



DEMO BOARD TEST REPORT

0.1%~100% Dimming LED Ceiling Driver with KP15111+KP14632+KP35026

FEATURES

- 0.1%~100% Dimming with Two independent Channels
- High PF > 0.9, Low THD < 20%
- Harmonic Meet IEC61000-3-2 Class C
- Wireless BLE Control with Phone interface
- No Flicker within Full Dimming Range
- No Audible Noise
- Low Standby Power < 500mW
- Excellent Line and Load Regulation
- > 6dB Margin for EMI Test

APPLICATIONS

- Dimmable & Color-Mix LED Ceiling

INTRODUCTION

The DEMO board is designed to demonstrate the high performance of KP14632. And the DEMO board is a two-stage smart dimming LED driver with two independent channels. The first stage is a high-efficiency boost PFC with constant voltage controller KP15111, the second stage is a high-precision deep-dimming buck with constant current controller KP14632, and the dimming signal comes from the Bluetooth module.

KP14632 can maintain high constant current accuracy and excellent line/load regulations due to its unique sampling techniques and internal algorithms. The Demo board is designed with 0.1%~100% width dimming range for dimmable and Color-Mix LED ceiling.

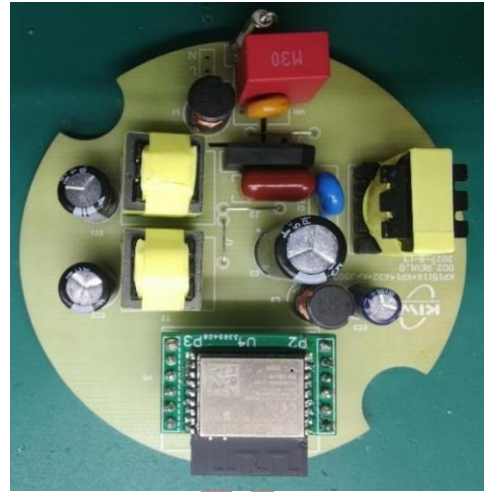
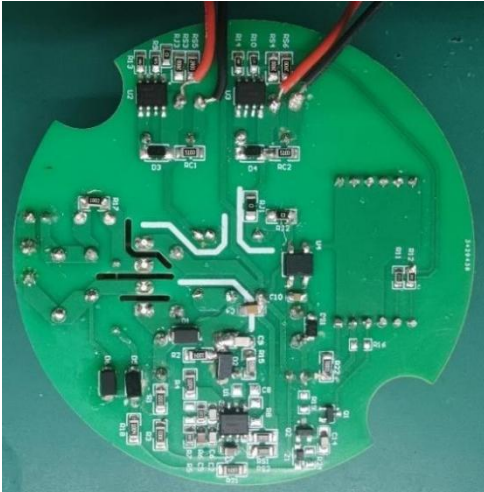
The Demo Board is typically designed for 25W lighting application with 176-264Vac input and meets the EN55015 conducted and radiated EMI requirement.

DEMO BOARD SEPCIFICATION

Description	Symbol	Min.	Typ.	Max.	Unit	Note
Input Voltage	Vin	176		264	Vac	50Hz
Output Voltage	Vout	70	115	125	Vdc	
Output Current	Iout		0.2		A	
Total Output Power	Pout		23		W	
Dimming Range	Dim	0.1		100	%	
Power Factor	PF		>0.9			176Vac~264Vac 125V/0.2A
Total Harmonic Distortion	THD		<20		%	176Vac~264Vac 125V/0.2A
Subharmonic			IEC61000-3-2 Class C			Pin >25W
Efficiency	η		>90		%	Full load
Standby Power	Ploss			0.5	W	176Vac~264Vac
Startup Time	Tst			0.5	S	Tested at 176Vac/50Hz
EMI Margin		6			dB	EN55015
Surge Test		1			kV	Differential Mode @ 220Vac/50Hz

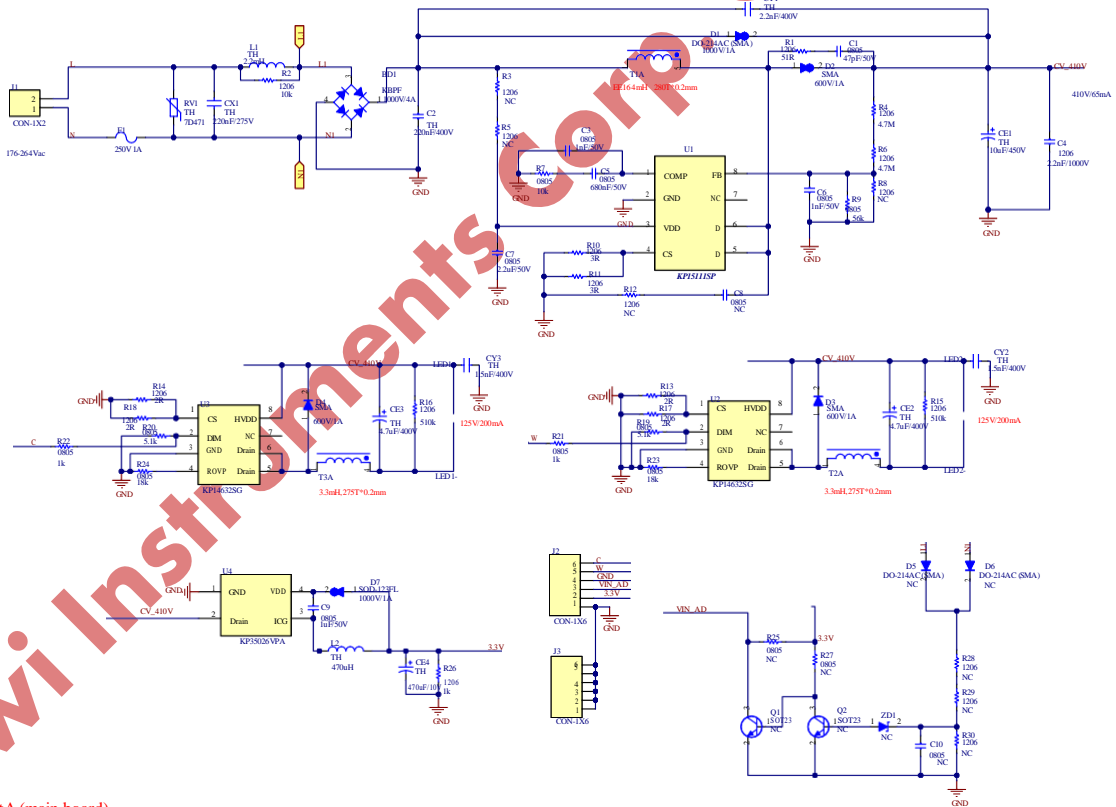
Note: The table above shows the minimum acceptable performance of the design. Actual performance is listed in the results section.

Demo Board of KP1511X+KP14632+KP35026_D02_REV1.0

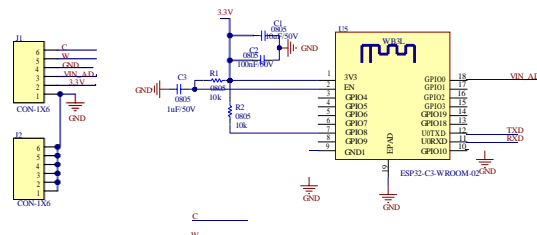


Board Size (in mm): Diameter = 79

Schematic

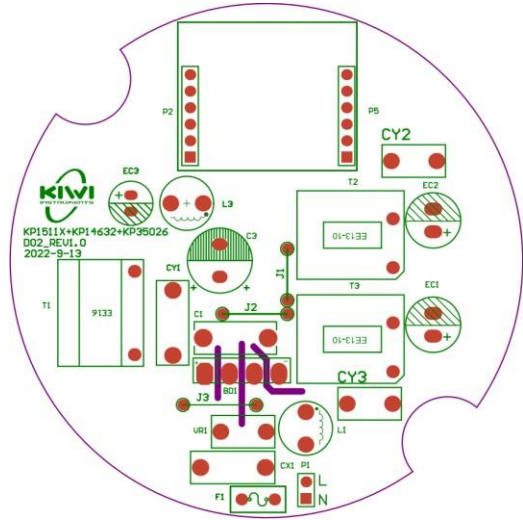


PartA (main board)
PartB (bluetooth module)



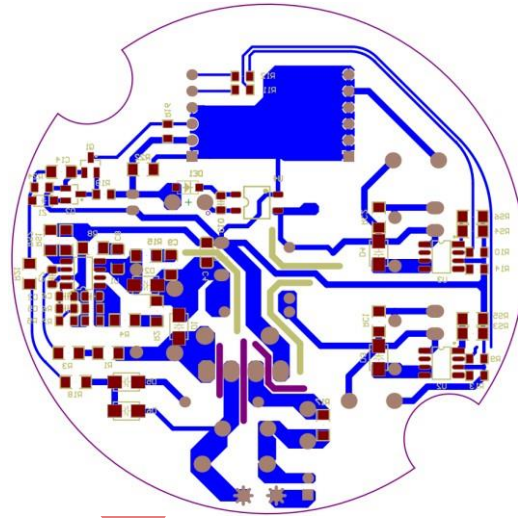
Printed Circuit Board Layout

D02A-Top Layer



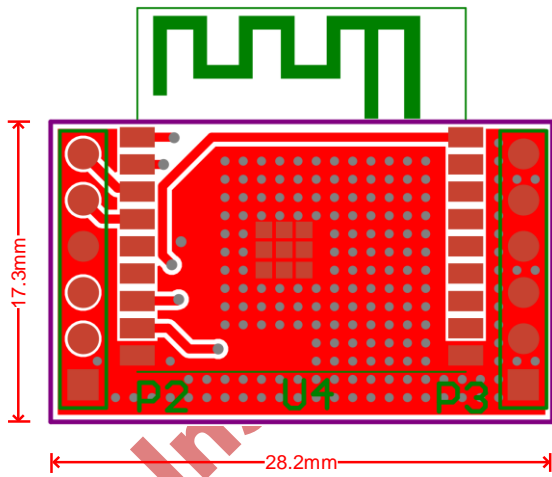
79mm

D02A-Bottom Layer



79mm

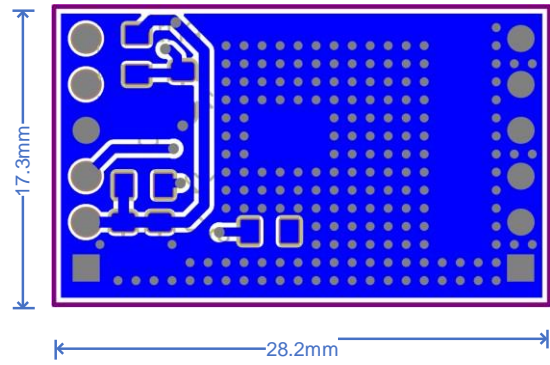
D02B-Top Layer



17.3mm

28.2mm

D02B-Bottom Layer



17.3mm

28.2mm



**0.1%~100% Dimming LED Ceiling Driver with
KP15111+KP14632+KP35026**

Bill of Material

Part A

No.	Designator	Value	Description	Package	Manufacturer	Part Number
1	BD1	1000V/4A	BRD 4A 1000V 1.1V	KBPF	Taiwan Semiconductor	KBPF407G
2	C1	47pF/50V	Ceramic Cap 50V ±5% NPO	0805	WE	885012007055
3	C2	220nF/400V	CBB 400Vdc 12*6*12.5 P10	TH	STE	B22G224JN1B012 0125060EOZ
4	C3, C6	1nF/50V	Ceramic Cap 50V ±5% NPO	0805	WE	885012007063
5	C4	2.2nF/1000V	Ceramic Cap 1000V ±10% X7R	1206	WE	885342208019
6	C5	680nF/50V	Ceramic Cap 50V ±10% X7R	0805	YAGEO	CC0805KKX7R9B B684
7	C7	2.2µF/50V	Ceramic Cap 50V ±10% X7R	0805	YAGEO	CC0805KKX7R9B B225
8	C9	1µF/50V	Ceramic Cap 50V ±10% X7R	0805	WE	885012207103
9	CE1	10µF/450V	Electrolytic Cap 450V 10*11 P5.0	TH	Ymin	KCXE1102W100M F
10	CE2, CE3	4.7µF/400V	Electrolytic Cap 400V 8*12 P3.5	TH	AISHI	EWH2GM4R7F12 OT
11	CE4	470µF/10V	Solid capacitor 10V 6.3*11 P2.5	TH	AISHI	SPZ1AM471E08O 00RAXXX
12	CX1	220nF/275V	X2 Capacitor 275Vac 13*8*14 P10	TH	WE	890324023028CS
13	CY1	2.2nF/400V	Y1 Capacitor 400Vac ±10% T5 P10	TH	STE	Q09F1D222MN0B 0SON0
14	CY2, CY3	1.5nF/400V	Y1 Capacitor 400Vac ±10% T5 P10	TH	STE	Q08F1D152MN0B 0SON0
15	D1	1000V/1A	DIO FRD 1A 1000V 1.1V	DO-214AC (SMA)	MDD	M7
16	D2, D3, D4	600V/1A	DIO FRD 1A 600V 35nS 1.7V	SMA	MDD	ES1J
17	D7	1000V/1A	DIO FRD 1A 1000V 500nS 1.3V	SOD-123FL	DIYI	F7
18	F1	250V 1A	Fuse 250V 1A	2410	AEM	MF2410F1.000TM
19	J1	/	1*2 2.00mm Straight Pin Header	TH	GUANGDONGX INGKUN	X4621WV- 1*02IC28D40
20	J2, J3	/	1*6 2.00mm Straight Pin Header	TH	GUANGDONGX INGKUN	X4621WV- 1*06IC28D40
21	L1	2.2mH	Inductor Isat 0.35A Rdc 4.73Ω 8*9.5	TH	WE	7447720222
22	L2	470µH	Inductor Isat 0.31A Rdc 1.68Ω 6*8	TH	FH	VLU0608-471KB
23	R1	51R	Chip Resistor ±1% 1/4W	1206	FH	RS-06K51R0FT
24	R2	10k	Chip Resistor ±1% 1/4W	1206	FH	RS-06K1002FT
26	R4, R6	4.7M	Chip Resistor ±1% 1/4W	1206	FH	RS-06K1004FT
27	R7	10k	Chip Resistor ±1% 1/8W	0805	FH	RS-05K1002FT
28	R9	56k	Chip Resistor ±1% 1/8W	0805	FH	RS-05K1202FT
29	R10, R11	3R	Chip Resistor ±1% 1/4W	1206	FH	RS-06L3R00FT
30	R13, R14, R17, R18	2R	Chip Resistor ±1% 1/4W	1206	FH	RS-06L2R00FT
31	R15, R16	510k	Chip Resistor ±1% 1/4W	1206	FH	RS-06K5103FT
32	R19, R20	5.1k	Chip Resistor ±1% 1/8W	0805	FH	RS-05K5101FT
33	R21, R22	1k	Chip Resistor ±1% 1/8W	0805	FH	RS-05K1001FT
34	R23, R24	18k	Chip Resistor ±1% 1/8W	0805	FH	RS-05K1802FT
35	R26	1k	Chip Resistor ±1% 1/4W	1206	FH	RS-06K1001FT
36	RV1	7D471	VARISTOR 300VAC 35J 1200A	TH	WE	820573011
37	T1	4mH	EE16, N1=0.2mm*1P*280T	ANY	/	/
38	T2, T3	3.3mH	EE13, N1=0.2mm*1P*275T	ANY	/	/
39	U1	/	High Efficiency QR Boost PFC Constant Voltage Power Switch	SOP8	KIWI	KP15111
40	U2, U3	/	High Accuracy, Deep Dimming Constant Current LED Power Switch	SOP8	KIWI	KP14632



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41	U4	/	Low Cost Fast Dynamic Response Non-isolated PWM Power Switch	SOP4	KIWI	KP35026
42	ZD1	15V	Diode Zener 15V 2% 200mW	SOD-323	PANJIT	BZT52-B15S

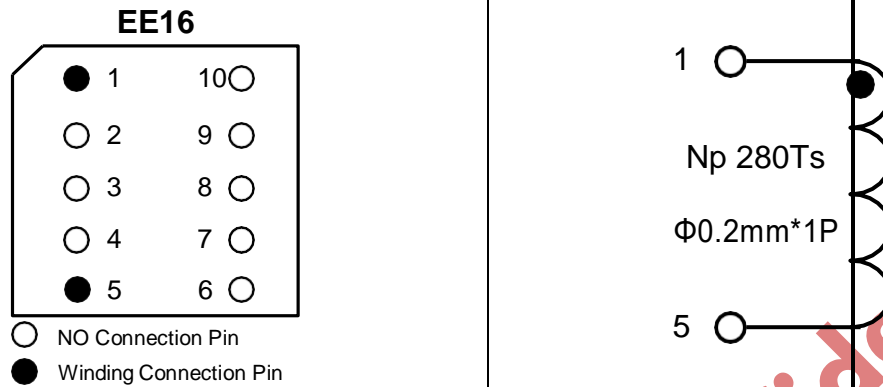
Part B

No.	Designator	Value	Description	Package	Manufacturer	Part Number
1	C1	10uF/50V	Ceramic Cap 50V ±10% X5R	0805	Murata	GRM21BR61H106 KE43L
2	C2	100nF/50V	Ceramic Cap 50V ±10% X7R	0805	WE	85012207098
3	C3	1uF/50V	Ceramic Cap 50V ±10% X7R	0805	WE	885012207103
4	J1, J2	/	1*6 2.00mm Straight Pin Header	TH	GUANGDONGX INGKUN	X4621WV- 1*06IC28D40
5	R1, R2	10k	Chip Resistor ±1% 1/8W	0805	FH	RS-05K1002FT
6	U5	/	ESP32-C3-WROOM-02	WB3L	ESPRESSIF	/

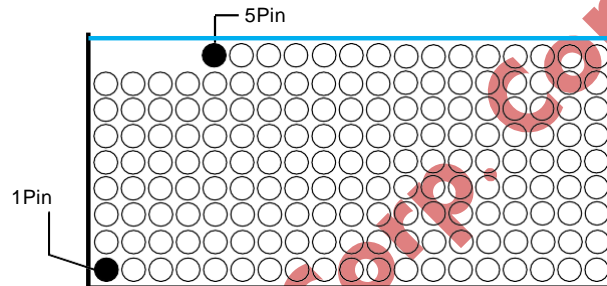
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Transformer Manufacture Guide---T1

1. Electrical Diagram



2. Winding Diagram



3. Winding Order

Number	Winding	Layer	Start	End	Wire Size	Turns	Note
1	N1	Primary	1	5	0.2mm*1P	280T	

4. Electrical Specification

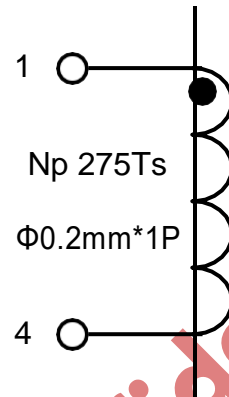
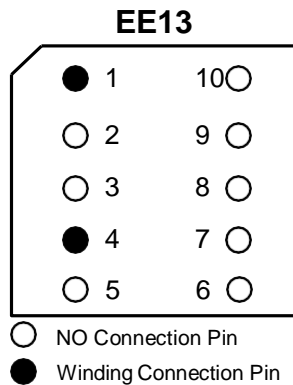
Items	Test Condition	Test Pin	Specification
Primary Inductance	Measured at 40kHz, 1.0 VRMS	Pins 1 - 5, all other windings open	4mH ± 5%
DC Resistance	Measured at 40kHz, 1.0 VRMS	Pins 1 - 5	4.6Ω Max

5. Transformer BOM

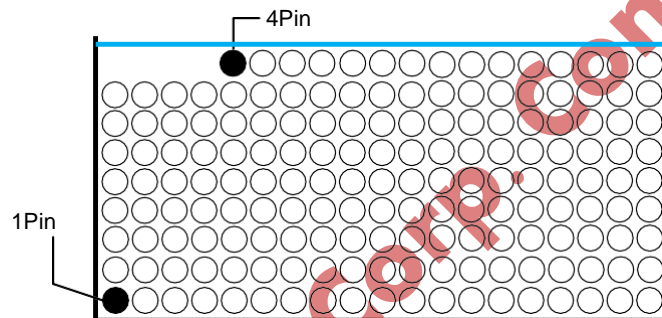
Items	Description
1	Core: EE16, AE=19.2mm ²
2	Bobbin: EE16, 5+5 Pin
3	Wire: Φ0.2mm, 2UEW, Class B
4	Tape: 10mm(W)×0.06mm (TH)

Transformer Manufacture Guide---T2&T3

1. Electrical Diagram



2. Winding Diagram



3. Winding Order

Number	Winding	Layer	Start	End	Wire Size	Turns	Note
1	N1	Primary	1	4	0.2mm*1P	275T	

4. Electrical Specification

Items	Test Condition	Test Pin	Specification
Primary Inductance	Measured at 40kHz, 1.0 VRMS	Pins 1 - 4, all other windings open	3.3mH ± 5%
DC Resistance	Measured at 40kHz, 1.0 VRMS	Pins 1 - 4	4.5Ω Max

5. Transformer BOM

Items	Description
1	Core: EE13, AE=17.1mm ²
2	Bobbin: EE13, 5+5 Pin
3	Wire: Φ0.2mm, 2UEW, Class B
4	Tape: 8mm(W)×0.06mm (TH)

Test Result

1. Steady State Characteristics

1.1 Efficiency, PF and THD

Test Conditions: Input: 176~264Vac; Output: 125V&70V/0.2A.

Standard: Eff>90%, PF>0.9, THD<20% @176~264Vac & 125V/0.2A

Result: Pass

Vo(V)	Vin(V)	F(Hz)	PF	THD(%)	Pin(W)	Io(mA)	Eff(%)
125	176	50	0.972	13	26.44	190.6	90.11
	198	50	0.964	13.9	26.34	190.6	90.45
	220	50	0.953	14.9	26.26	190.3	90.58
	240	50	0.942	15.8	26.21	190.2	90.71
	264	50	0.924	17.1	26.16	190.2	90.88
Vo(V)	Vin(V)	F(Hz)	PF	THD(%)	Pin(W)	Io(mA)	Eff(%)
270	176	50	0.952	15.36	15.36	191.1	87.09
	198	50	0.932	18.26	15.33	191.1	87.26
	220	50	0.912	19.29	15.28	191	87.5
	240	50	0.891	19.94	15.24	190.8	87.64
	264	50	0.86	20.54	15.21	190.8	87.81

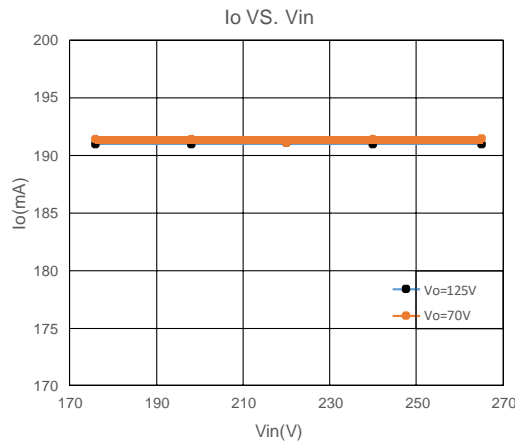
1.2 Line Regulation

Test Conditions: Input: 176~264Vac; Output: 125V&70V/0.2A.

Standard: Line Regulation < $\pm 2.5\%$

Result: Pass

Vin(V)		176	198	220	240	264	Line Reg
Io(mA)	Vo=125V	191	191	191.1	191	191	0.05%
	Vo=70V	191.4	191.4	191.4	191.5	191.4	0.05%



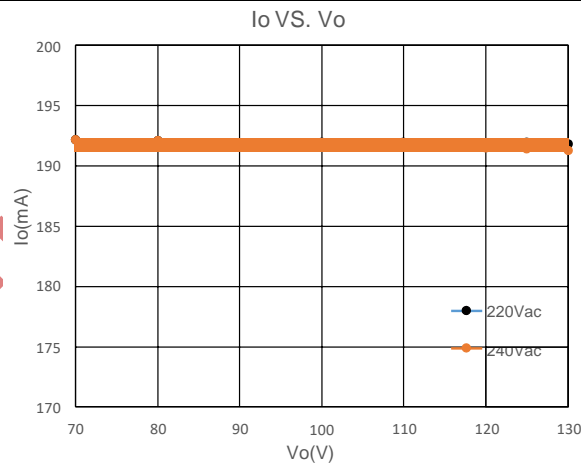
1.3 Load Regulation

Test Conditions: Input: 220&240Vac; Output: 125V/0.2A.

Standard: Load Regulation $\pm 2.5\%$

Result: Pass

Vin(V)	Io(mA)								Load Reg
	Vo=70V	Vo=80V	Vo=90V	Vo=100V	Vo=110V	Vo=120V	Vo=125V	Vo=130V	
220	192.2	192.1	191.9	192	192	191.9	192	191.8	0.21%
240	192.2	192.1	191.9	191.8	191.6	191.5	191.4	191.3	0.47%



1.4 Harmonic Current

Test Conditions: Input: 220Vac; Output: 125V&70V/0.2A.

Standard: IEC61000-3-2 Class C

Result: Pass



**0.1%~100% Dimming LED Ceiling Driver with
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Harmonic Current Limit Value and Actual Value @125V/0.2A&100% duty

Harmonic NO.	Limit (mA)	Actual Value(mA)	Pass Fail	Harmonic NO.	Limit (mA)	Actual Value(mA)	Pass Fail
Total	25.3	18.85	Pass	2	2.53	0.25	Pass
3	35.86	17.46	Pass	5	12.65	5.19	Pass
7	8.86	2.28	Pass	9	6.33	1.52	Pass
11	3.81	1.41	Pass	13	3.81	1.41	Pass
15	3.81	1.27	Pass	17	3.81	1.01	Pass
19	3.81	0.63	Pass	21	3.81	1.14	Pass
23	3.81	1.52	Pass	25	3.81	1.27	Pass
27	3.81	0.51	Pass	29	3.81	0.25	Pass

Harmonic Current Limit Value and Actual Value @125V/0.2A&80% duty

Harmonic NO.	Limit (mA)	Actual Value(mA)	Pass Fail	Harmonic NO.	Limit (mA)	Actual Value(mA)	Pass Fail
Total	N/A	None	Pass	2	2.53	0.25	Pass
3	35.86	18.98	Pass	5	12.65	4.93	Pass
7	8.86	2.28	Pass	9	6.33	1.91	Pass
11	3.81	1.77	Pass	13	3.81	1.77	Pass
15	3.81	1.39	Pass	17	3.81	1.01	Pass
19	3.81	1.52	Pass	21	3.81	2.28	Pass
23	3.81	1.41	Pass	25	3.81	0.63	Pass
27	3.81	0.38	Pass	29	3.81	0.25	Pass

Harmonic Current Limit Value and Actual Value @125V/0.2A&60% duty

Harmonic NO.	Limit (mA)	Actual Value(mA)	Pass Fail	Harmonic NO.	Limit (mA)	Actual Value(mA)	Pass Fail
Total	N/A	None	Pass	2	2.53	0.51	Pass
3	35.86	19.73	Pass	5	12.65	4.05	Pass
7	8.86	2.66	Pass	9	6.33	2.78	Pass
11	3.81	2.53	Pass	13	3.81	2.41	Pass
15	3.81	1.52	Pass	17	3.81	2.02	Pass
19	3.81	2.53	Pass	21	3.81	1.77	Pass
23	3.81	0.51	Pass	25	3.81	0.63	Pass
27	3.81	0.25	Pass	29	3.81	0.76	Pass



**0.1%~100% Dimming LED Ceiling Driver with
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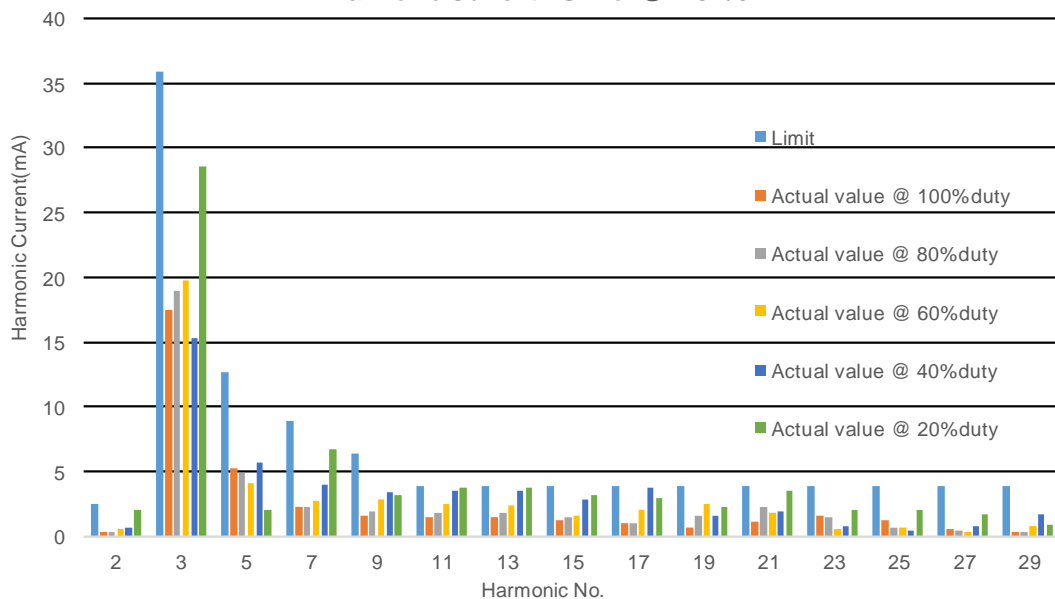
Harmonic Current Limit Value and Actual Value @125V/0.2A&40%duty

Harmonic NO.	Limit (mA)	Actual Value(mA)	Pass Fail	Harmonic NO.	Limit (mA)	Actual Value(mA)	Pass Fail
Total	N/A	None	Pass	2	2.53	0.63	Pass
3	35.86	15.31	Pass	5	12.65	5.69	Pass
7	8.86	3.92	Pass	9	6.33	3.42	Pass
11	3.81	3.54	Pass	13	3.81	3.54	Pass
15	3.81	2.78	Pass	17	3.81	3.75	Pass
19	3.81	1.52	Pass	21	3.81	1.91	Pass
23	3.81	0.76	Pass	25	3.81	0.38	Pass
27	3.81	0.76	Pass	29	3.81	1.64	Pass

Harmonic Current Limit Value and Actual Value @125V/0.2A&20%duty

Harmonic NO.	Limit (mA)	Actual Value(mA)	Pass Fail	Harmonic NO.	Limit (mA)	Actual Value(mA)	Pass Fail
Total	N/A	None	Pass	2	2.53	2.02	Pass
3	35.86	28.59	Pass	5	12.65	2.02	Pass
7	8.86	6.68	Pass	9	6.33	3.16	Pass
11	3.81	3.75	Pass	13	3.81	3.75	Pass
15	3.81	3.16	Pass	17	3.81	2.91	Pass
19	3.81	2.28	Pass	21	3.81	3.54	Pass
23	3.81	2.02	Pass	25	3.81	2.02	Pass
27	3.81	1.64	Pass	29	3.81	0.89	Pass

Harmonic Current VS. No. @125V/0.2A



Harmonic Current Limit Value and Actual Value @70V/0.2A&100% duty

Harmonic NO.	Limit (mA)	Actual Value(mA)	Pass Fail	Harmonic NO.	Limit (mA)	Actual Value(mA)	Pass Fail
Total	15.34	12.89	Pass	2	1.534	0.23	Pass
3	20.96	11.66	Pass	5	7.67	2.61	Pass
7	5.37	1.61	Pass	9	3.84	1.69	Pass
11	2.30	1.84	Pass	13	2.30	1.46	Pass
15	2.30	0.84	Pass	17	2.30	1.46	Pass
19	2.30	1.84	Pass	21	2.30	0.61	Pass
23	2.30	0.15	Pass	25	2.30	0.17	Pass
27	2.30	0.23	Pass	29	2.30	0.61	Pass

1.5 Output Current Ripple

Test Conditions: Input: 176~264Vac; Output: 125V/0.2A.

Standard: Pk-pk Ripple <30%

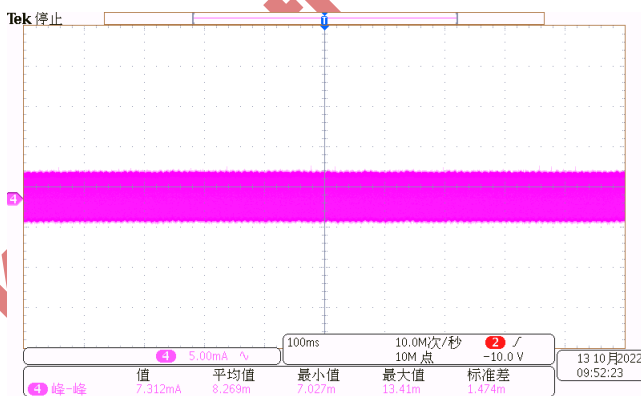
Result: Pass

Vin(V)	F(Hz)	Io(mA)	Current Ripple Ipeak-peak(mA)	Pk-pk Ripple (%)
176	50	190.1	7.894	4.15%
198	50	190.1	7.027	3.70%
220	50	190	7.312	3.85%
240	50	190	7.285	3.83%
264	50	189.9	7.034	3.70%

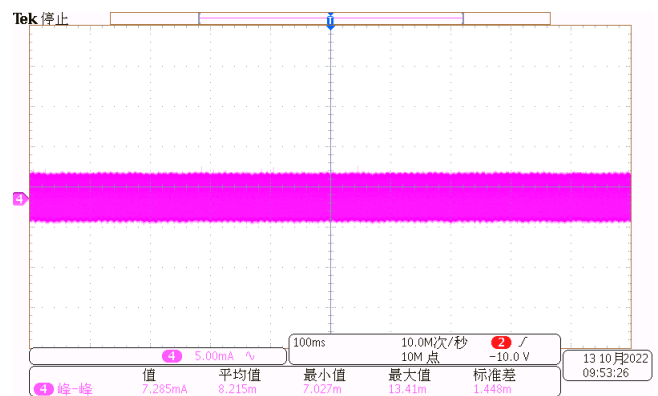
Waveforms:

Test Condition: 220Vac/50Hz Input, 125V/0.2A Output

Test Condition: 240Vac/50Hz Input, 125V/0.2A Output



Comments: Ipeak-peak=7.312mA



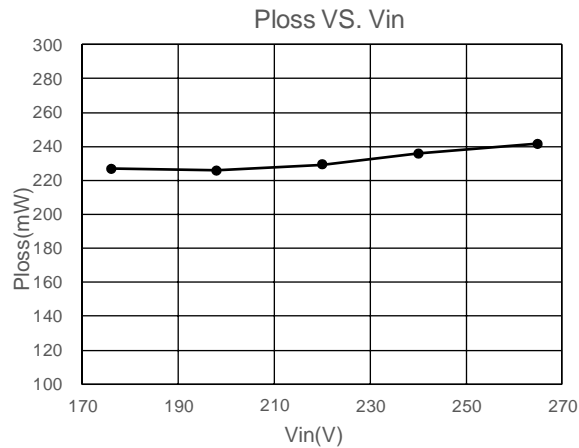
Comments: Ipeak-peak=7.285mA

1.6 Standby Power

Test Conditions: Input: 176~264Vac; Output: Dim off.

Standard: $P_{loss} < 0.5W$

Result: Pass

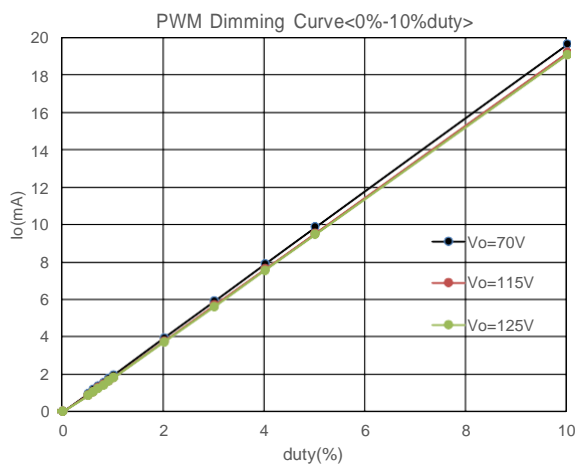
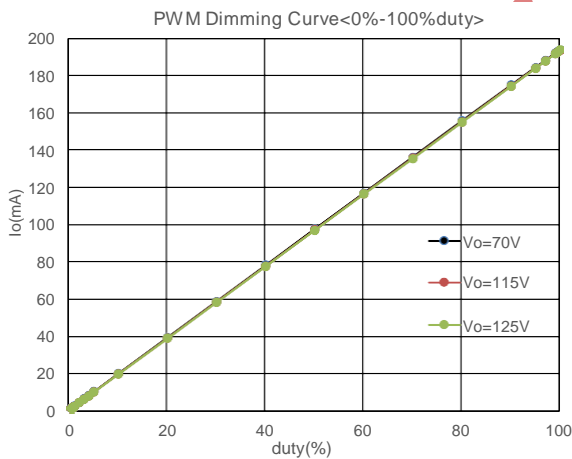


1.7 Dimming Curve

Test Conditions: Input: 220Vac; Output: 70V, 115V, 125V & PWM Dimming.

Standard: High linearity of dimming curve

Result: Pass



2 Dynamic Characteristics

2.1 Start-up Characteristics

Test Conditions: Input: 176~264Vac; Output: 125V/0.2A.

Standard: No flicker and no overshoot

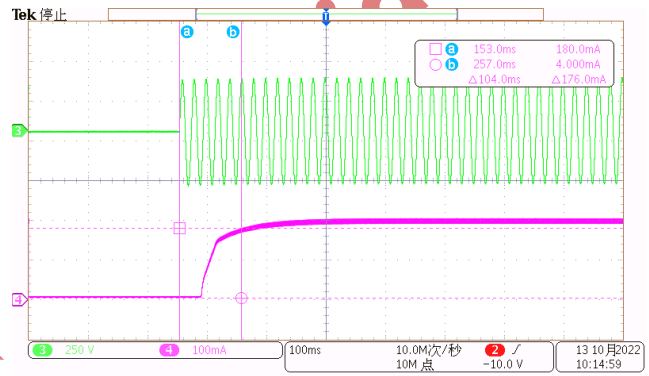
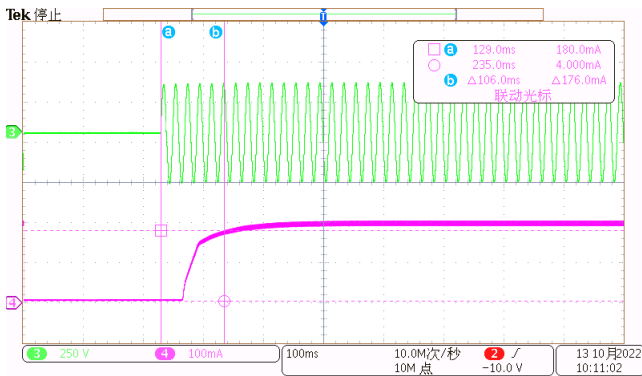
Result: Pass

Vin(V)	F(Hz)	Io(A)	AC to Io reach 90%(ms)
176	50	0.2	106
198	50	0.2	106
220	50	0.2	106
240	50	0.2	104
264	50	0.2	102

Waveforms:

Test Condition: 220Vac/50Hz Input, 125V/0.2A Output

Test Condition: 240Vac/50Hz Input, 125V/0.2A Output



(CH3: Vin; CH4: Io)

(CH3: Vin; CH4: Io)

Comments: No flicker and no overshoot, Current rise time 106ms

Comments: No flicker and no overshoot, Current rise time 104ms

2.2 Power off Characteristics

Test Conditions: Input: 176~264Vac; Output: 125V/0.2A.

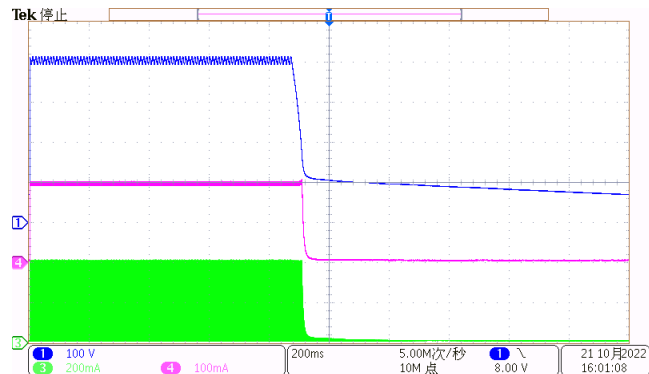
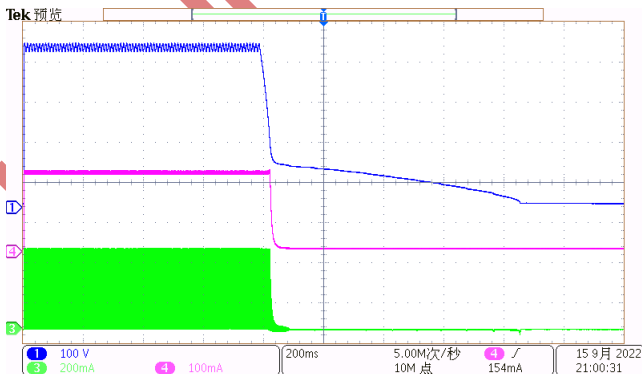
Standard: No flicker and no overshoot

Result: Pass

Waveforms:

Test Condition: 220Vac/50Hz Input, 125V/0.2A Output

Test Condition: 240Vac/50Hz Input, 125V/0.2A Output



(CH1: Vbus; CH3: IL; CH4: Io)

(CH1: Vbus; CH3: IL; CH4: Io)

Comments: No flicker and no overshoot

Comments: No flicker and no overshoot

2.3 Dim on/off Characteristics

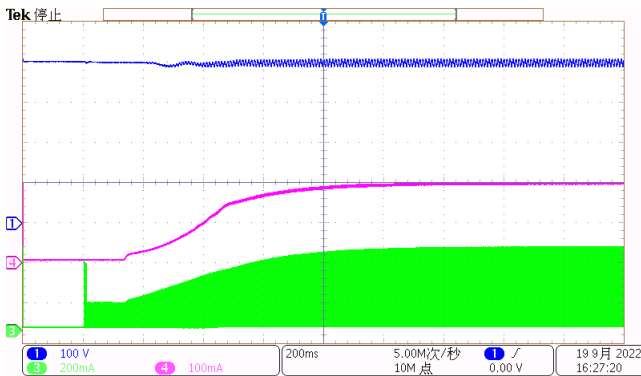
Test Conditions: Input: 176~264Vac; Output: 125V/0.2A.

Standard: No flicker and no overshoot

Result: Pass

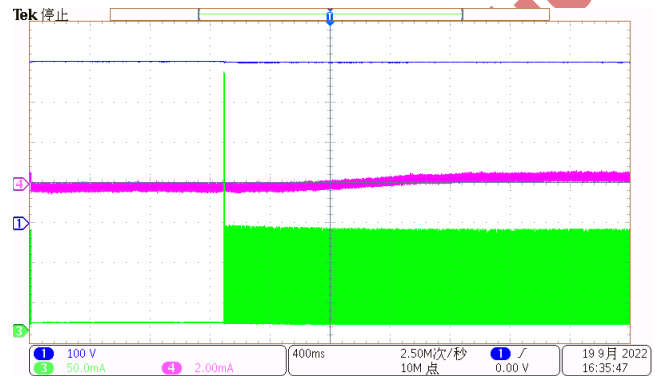
Waveforms:

Test Condition: 220Vac/50Hz Input, 100%duty



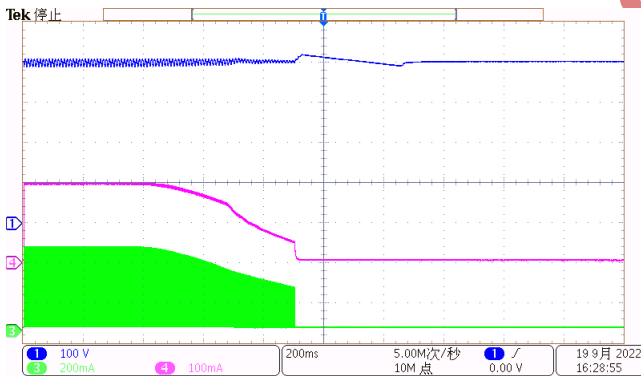
(CH1:Vbus; CH3: IL; CH4: Io)
Comments: Dim on OK

Test Condition: 220Vac/50Hz Input, 1% duty



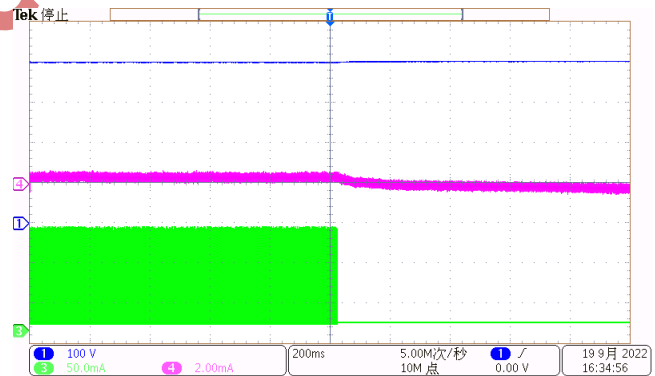
(CH1:Vbus; CH3: IL; CH4: Io)
Comments: Dim on OK

Test Condition: 220Vac/50Hz Input, 100%duty



(CH1:Vbus; CH3: IL; CH4: Io)
Comments: Dim off OK

Test Condition: 220Vac/50Hz Input, 1% duty



(CH1:Vbus; CH3: IL; CH4: Io)
Comments: Dim off OK

3 Reliability Testing

3.1 Output Short Protection

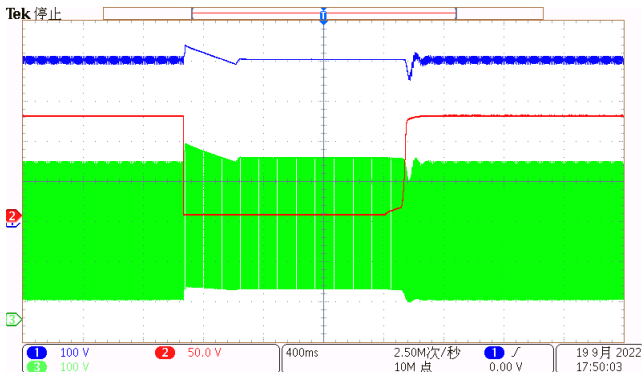
Test Conditions: Input: 176~264Vac; Output: 125V/0.2A.

Standard: Output is latched and no component damaged.

Result: Pass

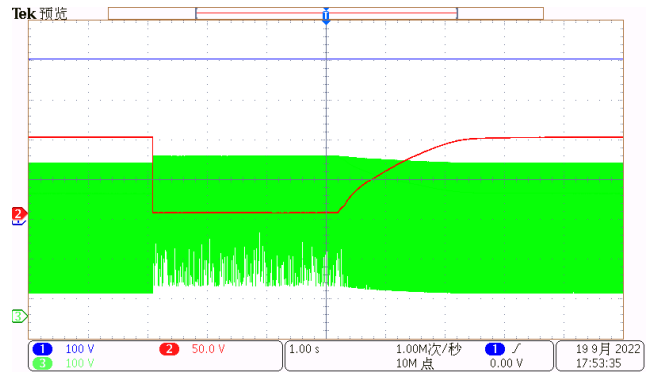
Waveforms:

Test Condition: 220Vac/50Hz Input, 100% duty



(CH1:Vbus; CH2: Vo; CH3: Vds)
Comments: OK

Test Condition: 220Vac/50Hz Input, 1% duty



(CH1:Vbus; CH2: Vo; CH3: Vds)
Comments: OK

3.2 Open Load Protection

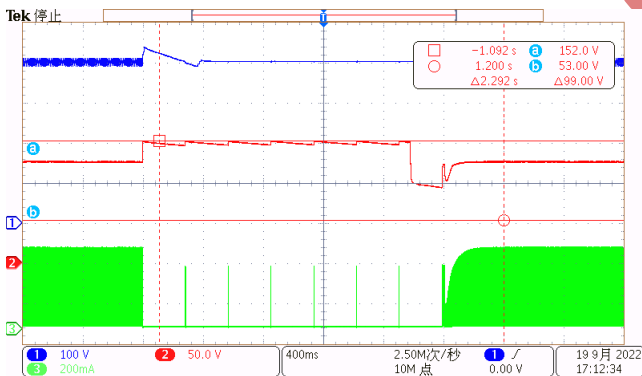
Test Conditions: Input: 176~264Vac; Output: 125V/0.2A.

Standard: output is latched and no component damaged.

Result: Pass

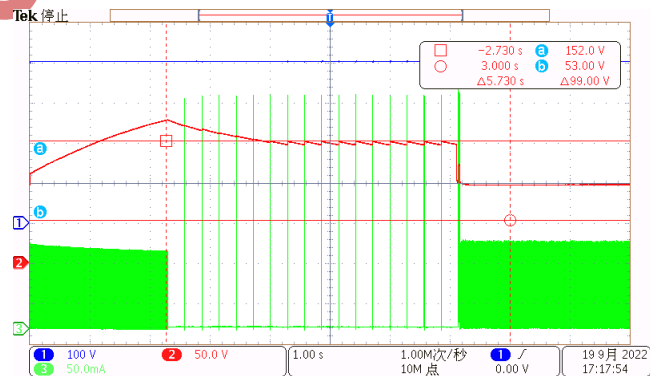
Waveforms:

Test Condition: 220Vac/50Hz Input, 100% duty



(CH1:Vbus; CH2: Vo; CH3: IL)
Comments: OK, Vo_peak=152V

Test Condition: 220Vac/50Hz Input, 1% duty



(CH1:Vbus; CH2: Vo; CH3: IL)
Comments: OK, Vo_peak=152V

3.3 Maximum Stress of PFC MOSFET

Test Conditions: Input: 176~264Vac; Output: 125V/0.2A.

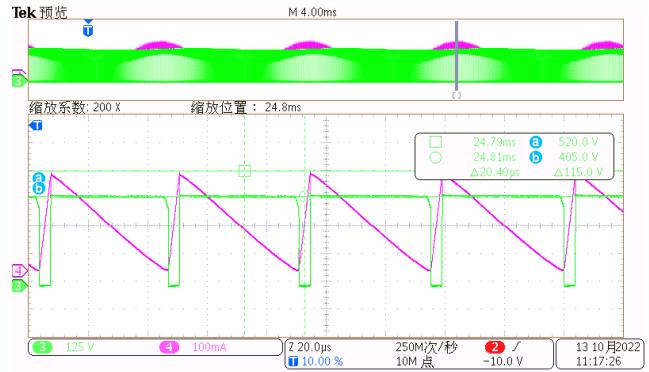
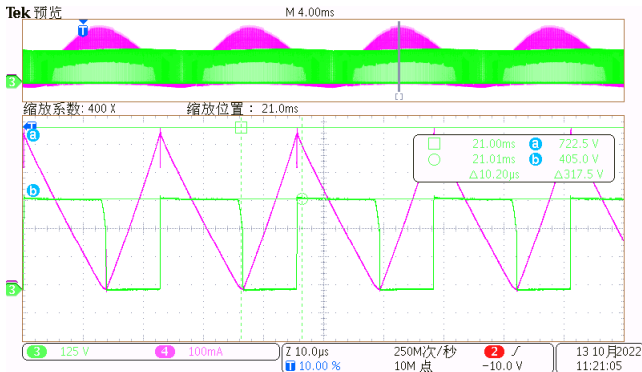
Standard: VDS_peak < 90% *Vdsmax

Result: Pass

Waveforms:

Test Condition: 176Vac/50Hz Input, 125V/0.2A Output

Test Condition: 264Vac/50Hz Input, 125V/0.2A Output



(CH3:VDS; CH4: IL)
 Comments: OK VDS_peak=405V, IL_peak=568mA

(CH3:VDS; CH4: IL)
 Comments: OK VDS_peak=405V, IL_peak=358mA

3.4 Maximum Stress of Buck MOSFET

Test Conditions: Input: 176~264Vac; Output: 125V/0.2A.

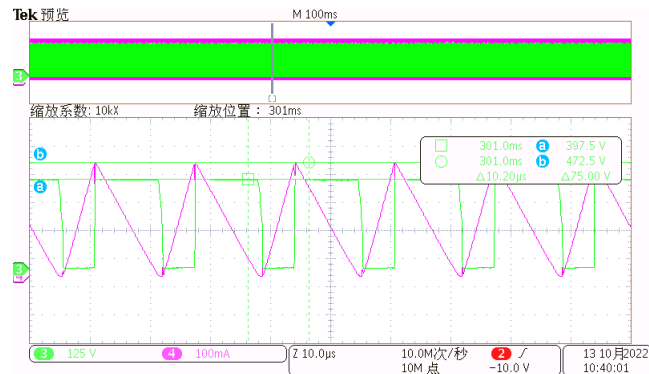
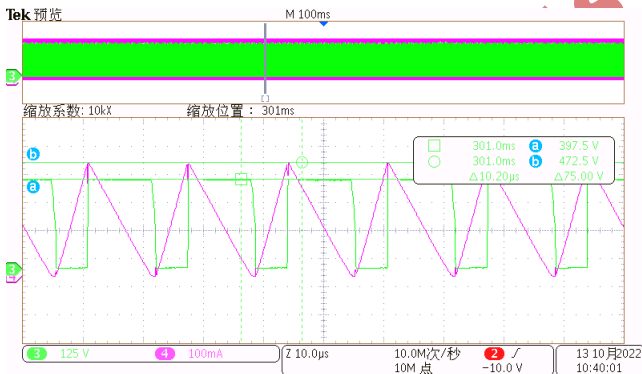
Standard: VDS_peak < 90% *Vdsmax

Result: Pass

Waveforms:

Test Condition: 220Vac/50Hz Input, 125V/0.2A Output

Test Condition: 264Vac/50Hz Input, 125V/0.2A Output



(CH3:VDS; CH4: IL)
 Comments: OK VDS_peak=397.5V, IL_peak=406mA

(CH3:VDS; CH4: IL)
 Comments: OK VDS_peak=412.5V, IL_peak=406mA

3.5 Maximum Stress of PFC Output Diode

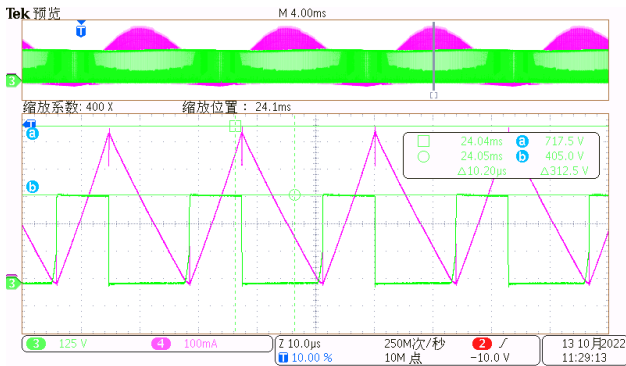
Test Conditions: Input: 176~264Vac; Output: 125V/0.2A; Diode: ES1J

Standard: VD_peak < 90% *VDmax

Result: Pass

Waveforms:

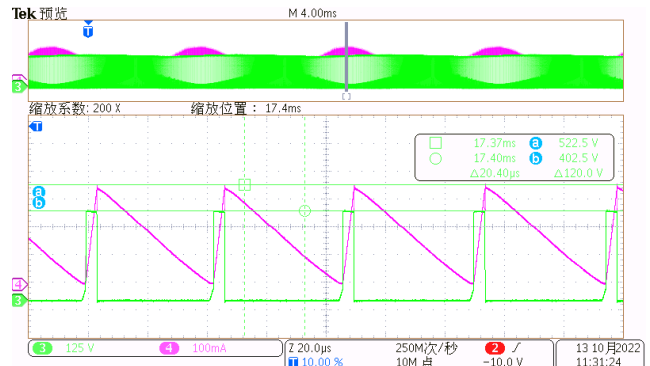
Test Condition: 176Vac/50Hz Input, 125V/0.2A Output



(CH3:VD; CH4: IL)

Comments: OK VD_peak=405V, IL_peak=564mA

Test Condition: 264Vac/50Hz Input, 125V/0.2A Output



(CH3:VD; CH4: IL)

Comments: OK VD_peak=402.5V, IL_peak=360mA

3.6 Maximum Stress of Buck Output Diode

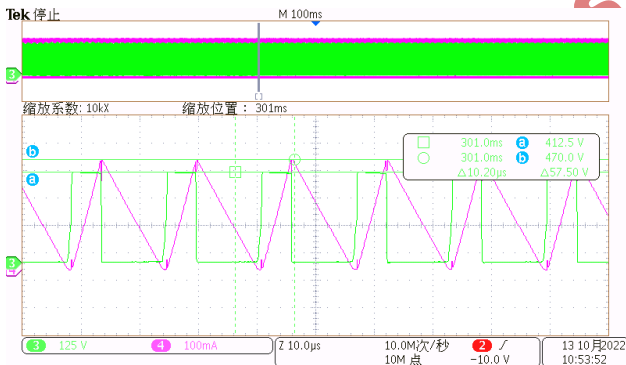
Test Conditions: Input: 176~264Vac; Output: 125V/0.2A; Diode: ES1J.

Standard: VD_peak < 90% *VDmax

Result: Pass

Waveforms:

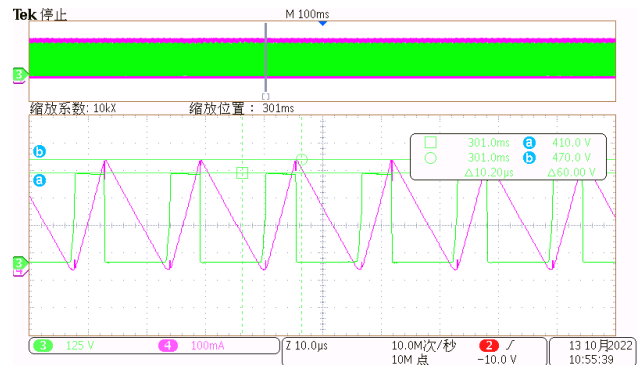
Test Condition: 220Vac/50Hz Input, 125V/0.2A Output



(CH3:VDS; CH4: IL)

Comments: OK VD_peak=412.5V, IL_peak=404mA

Test Condition: 264Vac/50Hz Input, 125V/0.2A Output



(CH3:VDS; CH4: IL)

Comments: OK VD_peak=410V, IL_peak=404mA

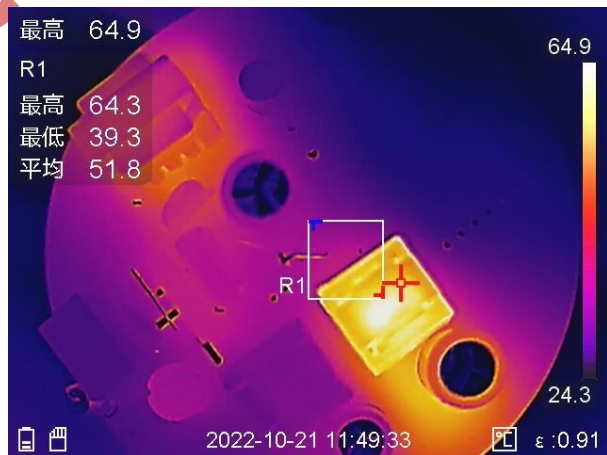
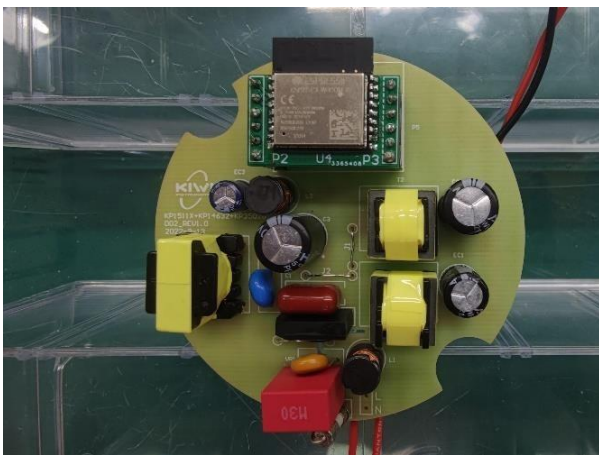
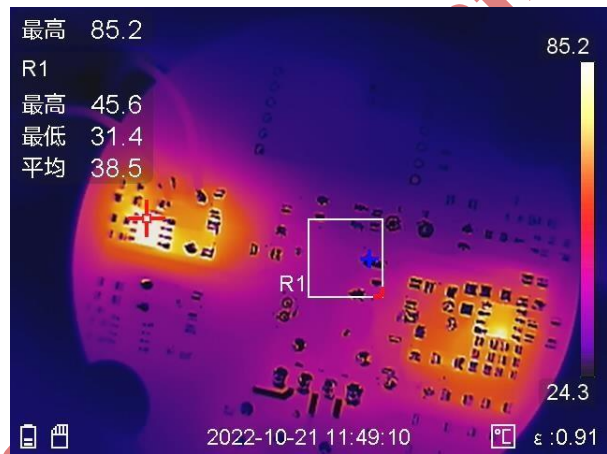
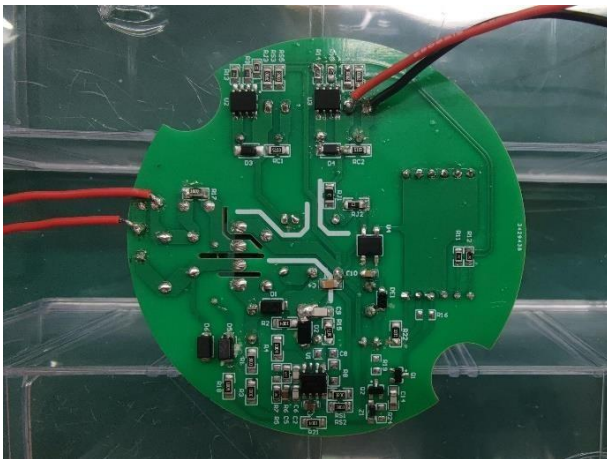
3.7 Thermal Test

Test Conditions: Input: 220Vac; Output: 125V/0.2A. Burn-in 0.5 Hour @ confined container and steady environment with no airflow, Ta is the temperature inside the cardboard box.

Standard: Final product will be cased and potted, the open frame thermal test data is only for reference.

Result: Pass

Test Condition: Input: 220Vac; Output: 125V/0.2A		
Ta=26.8°C		
	Tc(°C)	Trise(°C)
KP15111	71.1	44.3
KP14632	78.5	51.7
KP35026	56.3	29.5



3.8 EMC Test

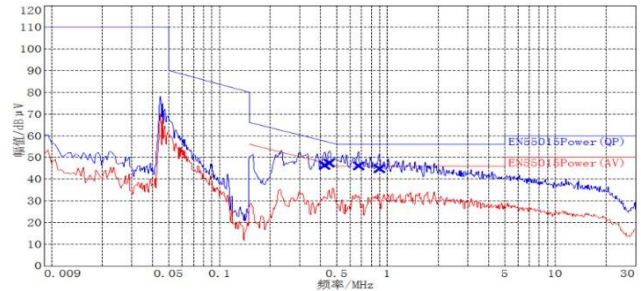
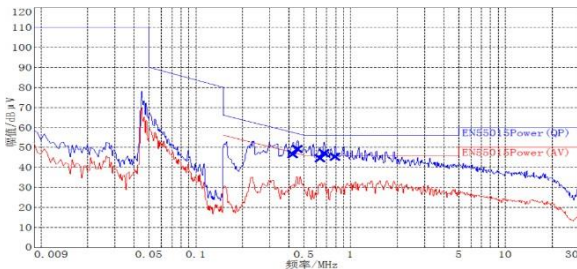
Test Conditions: Input: 220Vac; Output: 125V/0.2A.

Standard:

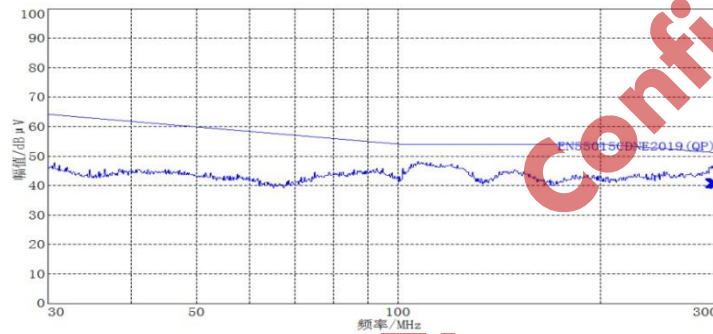
Standard	EN55015
Content	CE/CDN
Requirement	>6dB Margin

Result: Pass

Test Condition: Vin=220VAC/50Hz, CE



Test Condition: CDN



3.9 Surge Test

Test Conditions: Input: 220Vac; Output: 125V/0.2A.

Standard: >1000V

Result: Pass

Input Voltage (VAC)	Surge Level (V)	Injection Location	Injection Phase (°)	Test Result (Pass/Fail)
220Vac/50Hz	+1000	L to N	0	Pass
	+1000	L to N	90	Pass
	+1000	L to N	180	Pass
	+1000	L to N	270	Pass
	-1000	L to N	0	Pass
	-1000	L to N	90	Pass
	-1000	L to N	180	Pass
	-1000	L to N	270	Pass



0.1%~100% Dimming LED Ceiling Driver with KP15111+KP14632+KP35026

Test Result is classified as below:

A: Normal performance within limits specified by the manufacturer, requestor or purchaser;

B: Temporary loss of function or degradation of performance, which ceases after the disturbance ceases, and from which the equipment under test recovers its normal performance, without operation intervention;

C: Temporary loss of function or degradation of performance, the correction of which requires operator intervention;

D: Loss of function or degradation of performance which is not recoverable, owing to damage to hardware or software, or loss of data.

Test Result: A (A/B/C/D)

Test Setup Guide

1. Connect the “LED1+” and “LED1-” terminal to the positive and negative end of the warm LED load; connect the “LED2+” and “LED2-” terminal to the positive and negative end of the cold LED load.
2. Set the AC Power Source between 176VAC and 264VAC.
3. Connect the AC Power Source terminal to the “L” and “N” terminals on the Demo Board.
4. Turn on the AC Power Source to make system startup; and turn off the AC Power Source to make system shutdown.
5. The dimming program for Espressif modules is in the file “Dimming code_15111+14632+35026_D01_REV1.1_2022-11-08”.



Revision History

DATE	REV	DESCRIPTION
2022/11/20	1.0	First Release

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