Medical Grade Quick Charger

APM-0060 GaN Charger

Fast charger for medical devices

Highlights:

- **Charger for medical devices**
- **Wall plug-in type**
- **Output up to 60W,output 5V@3A，9V@3A，12V@3A，15V@3A，20@3A**
- **Type C output connector**
- **PD 3.0**
- **DOE Level VI**
- **IP22**
- **Universal 90VAC~264VAC input**
- **OCP,OVP,OTP**
- **>200kHour MTBF**
- **IEC60601-1 compliance**

2MOPP RoHS Green Power LEVEL VI EFFICIENCY

Key Specification

Part number	APM-0060
Output	5V@3A，9V@3A，12V@3A，15V@3A，20@3A
Rated Output Power	60W
Output Voltage Regulation	±5%
Ripple & Noise	<2%
Input Type	Fixed plug
Input Voltage	90VAC~264VAC
Input Current	<1.5A
Average Efficiency	> 90%
Inrush Current	<60A
Touch Current	<100uA @ Normal Condition, <300uA @ Single Fault Condition
Operation Temperature	-10 to +40°C
Life	3 Years
Dimension	56x56x30mm

Part number:

APD	-	0060	-	CCV	-	CN	-	AA
Series		Rated power		Output voltage		Input plug		Output connector type

Output voltage

CCV	Constant current and constant voltage charging curve

Input plug

CN	China plug

Output connector type (we offer different type of output connectors)

AA	Type C USB

Specifications

All specifications are for rated input/output and 25℃ unless otherwise specified

Output Characteristics	
Output Voltage Total Regulation	±5%
Turn on delay	<3 second
Rise Time	<150ms
Holdup Time	>8.3ms
Protections	
Over Current Protection (OCP)	<130% Rated output current Auto-restart after fault condition is removed
Short Circuit Protection (SCP)	Auto-restart after fault condition is removed
Over Voltage Protection (OVP)	Latch off
Over Temperature Protection (OTP)	(optional)
Environmental	
No Load Power Consumption	Meet DoE level VI
Operation Ambient Temperature	-10°C to 40°C.
Operation Humidity	20%~95% RH non-condensing
Storage Ambient Temperature	-40°C to 85°C
Storage Humidity	10%~95% RH non-condensing
Operating Altitude	0~5,000 meters
Shock (Non-Operation)	50G, 11ms, 3 shocks for each direction
Vibration (Operation)	5-500Hz, $2G_{RMS}$, 15 Minutes for each three axis

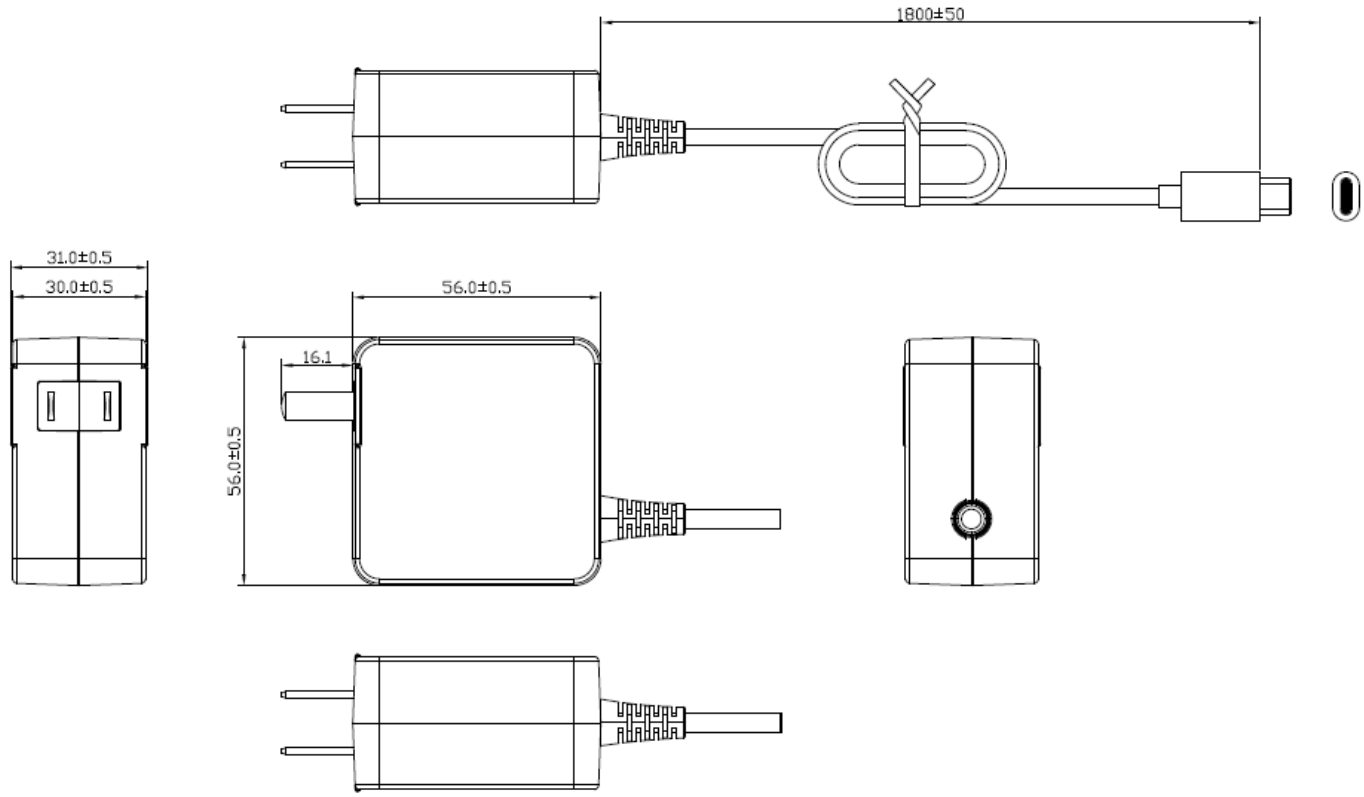
Specifications

All specifications are for rated input/output and 25℃ unless otherwise specified

Reliability	
MTBF	>200K hrs. MIL-HDBK-217F. 25°C
Life	>3 Years
Safety & Directives	
Directives, Compliance only	UL60601-1 2nd edition, UL60601-1 3rd edition+A1 CB Report TUV EN60601-1:2006, UL60601-1+CAN/CSA60601-1:(Ed.3.2005)
Energy Saving	DOE Level VI
Dielectric Voltage	Primary to Secondary: 4kVAC
EMC	
Emissions	EN55011/EN55022, FCC TITLE 47: Class B
Harmonic Current Emissions	IEC61000-3-2, Class D
Voltage Flicker	IEC61000-3-3
Electrostatic Discharge	IEC61000-4-2, Level 4, Criteria A.
Electrical Fast Transient / Burst	IEC61000-4-4, Level 3 Criteria A. 1kV
Surge	IEC61000-4-5, Level 3 Criteria A. Common mode 2kV, Differential Mode 1kV
Conducted Immunity	IEC61000-4-6, Level 2 Criteria A. 150kHz-80MHz, 3Vrms, 6Vrms at ISM Bands and Amateur radio bands
Power Frequency Magnetic Fields	IEC61000-4-8, Criteria A. 30A/m
Voltage Dips	IEC61000-4-11 Criteria A: 30% 10ms Criteria B: 60% 100ms, 100% 5000ms
	IEC60601-1-2 Criteria A: 100% 10ms at step 45° Criteria B: 30% 500ms, 100% 20ms, 100% 5000ms

Mechanical Drawing

All dimensions in mm



Features Descriptions

- Turn on delay time

Turn on delay is the delay time from AC turns on o output reaches regulation.

- Rise time

Rise time is defined as the time that output voltage or current rises from 10% of regulation number to 90% of regulation.

- Ripple & Noise

Ripple & Noise is measured at 20MHz bandwidth, and 12”output cable end, with a 10uF aluminum capacitor and a 0.1uF ceramic capacitor paralleled to the cable end.

- Average Efficiency

Average efficiency is defined as average efficiency of 25%, 50%, 75% and 100% load. The input voltage is 115VAC/60Hz and 230VAC/50Hz