

CUS60M/P

(/P : Solderable Pin option)

SPECIFICATIONS

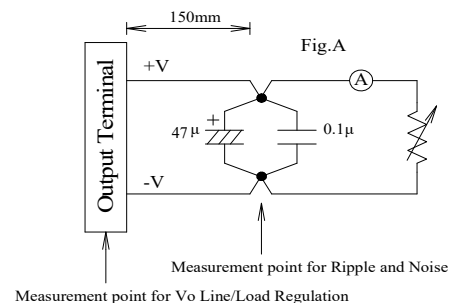
CA849-01-01/P-A

ITEMS	MODEL	CUS60M -5/P	CUS60M -12/P	CUS60M -15/P	CUS60M -18/P	CUS60M -24/P	CUS60M -48/P		
1	Nominal Output Voltage	V	5	12	15	18	24		
2	Maximum Output Current	A	6	5.0	4.0	3.35	1.25		
3	Maximum Output Power	W	30.0	60.0	60.0	60.3	60		
4	Efficiency (Typ.)	115/230 VAC (*1)	%	81 / 81	87 / 88	87.5 / 87	88 / 88	89 / 90	90 / 91
5	Active Average Efficiency related to Erp	115/230 VAC (*1)	-	81 / 79.5	87 / 86	87 / 86.5	87 / 87	88 / 87	90 / 89
6	No Load Power Consumption	W	< 0.5 @ 265VAC , Ta=25°C, Nominal Output Voltage						
7	Input Voltage Range	(*2)	85 - 265 VAC (47-63Hz)						
8	Input Current (Typ.)	115/230 VAC (*1)	A	0.7/ 0.5	1.2 / 0.8				
9	Inrush Current (Typ.)	(*1)(*3)	A	30 / 60 at Cold Start					
10	Output Voltage	-	Fixed Shipment condition: 5V: ±3%; 12V,15V,18V,24V,48V: ±2.5%						
11	Maximum Ripple & Noise(Ta>0°C/Ta<=0°C)(*1)(*4)(*5)	mV	120 / 200	120 / 200	150 / 500	150 / 500	150 / 500	200 / 500	
12	Maximum Ripple & Noise (0%~35% Load)	(*4)(*5)	mV	240	280	280	280	480	
13	Maximum Line Regulation	(*4)(*6)	mV	20	48	60	72	96	192
14	Maximum Load Regulation	(*4)(*7)	mV	100	120	120	144	192	384
15	Temperature Coefficient	(*4)	-	Less than 0.02% / °C					
16	Over Current Protection	(*8)	-	>105% of Maximum Output Current . 12V,15V,18V,24V Class 2 limited power source					
17	Over Voltage Protection	(*9)	-	Above 120% ~ , shutdown					
18	Hold-up time (Typ.)	115/230 VAC (*1)	ms	20 / 100					
19	Earth Leakage Current	(*10)	-	0.2mA max @265VAC,60Hz					
20	Patient Leakage Current	-	-	60uA max @265VAC , 60Hz , Input to Output					
21	Parallel Operation	-	-	No					
22	Series Operation	-	-	Possible					
23	Operating Temperature	(*11)	-	-20°C ~ +70°C					
24	Operating Humidity	-	-	10 - 90%RH (No condensing)					
25	Storage Temperature	-	-	-40°C ~ +85°C					
26	Storage Humidity	-	-	10 - 90%RH (No condensing)					
27	Operating Altitude	-	-	5000m, derating 5°C/1000m above 3000m					
28	Isolation Class / Class of Protection	-	-	Class I (L,N,FG) or ClassII (L,N)					
29	Cooling	-	-	Convection Cooling					
30	Withstand Voltage	-	-	Input-Output : 4kVAC (20mA) 2xMOPP, Input-FG : 2kVAC (20mA) 1xMOPP, Output-FG : 1.5kVAC (20mA) 1xMOPP					
31	Isolation Resistance	-	-	More than 100MΩ at 25°C,70%RH, Output - FG : 500VDC					
32	Vibration	-	-	At no operating, 10-500Hz (Sweep for 1min.) Maximum 19.6m/s ² X,Y,Z 1 hour each					
33	Shock	-	-	Less than 196m/s ²					
34	Safety	-	-	Approved by IEC/EN62368-1, UL62368-1, CSA62368-1 Approved by IEC/EN60601-1, ES60601-1, CSA-C22.2 No.60601-1					
35	Pollution	-	-	Degree 2, material group 3					
36	EMI	(*1)	-	Designed to meet EN55011-B, EN55032-B, FCC-Class B Designed to meet IEC61000-4-2 (Level 4,3), 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) , IEC60601-1-2 Ed.4 , Criteria A					
38	Line voltage dip	-	-	SEMI47 (Input Voltage: 200VAC ~ 240VAC)					
		-	-	Designed to meet IEC61000-4-11(Class 3); Criteria A: 200VAC~240VAC Criteria B: 100VAC~120VAC					
		-	-	Designed to meet IEC61000-4-11 (Class 2) : IEC60601-1-2 Ed.4 Criteria A : Input Voltage above 120VAC or output below 70% of Maximum Output Current Criteria B : Input Voltage below 120VAC and Output Current more than 70%					
39	Weight (Typ.)	g	120						
40	Size (L x W x H)	inch	3 x 2 x 1.28 (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 100VAC, 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 47uF 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.



CUS60M/P

OUTPUT DERATING

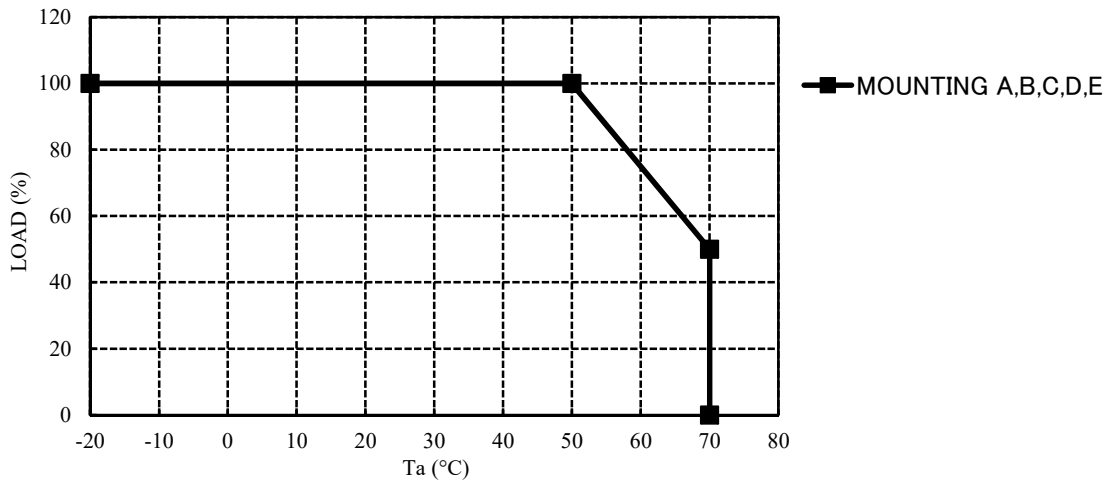
CA849-01-02/P

OUTPUT DERATING VERSUS OPERATING AMBIENT TEMPERATURE (Ta)

* COOLING: CONVECTION COOLING

1. CUS60M-5/P,18/P,48/P

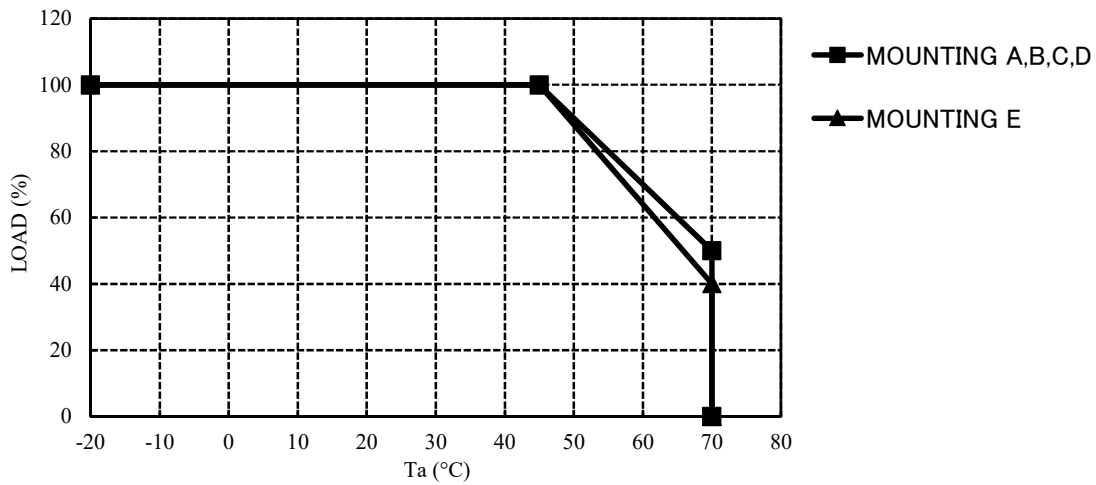
Ta(°C)	LOAD(%)
	Mounting A,B,C,D,E
-20~50	100%
70	50%



2. CUS60M-12/P

Ta(°C)	LOAD(%)
	MOUNTING A,B,C,D
-20~45	100%
70	50%

Ta(°C)	LOAD(%)
	MOUNTING E
-20~45	100%
70	40%



CUS60M/P

OUTPUT DERATING

CA849-01-03/P

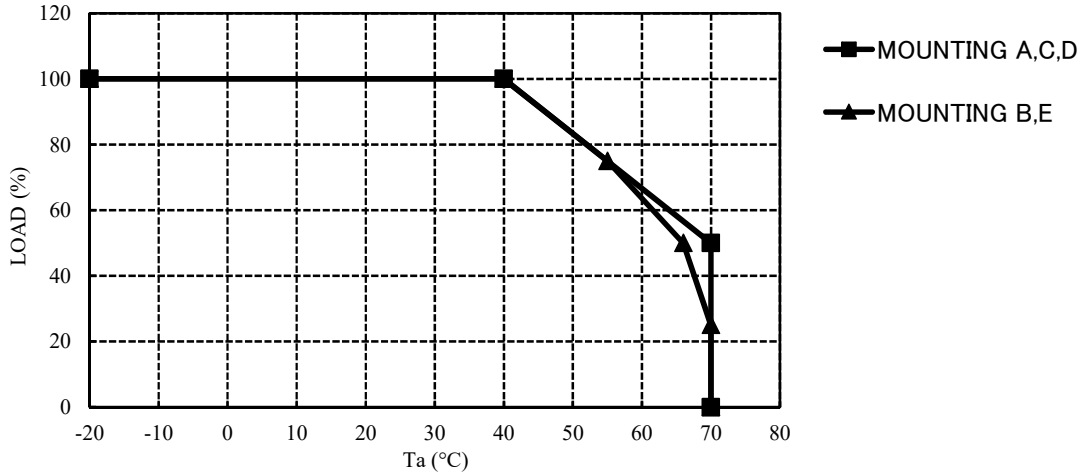
OUTPUT DERATING VERSUS OPERATING AMBIENT TEMPERATURE (Ta)

* COOLING: CONVECTION COOLING

3. CUS60M-15/P

Ta(°C)	LOAD(%)	
	MOUNTING A,C,D	
-20~40	100%	
70	50%	

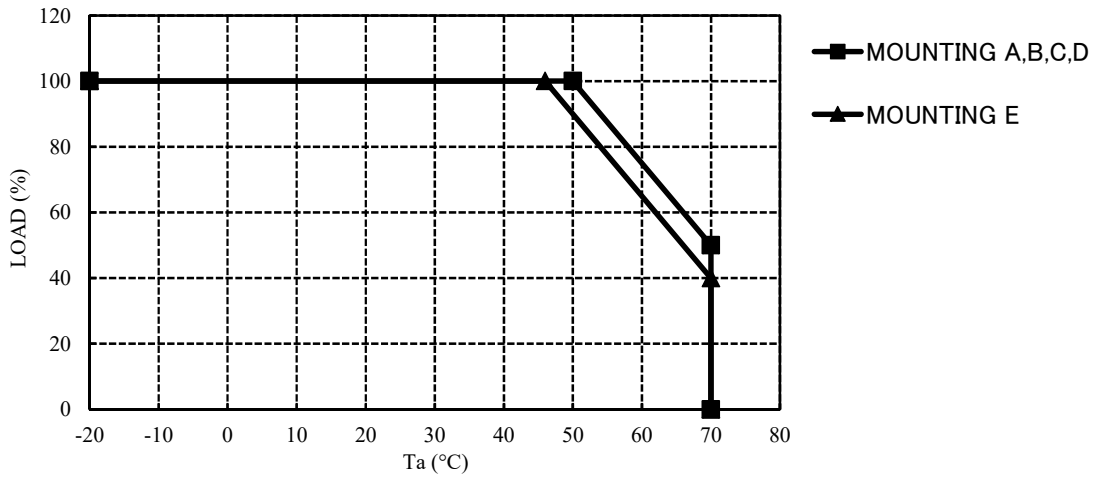
Ta(°C)	LOAD(%)	
	MOUNTING B,E	
-20~40	100%	
55	75%	
66	50%	
70	25%	



4. CUS60M-24/P

Ta(°C)	LOAD(%)	
	MOUNTING A,B,C,D	
-20~50	100%	
70	50%	

Ta(°C)	LOAD(%)	
	MOUNTING E	
-20~46	100%	
70	40%	



CUS60M/P

OUTPUT DERATING

CA849-01-04/P

OUTPUT DERATING VERSUS INPUT VOLTAGE

* COOLING: CONVECTION COOLING

CUS60M-5/P,24/P

Mounting A,B,C,D,E

INPUT VOLTAGE (VAC)	LOAD (%)
85~265	100

CUS60M-12/P,18/P,48/P

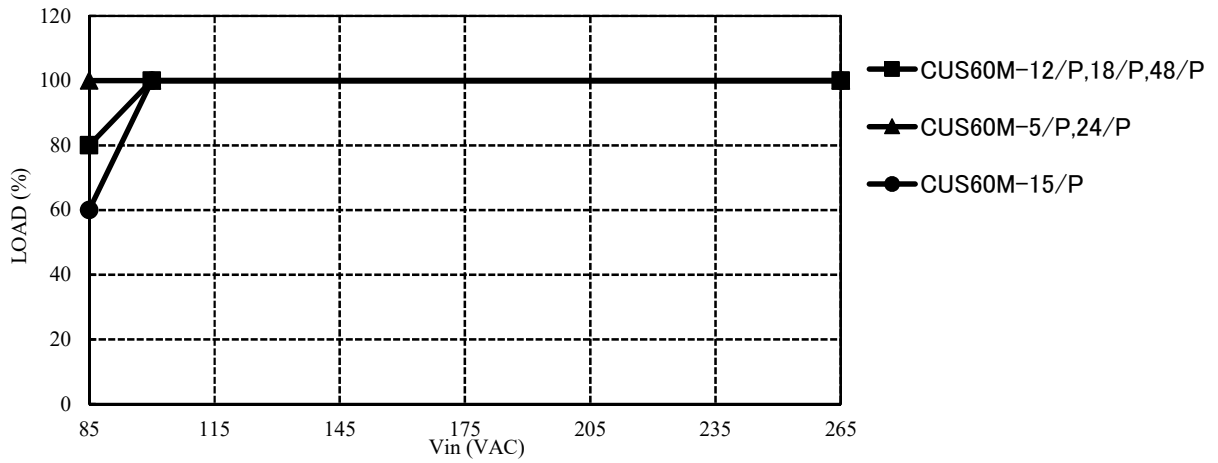
Mounting A,B,C,D,E

INPUT VOLTAGE (VAC)	LOAD (%)
85	80
100~265	100

CUS60M-15/P

Mounting A,B,C,D,E

INPUT VOLTAGE (VAC)	LOAD (%)
85	60
100~265	100



MOUNTING METHOD

MOUNTING A

MOUNTING B

MOUNTING C

MOUNTING D

MOUNTING E

(STANDARD MOUNTING)

