KTEC

SPECIFICATION FOR APPROVAL

KSC-78P-D

USB-PD CHARGER

USB-PD CHARGER

KSC-78P-D Manufacturer Part No.: KS251411

Customer Name KTEC

Customer Part NO.

Project Modify List

Item	Content	Rev.	Date	Prepared By	Checked By
1	First REV.	A	2025-12-09	Wang	Chen qiujian

Manufacturer

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Approved Signatures

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1. INPUT REQUIREMENTS

1.1 Highlight & Features

- Simple design philosophy.
- Reliability level of 100K hours MTBF @ 25° C (rated input voltage, 80% load and using the BELLCORE SR-332 issue 3 method).
- DC output voltage must be Safe Extra Low Voltage (SELV) & Limited Power as defined by IEC62368-1.
- This specification defines the performance characteristics for a car charger compliant with Type-C& Type-A.
- The adapter meet PPS,PD2.0, PD3.0, BC1.2,QC2.0.

1.2 General Description

This specification defines the performance characteristics for a class Ⅱ adapter, single-phase 60.0/18.0 watts. Single output level power supply.

1.3 Chemical Substance Control Laws

PAHS 6P NP NOP REACH ROHS

1.4 Input Conditions

The car charger shall operate over the voltage ranges as follows:

Rated	12~24VDC

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2. OUTPUT REQUIREMENTS

2.1	Nominal DC output voltage	Fixed				
		TYPE-C	5.0-20V	TYPE-A	5.0V	9.0V
2.2	Minimum load current		0.0A		0.0A	0.0A
2.3	Rating load current		3.0A		3.0A	2.0A
2.4	Rating output power		60W max		15W	18W
2.5	Line regulation	The line regulation is less than ±5% while measuring at rated load.				
2.6	Load regulation	The load regulation for +5.0V, is less than ±5%, at measured output load from 0% to 100% rated load.				
2.7	Ripple and noise	250 mVp-p Add 0.1uF/50V ceramic capacitor and 10uF/50V aluminum electrolytic capacitor in parallel the output terminal. Measured with 20MHz Bandwidth Oscilloscope at full load land rated input voltage 12Vdc & 24Vdc.				
2.8	Average efficiency	82% minimum 12Vdc and 24Vdc. output Load current from 100%. The test point: end PCBA board, no include DC cable.				
2.9	Turn on delay time	3000 ms max. at nominal input DC voltage and full load.				
2.10	Rise time	The car charger shall have a start-up rise time of less than 30 mS to rise to within regulation limits for all DC outputs.				
2.11	Output over-shoot	Less than 10% of nominal voltage value.				
2.12	LED indication function	Red LED, Yellow LED, White LED				
2.13	Protection function					
	Over-voltage protection	The charger has OVP function. The car charger shall not be damaged.				
	Short-circuit protection	The car charger shall not be damaged by short the DC output to Ground. The car charger shall resume normal operation when a short-circuited fault condition is removed.				
	Over current protection	When overload is applied to the output, the car charger shall be shut down and enter auto-recovery or latch mode 4.5A Max.				
2.14	Power reduction	When the temperature of the casing is higher than 55±5°C, or the NTC (the edge of the 60W PCB) > 85°C, the power drops to 30W + 18W.				

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3. LED LIGHT FUNCTION CONDITIONS

Input conditions			Output conditions
Temperature	Input voltage ADC	LED color	Power
Normal	>11.5-17V or >23V	White	Full power
Very high	10.5-11.5V or 22-23V	Yellow	Reduced power
Too high	<10.5V or 17-22V	Red	Cut off power

LED color corresponds to power output

Power output is reduced either from high temperature or low car battery

Blinking only occurs if there is a input voltage warning

Blinking voltage warning

4. MECHANICAL

4.1 Enclosure and Layout

Plastic case	UL94V-0
Weight	/ g (Max.)
Dimensions	36.76*33.25*84.30mm
Color	Black

4.2 Input and Output Configuration

Input pin	Cigar shaped
Output connector	USB Type-C 5V/3A, 9V/3A, 12V/3A, 15V/3A, 20V/3A USB Type-A: 5V/3.0A,9V/2.0A
Polarity	/

4.3 Safety Requirements and Certification

4.3.1 Regulatory Standard

The car charger shall comply with the following international regulatory standards:

for short	Country or Region	Certified Status	Standard
CE	Europe	/	Declared & CE Mark EN62368-1
E-MARK	Europe	/	ECE-R10

5. ENVIRONMENTAL REQUIREMENTS

Temperature	Operating	-10°C +25°C (The power is 60W+18W) -26°C +50°C (The power is 30W+18W) If the case temperature continues to rise, the power supply will turn off the output.)
	Non-Operating	-20°C +70°C
Humidity	Operating	5%~95% (Non Condensing)
	Non-Operating	5%~95% (Non Condensing)
Drop Test	At 1m drop on wood/concrete surface, two times on each side	

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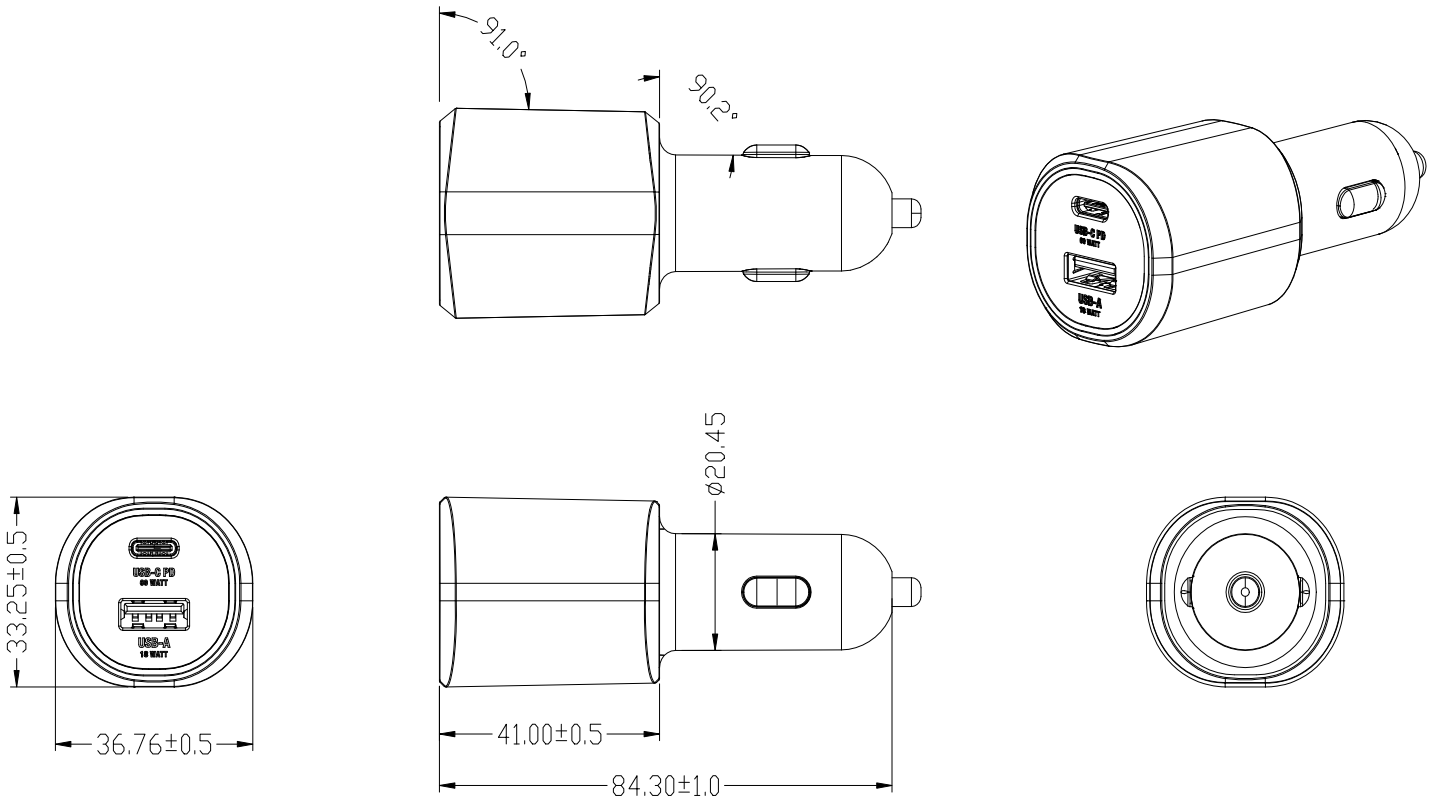
6. APPEARANCE DRAWING: (UNIT: MM)



NOTE: 1. Case cover & chassis material:

PC BLACK

2. AC PIN MATERIAL: BRASS (NI PLATED)

3. PAHS 6P NP REACH ROHS NOP

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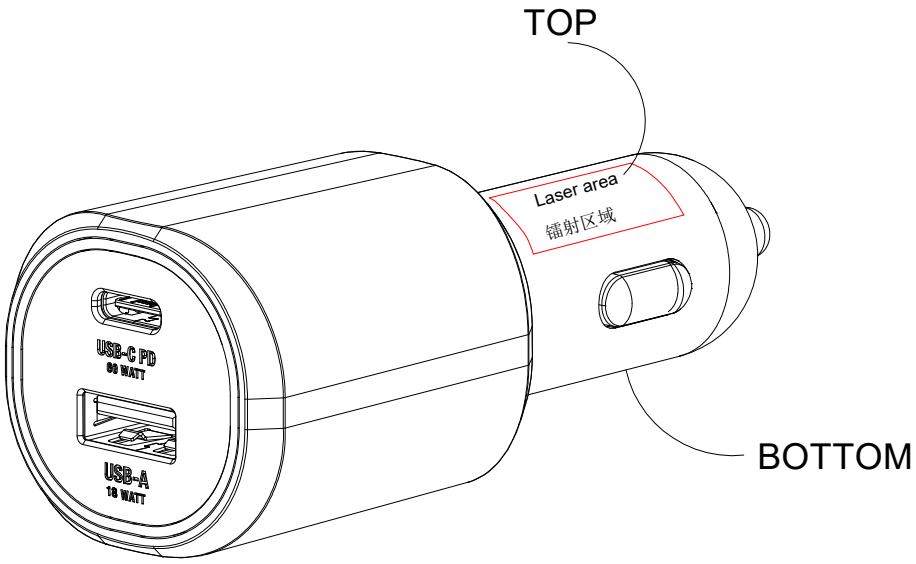
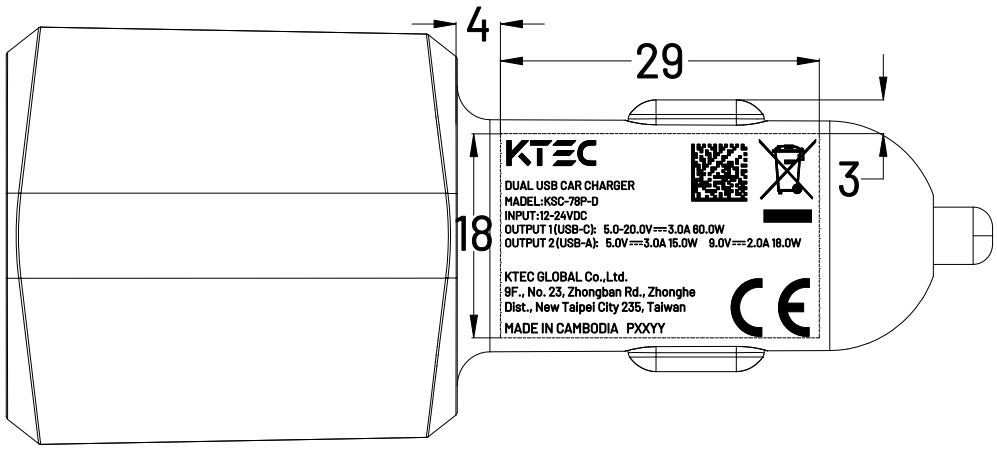
7. NAME PLATE



Top



Note: Laser

PXXYY (P=PAHS, 6P, NP XX=Week,YY=Year) use the actual production date.

SN (Data Matrix Code size: 5*5mm):

First code G(Ktec)＋Production part number (Product code)＋Ten yards of flow code SSSSSSSSSS (decimal) Total 19 codes

Example：GKS2514110000000001, GKS2514110000000002...GKS2514119999999999.

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8. PACKING (UNIT: MM)