

ITE AC/DC Conduction Cooled

Power Supply

PAA130



Features:

- Class I and Class II input versions
- Convection/Conduction/Forced-Air Cooled
- 125W with natural Convection
- 90-264 VAC universal input
- Active PFC function
- Short circuit/over-voltage/over-current/over-temperature (optional)
- Open frame, U bracket or Enclosed Versions Available
- Safety Approval to UL/IEC/EN 62368-1
- No Load Power Consumption <0.3W
- -30°C to +70°C Wide Range Operating Temperature
- Operating Altitude 5000m
- I/O Isolation 4000VAC

*Safety approvals may be model dependent. Consult TT Electronics for specifics or for additional safety approvals required.

Description:

The PAA130 series of AC/DC switching power supplies provide 125 watts of continuous power across a wide range of operating temperatures . They are available as Class I or Class II input devices . All models meet EN55032 and EN55035 for Class A and Class B emissions limits and comply with EN62368-1 standards.

Model	Output Voltage	Max. Output Wattage w/ (Natural Convection)	Max. Output Wattage w/ (8CFM Forced Air) or (Conduction Cooled)	Max Current (A) w/(Natural Convection)	Max Current (A) w/(8CFM Forced Air) or (Conduction Cooled)	Max Capacitive Load(μF)	Ripple & Noise
PAA130-12A	12VDC	110W (115VAC) 119W (230VAC)	130W	9.166 (115VAC) 9.917 (230VAC)	10.833	4000	160mV
PAA130-14A	24VDC	110W (115VAC) 119W (230VAC)	130W	4.583 (115VAC) 4.958 (230VAC)	5.417	1000	240mV
PAA130-18A	48VDC	115W (115VAC) 125W (230VAC)	130W	2.395 (115VAC) 2.604 (230VAC)	2.708	330	340mV
PAA130-12B	12VDC	110W(100VAC) 119W (115VAC) 119W (230VAC)	130W	9.167 (100VAC) 9.917 (115VAC) 9.917 (230VAC)	10.833	4000	160mV
PAA130-14B	24VDC	115W (100VAC) 120W (115VAC) 120W (230VAC)	130W	4.792 (100VAC) 5 (115VAC) 5 (230 VAC)	5.417	1000	240mV
PAA130-18B	48VDC	120W (100VAC) 125W(115VAC) 125W (230VAC)	130W	2.5 (100VAC) 2.604 (115VAC) 2.604 (230VAC)	2.708	330	340mV
PAA130-12C	12VDC	105W(100VAC) 119W (115VAC) 119W (230VAC)	130W	9.167 (100VAC) 9.917 (115VAC) 9.917 (230VAC)	10.833	4000	160mV
PAA130-14C	24VDC	110W (100VAC) 120W (115VAC) 120W (230VAC)	130W	4.792 (100VAC) 5 (115VAC) 5 (230VAC)	5.417	1000	240mV
PAA130-18C	48VDC	115W (100VAC) 125W(115VAC) 125W (230VAC)	130W	2.5 (100VAC) 2.604 (115VAC) 2.604(230VAC)	2.708	330	340mV

Notes:

1. Part numbering Formula and 'cooling method' for each format.

Model number ending with "A" indicates Open Frame format. (Only 'Convection' and 'Forced Air Cooled')

Model number ending with "B" indicates U-channel format. ('Convection', 'Conduction' and 'Forced Air Cooled')

Model number ending with "C" indicates Enclosed format ('Convection', 'Conduction' and 'Forced Air Cooled')

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Specifications:

Input	
Input Voltage	90 - 264VAC
Input Frequency	47 - 63Hz
Input Current (Full load)	≤2.0A at 115VAC ≤1.0A at 230VAC
Inrush Current (<2ms)	≤50A at 115VAC ≤85A at 230VAC
Leakage Current	<0.1mA 264VAC (Touch Current)
Power Factor (at 230VAC)	PF>0.9 at Full Load
No Load	<0.3W (115/230 VAC)
Output	
Total Output Power	See Table on page 1
Output Voltage	See Table on page 1
Voltage Adj. Range	±10% Output Voltage
Voltage Accuracy	±2%
Line Regulation	±1%
Load Regulation (10-100%)	±1%
Hold Up Time (at 115VAC)	8ms min
Maximum Capacitive Load	See table on page 1
Ripple & Noise	See table on page 1
Protection Features	
Over Power Protection	Protection level 1 (nominal) : Auto recovery, Hiccup mode Protection level 2 (instantaneous high current): Latch
Over Voltage Protection	Protection level 1 (nominal) : Auto recovery Protection level 2 (instantaneous high voltage) : Latch
Over Temperature Protection	Auto recovery.
Short Circuit Protection	Protection level 1 (nominal) : Continuous, Auto recovery Protection level 2 (instantaneous high current) : Latch
Isolation	
Input-Output	4000VAC or 5656VDC
Input-Earth Ground	2000VAC or 2828VDC
Output-Earth Ground	1500VAC or 2121VDC

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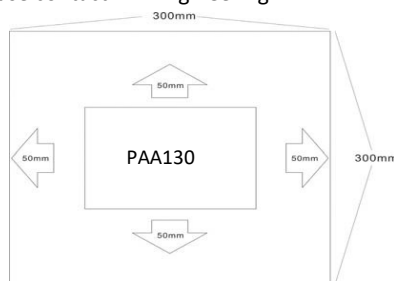


Specifications (continued):

Environment	
Operating Temperature	-30°C to +80°C (with derating)
Storage Temperature	-30°C to +80°C
Temperature Coefficient	±0.05%/°C
Altitude During Operation	5000m
Humidity	20~90% RH
MTBF	>250k hours per MIL-
Vibration	IEC 60068-2-6 (10~500Hz, 2G 10min./1cycle, 60min. Each along X,Y,Z axes)
Shock	IEC60068-2-27
General Specifications	
Dimensions (L x W x H)	3.15" x 2.35" x 1.7" (80.0mm x 59.7mm x 43.2mm) Tolerance ±0.5mm
Weight	0.644lb (292g)
Cooling Method	Natural Convection / Conduction Cooling / 8CFM Fan
Safety	
Approvals*	UL/ IEC/ EN 62368-1
*Safety approvals may be model dependent. Consult TT Electronics for specifics or for additional safety approvals required.	
EMC	
Conducted EMI	EN55032 Class B
Radiated EMI	EN55032 Class I Class B / Class II Class A
EMS	EN55035

Notes:

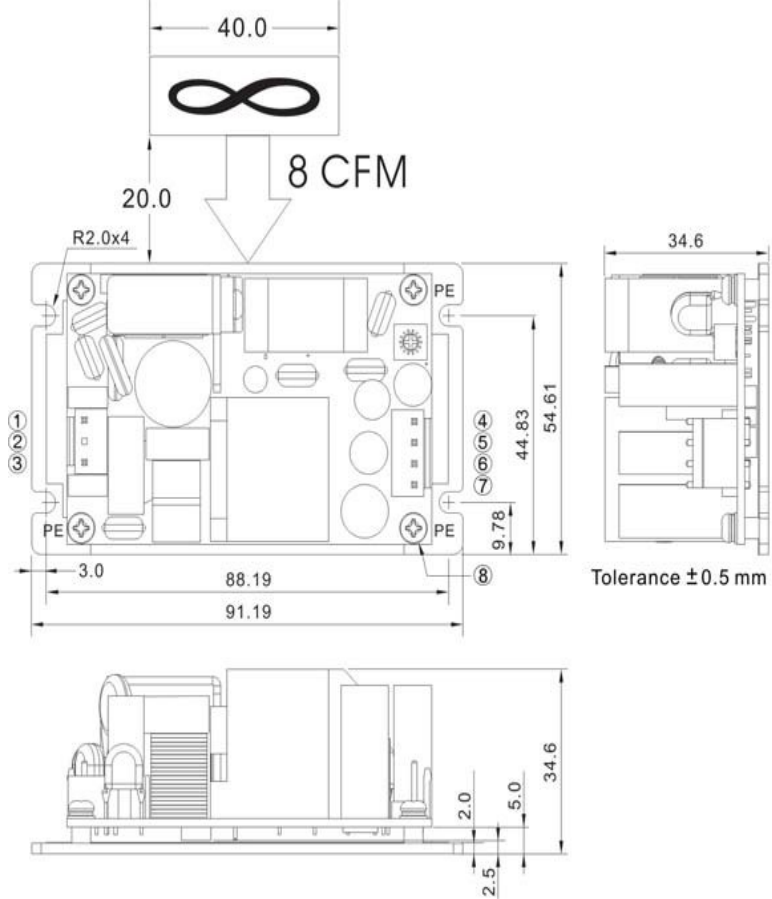
- Ripple & Noise is measured by using a 20MHz bandwidth limited oscilloscope and terminated with a 0.1µF ceramic capacitor in parallel with a 47µF aluminium electrolytic capacitor at full load and nominal line.
- Hold-up Time measured at 90% Vout.
- Please check the derating curve for more details.
- Strongly recommend to conduct this test with DC Voltage. If customer wishes to test with AC Voltage, please disconnect all Y-Capacitors from the power supply.
- Please secure the power supply unit to your metal case by using the four screw holes in the corners for either Class I or Class II equipment.
- The size of the suggested aluminium plate is shows as below. The aluminium plate must have an even and smooth surface (or coated with thermal grease), and PAA130 series must be firmly mounted at the center of the aluminium plate 300 x 300 x 3.0 mm. For other conduction cooling options, please contact TTE Engineering.



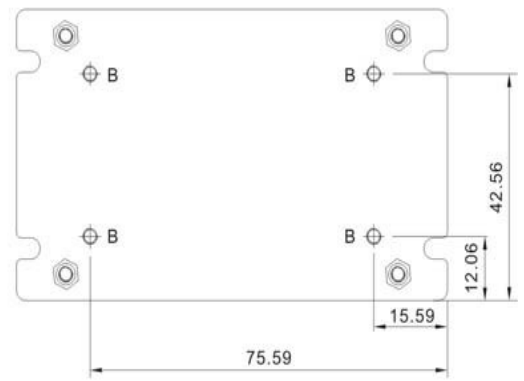
- If Input voltage is lower than 100VAC, please refer to the output derating V.S. input voltage curve for details.
- Double pole, neutral fusing. Disconnect mains before servicing.
- The ambient temperature derating of 3.5/1000m with fan-less models and of 5/1000m with fan models for operating altitude higher.

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Mechanical Outline: (Top View)

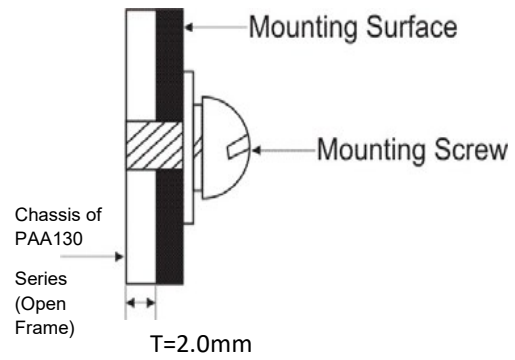


(OPEN FRAME)



ASSEMBLY INSTRUCTIONS

*Heatsink T=2.0mm
Customer is advised to screw into the threads no more than 2.0mm



Brands		Alex		JST	
Pin #	Single	Mating Housing	Terminal	Mating Housing	Terminal
1	AC IN (N)	9396-3	96T series	VHR-3N	SVH-41T-P1.1
2	NO PIN				
3	AC IN (L)				
4-5	+DC OUT				
6-7	-DC OUT				
8	Earth Ground	—	—	—	—

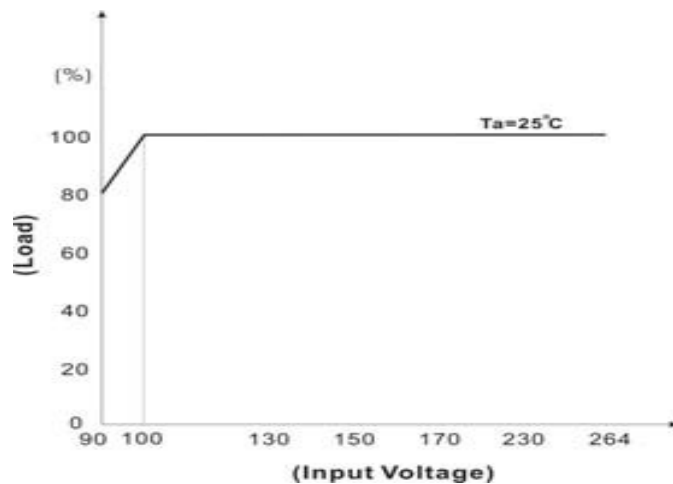
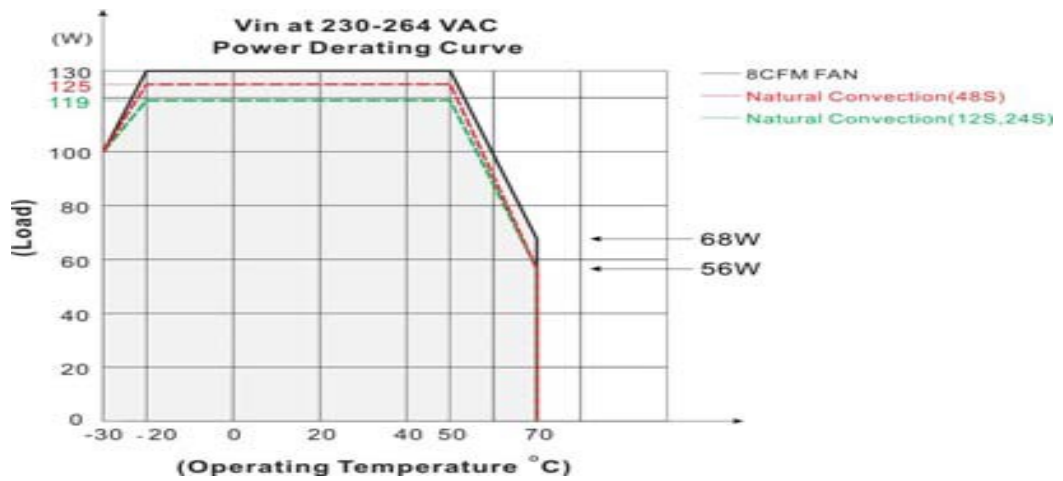
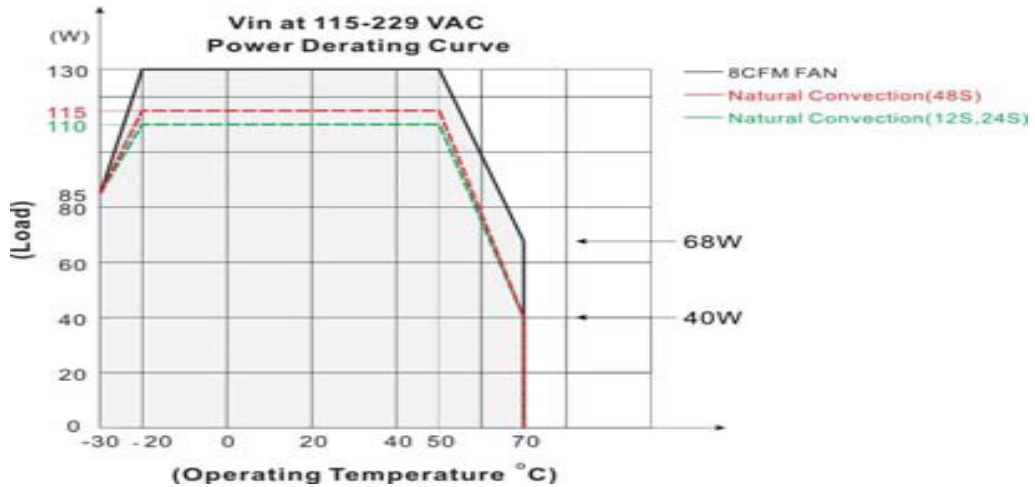
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Derating Curve:

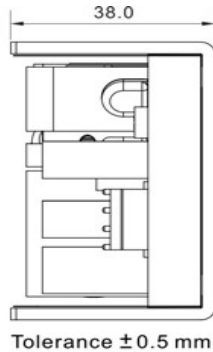
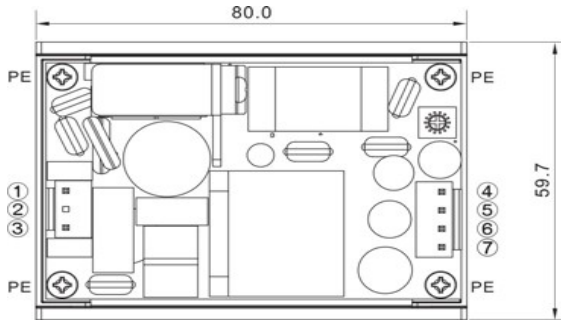
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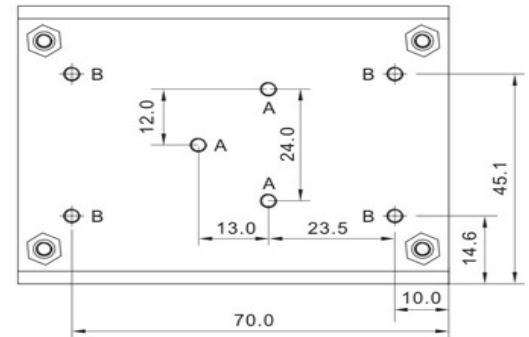
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Mechanical Outline: (Top View)



(U-BRACKET)



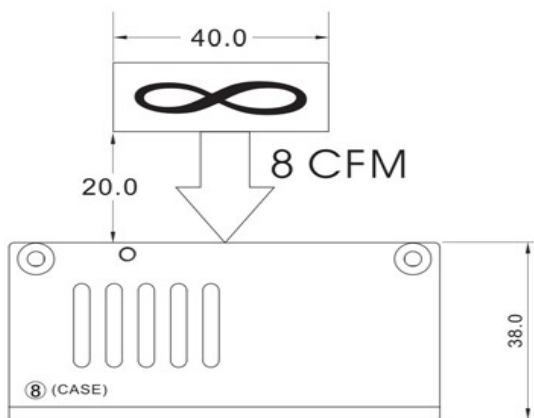
A= For fixture to chassis only

A=M3x0.5P

B=For fixture to pcb/chassis only

B=M3x0.5P

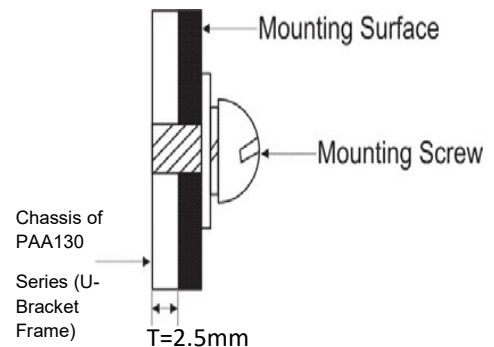
Torque:3±0.5 Kgf.cm



ASSEMBLY INSTRUCTIONS

*U Case T=2.5mm

Customer is advised to screw into the threads no more than 2.5mm



Brands		Alex		JST	
Pin #	Single	Mating Housing	Terminal	Mating Housing	Terminal
1	AC IN (N)	9396-3	96T series	VHR-3N	SVH-41T-P1.1
2	NO PIN				
3	AC IN (L)	9396-4	96T series	VHR-4N	SVH-41T-P1.1
4-5	+DC OUT				
6-7	-DC OUT				
8	Earth Ground	—	—	—	—

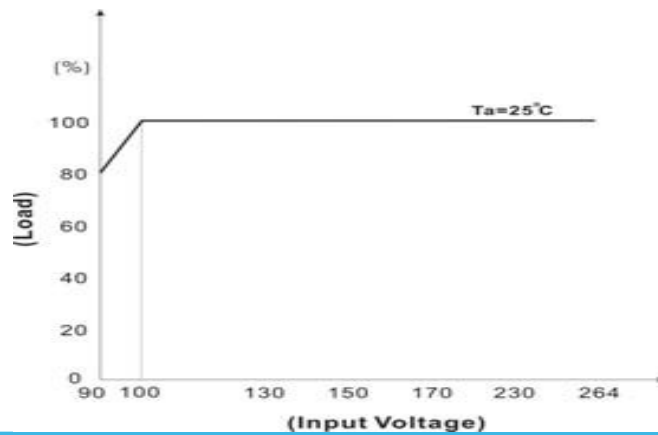
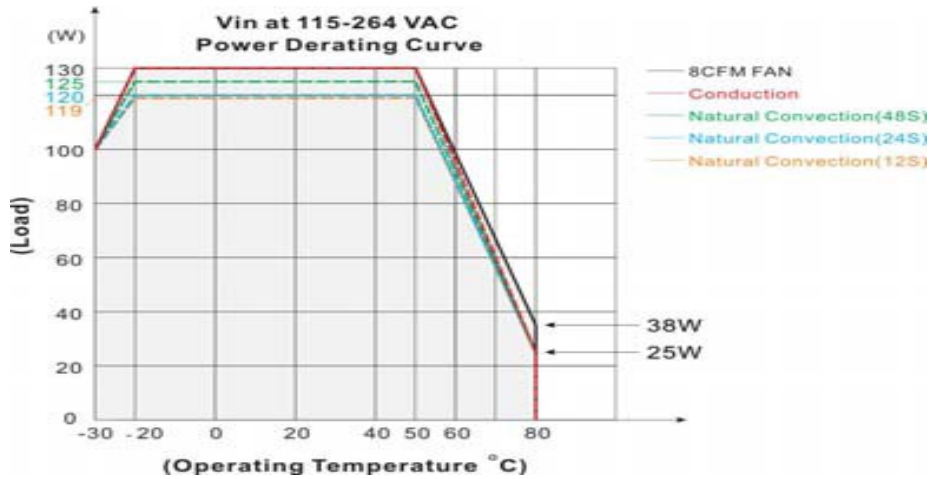
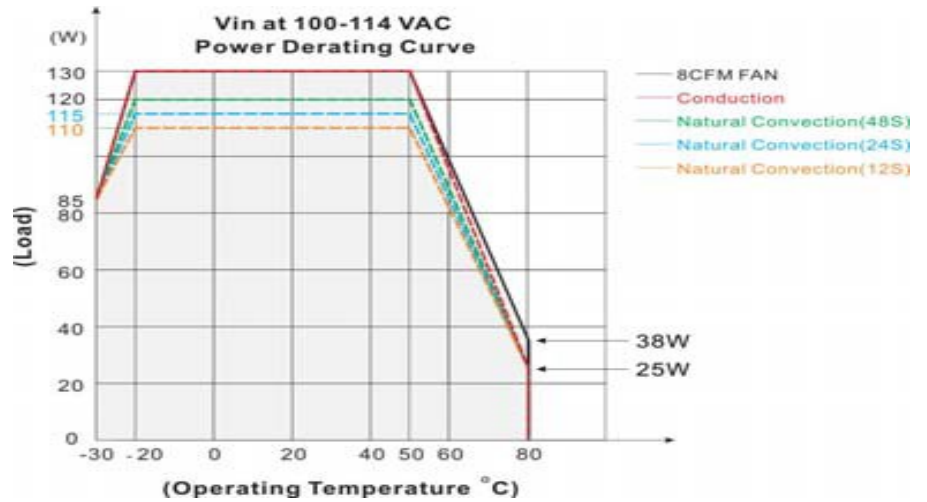
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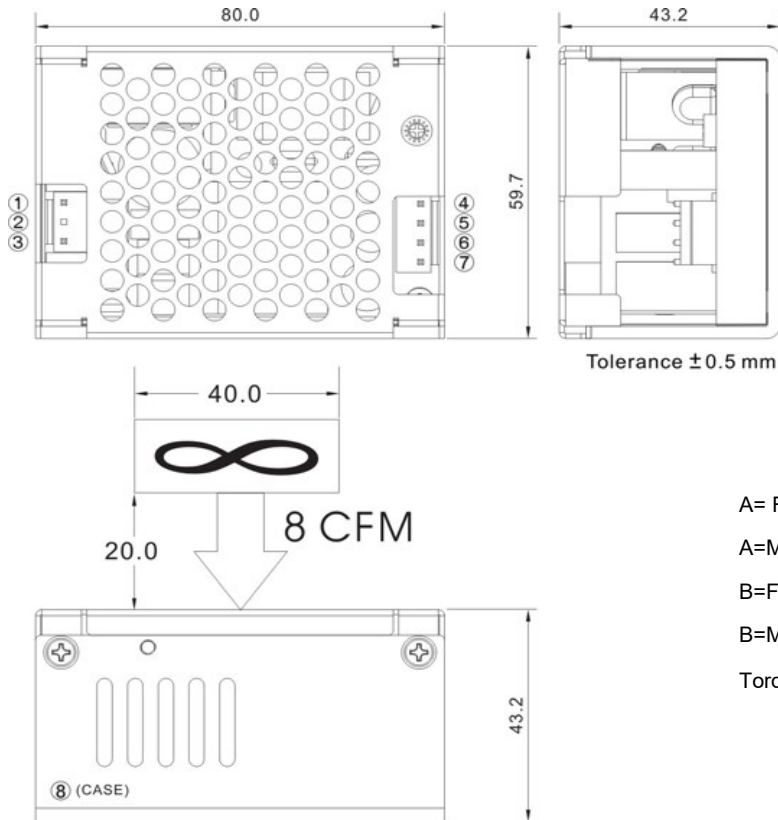
Derating Curve:

(U-BRACKET)

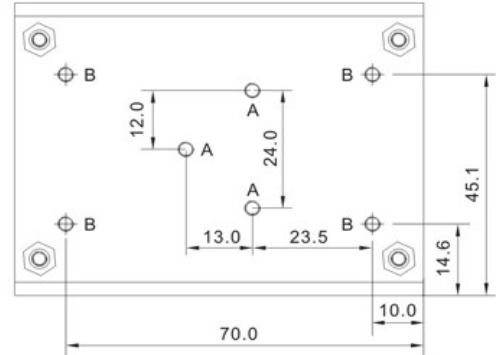


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Mechanical Outline: (Top View)



(ENCLOSED)



A= For fixture to chassis only

A=M3x0.5P

B=For fixture to pcb/chassis only

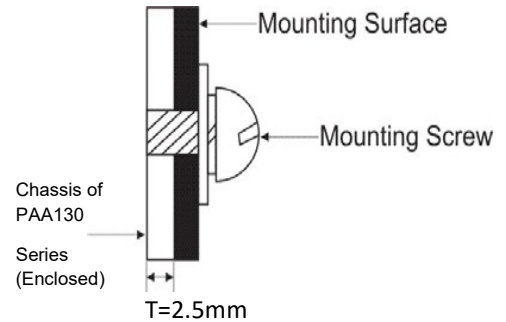
B=M3x0.5P

Torque: 3 ± 0.5 Kgf.cm

ASSEMBLY INSTRUCTIONS

*Heatsink T=2.5mm

Customer is advised to screw into the threads no more than 2.5mm



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Pin #	Single	Mating Housing	Terminal	Mating Housing	Terminal
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4-5	+DC OUT				
6-7	-DC OUT				
8	Earth Ground	—	—	—	—

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Derating Curve:

(ENCLOSED)

