and EN (at 60Hz), Ta=25°C.
- \*11. Refer to output derating curve for details of output derating versus input voltage, ambient temperature and mounting method .  
- Load (%) is percent of maximum output power or maximum output current. Do not exceed its derating of maximum Load.  
- Maximum load start up at -30°C is possible. However, it may not fulfill all the specifications.
- \*12. Force air cooling with air velocity more than 1.2m/s (measured at component side of PCB, air must flow through component side).



**CUS100MB**

OUTPUT DERATING

CA833-01-02A

**OUTPUT DERATING VERSUS OPERATING AMBIENT TEMPERATURE (Ta)**

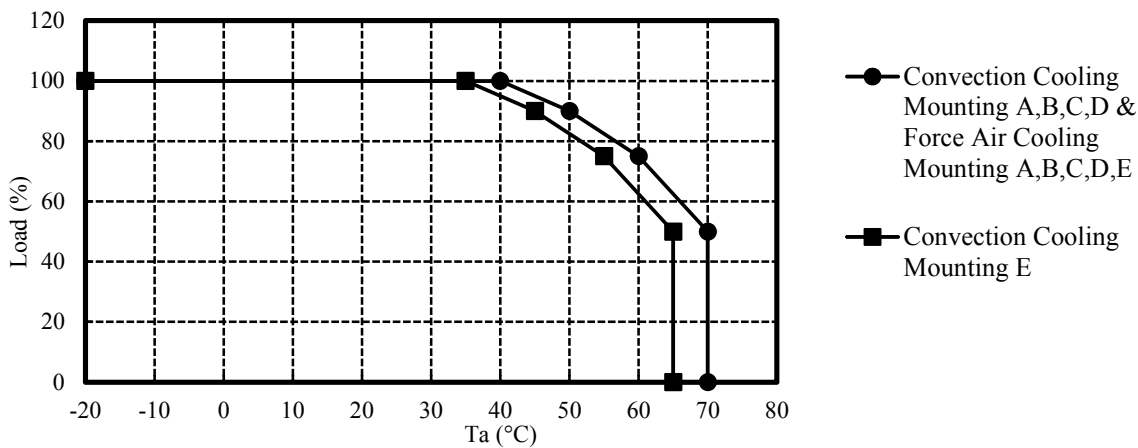
**1. CUS100MB-5**

Convection Cooling: Mounting A,B,C,D  
& Force Air Cooling: Mounting A,B,C,D,E

Ta (°C)	Load (%)
-20 - +40	100
50	90
60	75
70	50

Convection Cooling: Mounting E

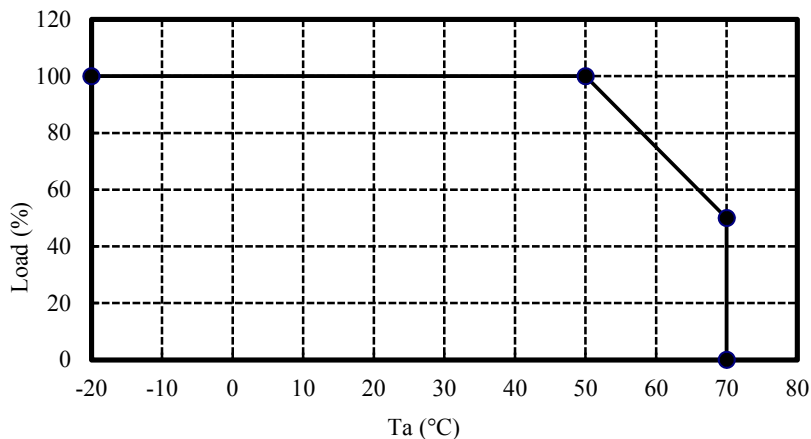
Ta (°C)	Load (%)
-20 - +35	100
45	90
55	75
65	50



**2. CUS100MB-12, -15, -18**

Convection and Force Air Cooling  
Mounting: A,B,C,D,E

Ta (°C)	Load (%)
-20 - +50	100
70	50



**CUS100MB**

OUTPUT DERATING

CA833-01-03A

**3. CUS100MB-24**

Convection Cooling

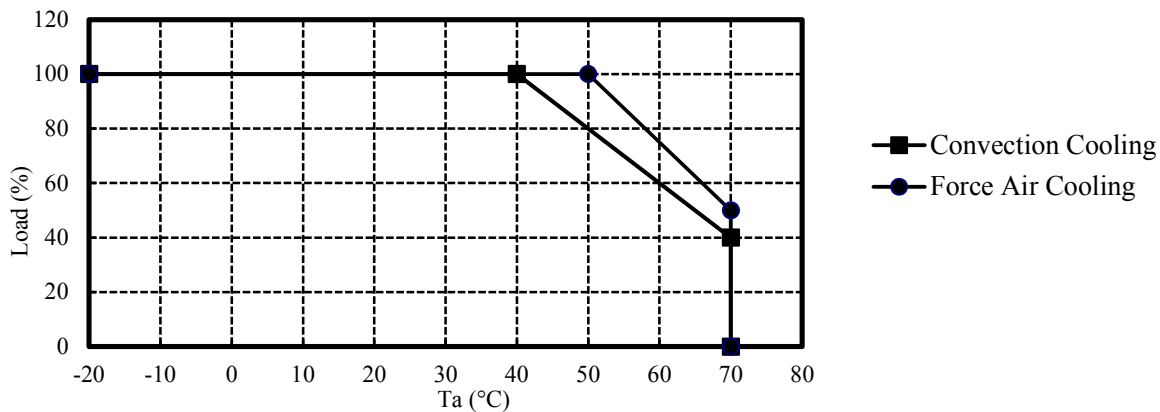
Mounting: A,B,C,D,E

Ta (°C)	Load (%)
-20 - +40	100
70	40

Force Air Cooling

Mounting: A,B,C,D,E

Ta (°C)	Load (%)
-20 - +50	100
70	50



**4. CUS100MB-28**

Convection Cooling

Mounting: A,B,C,D

Ta (°C)	Load (%)
-20 - +40	100
50	80
70	40

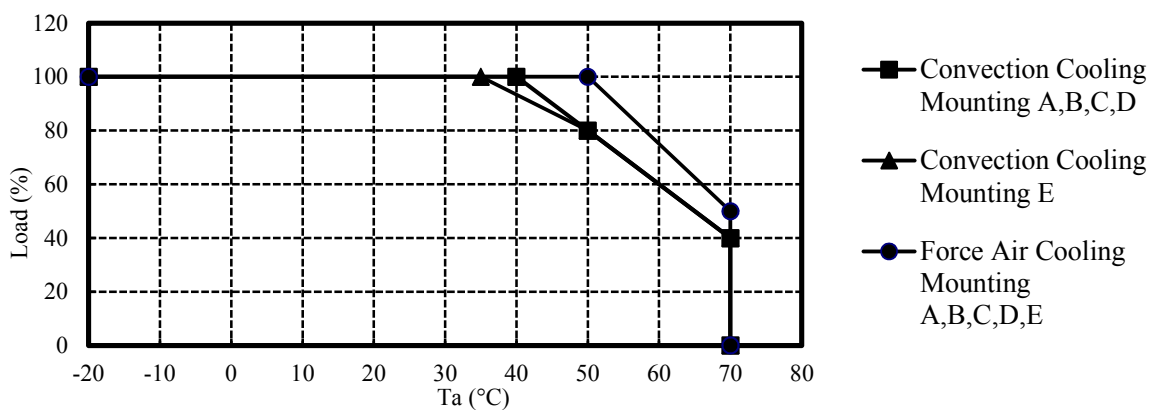
Mounting: E

Ta (°C)	Load (%)
-20 - +35	100
50	80
70	40

Force Air Cooling

Mounting: A,B,C,D,E

Ta (°C)	Load (%)
-20 - +50	100
70	50



CUS100MB

OUTPUT DERATING

CA833-01-04

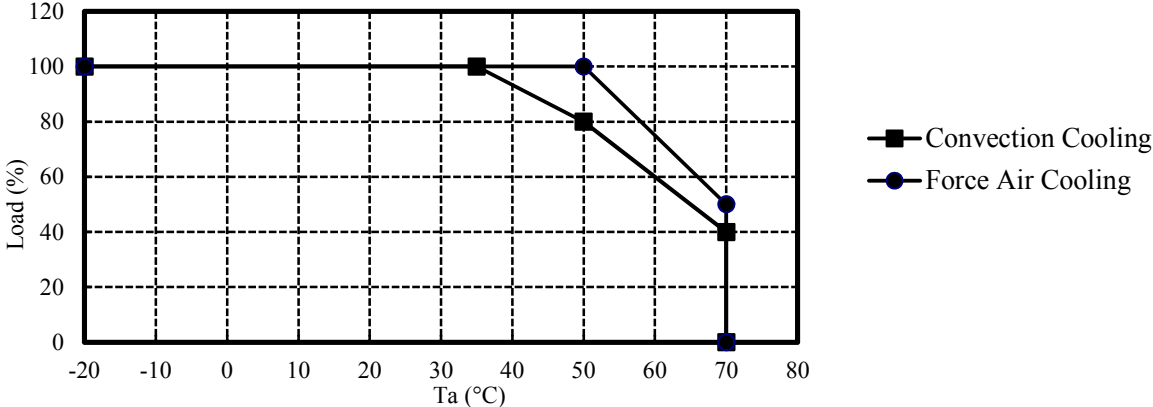
5. CUS100MB-36

Convection Cooling  
Mounting: A,B,C,D,E

Ta (°C)	Load (%)
-20 - +35	100
50	80
70	40

Force Air Cooling  
Mounting: A,B,C,D,E

Ta (°C)	Load (%)
-20 - +50	100
70	50



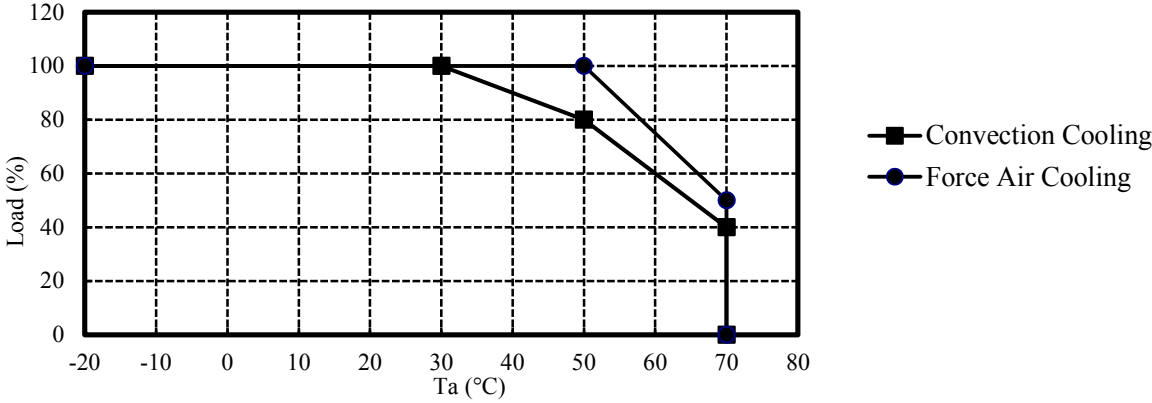
6. CUS100MB-48

Convection Cooling  
Mounting: A,B,C,D,E

Ta (°C)	Load (%)
-20 - +30	100
50	80
70	40

Force Air Cooling  
Mounting: A,B,C,D,E

Ta (°C)	Load (%)
-20 - +50	100
70	50



**CUS100MB**

OUTPUT DERATING

CA833-01-05

**OUTPUT DERATING VERSUS INPUT VOLTAGE**

CUS100MB-5  
Mounting A,B,C,D,E

Input Voltage (VAC)	Load (%)
85	80
100~265	100

CUS100MB-12, -15, -18, -24, -28, -36, -48  
Mounting A,B,C,D,E

Input Voltage (VAC)	Load (%)
85	80
115~265	100

