



RoHS PARTS

请 承 认 书

SPECIFICATION FOR APPROVAL

CUSTOMER:

PROGRAM NO. : LED-00-87V-0.218A-002-R1-V0

ISSUE DATE: 2020/09/12

VERSION	Details	
V0	Initiated	
DESIGNED BY		CHECKED BY
LEE		
CUSTOMER APPROVED SIGNATURE:		
APPROVED DATE:		

FERRICS TECHNOLOGY CO., LIMITED

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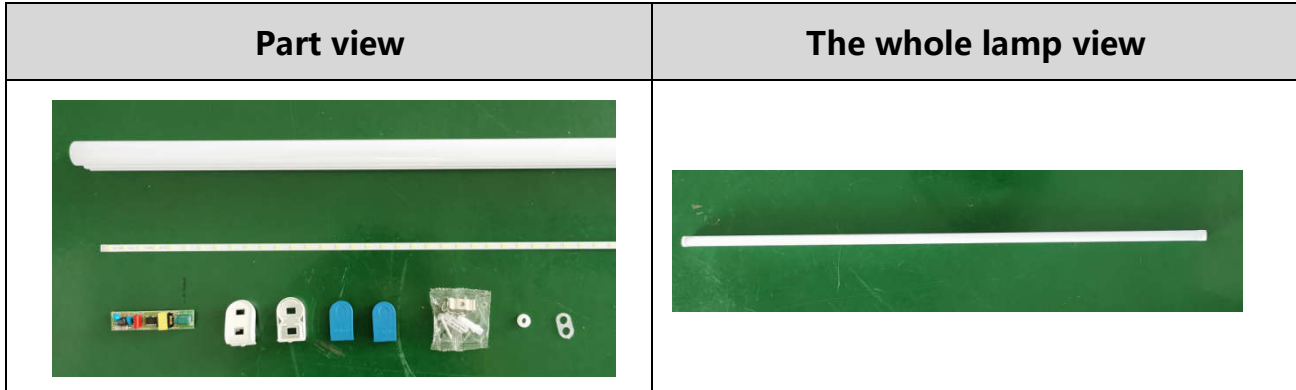
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LED-00-87V-0.218A-002-R1-V0

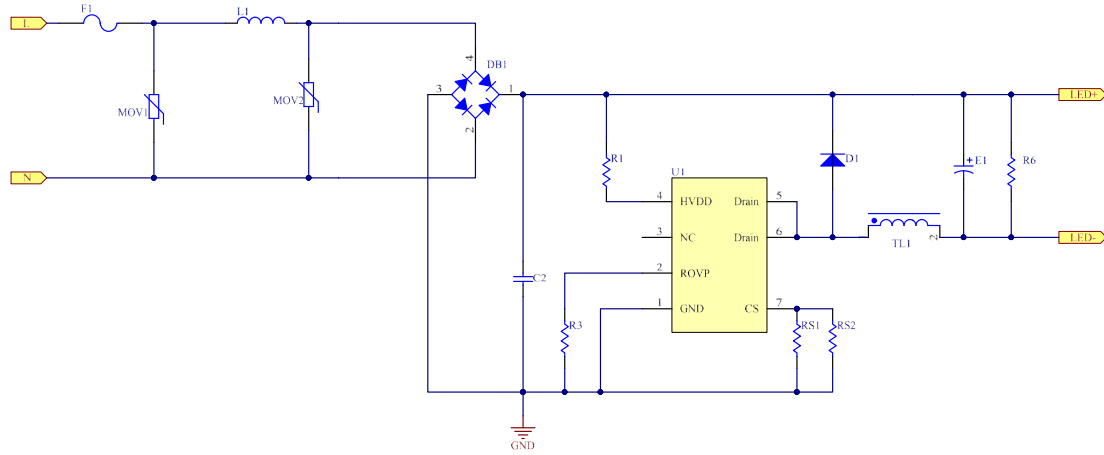
1. Photograph



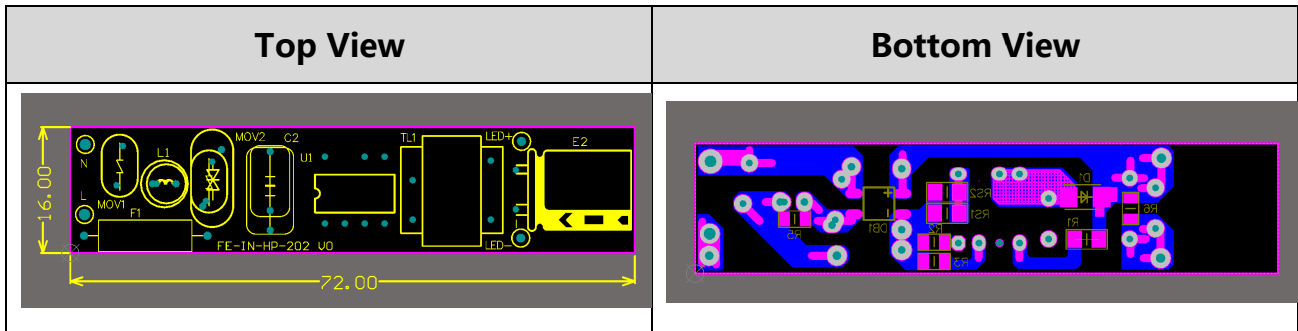
2. Input & Output Parameters

	Min	Normal	Max
Input Voltage(Vac)	170	230	420~440
Input Power(W)		20	
Output Voltage(Vdc)		87	
Output Current(mA)		218	
Efficiency		90%	
Surge			4KV

3. Schematic diagram



4. PCB layout



5. Test Reports

1) No load Output Voltage

AC input Voltage(Vac)	170Vac	230Vac	264Vac	300Vac	350Vac	440Vac
Output voltage(Vdc)	114	122	123	125	125	128

2) General Test

Input : AC input voltage is 170Vac,230Vac,264Vac,300Vac,350Vac,440Vac.

Load condition:LED-29S3P*3V LED.

Input Voltage	Load	Input Power (W)	PF	THD	Output Voltage (V)	Output Current (mA)	Eff (%)
170Vac	LED-29S3P* 3V LED	20.68	0.981		85.82	216	89.64%
230Vac		20.34	0.991	11.9	85.75	216	91.06%
264Vac		20.25	0.988		85.42	217	91.53%
300Vac		20.02	0.985		85.27	216	92.00%
350Vac		20.32	0.977		85.22	219	91.85%
440Vac		20.95	0.956		85.95	219	89.85%

3) Short-Circuit Test

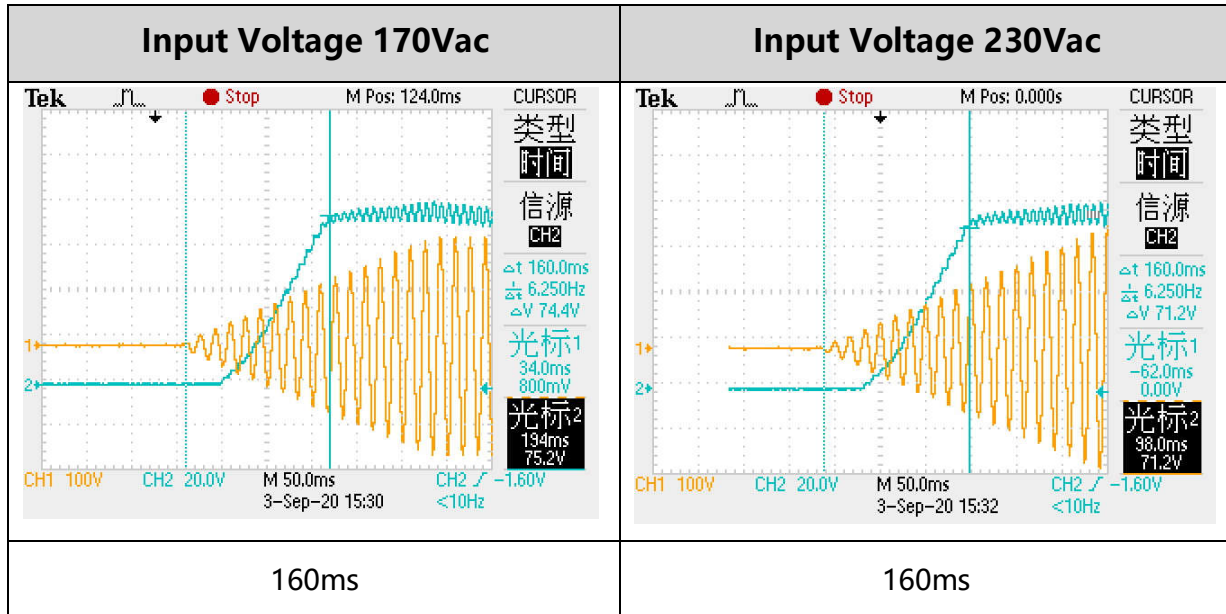
Input: AC170~440V; Output: short.

Test result: No components damaged, the demo board should be working when the short-circuit is removed.

AC input Voltage(Vac)	170Vac	230Vac	264Vac	300Vac	350Vac	440Vac
Output voltage(Vdc)	0.66	0.69	0.71	0.76	0.83	1.11

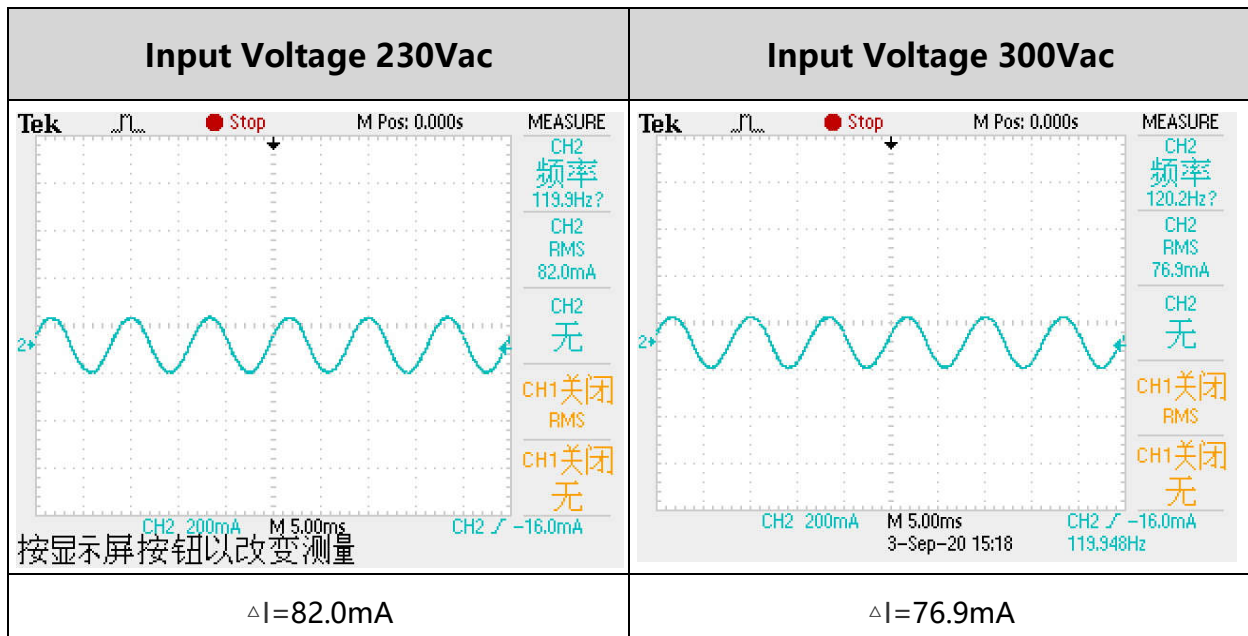
4) Start-up Time

Load condition: Full led load.



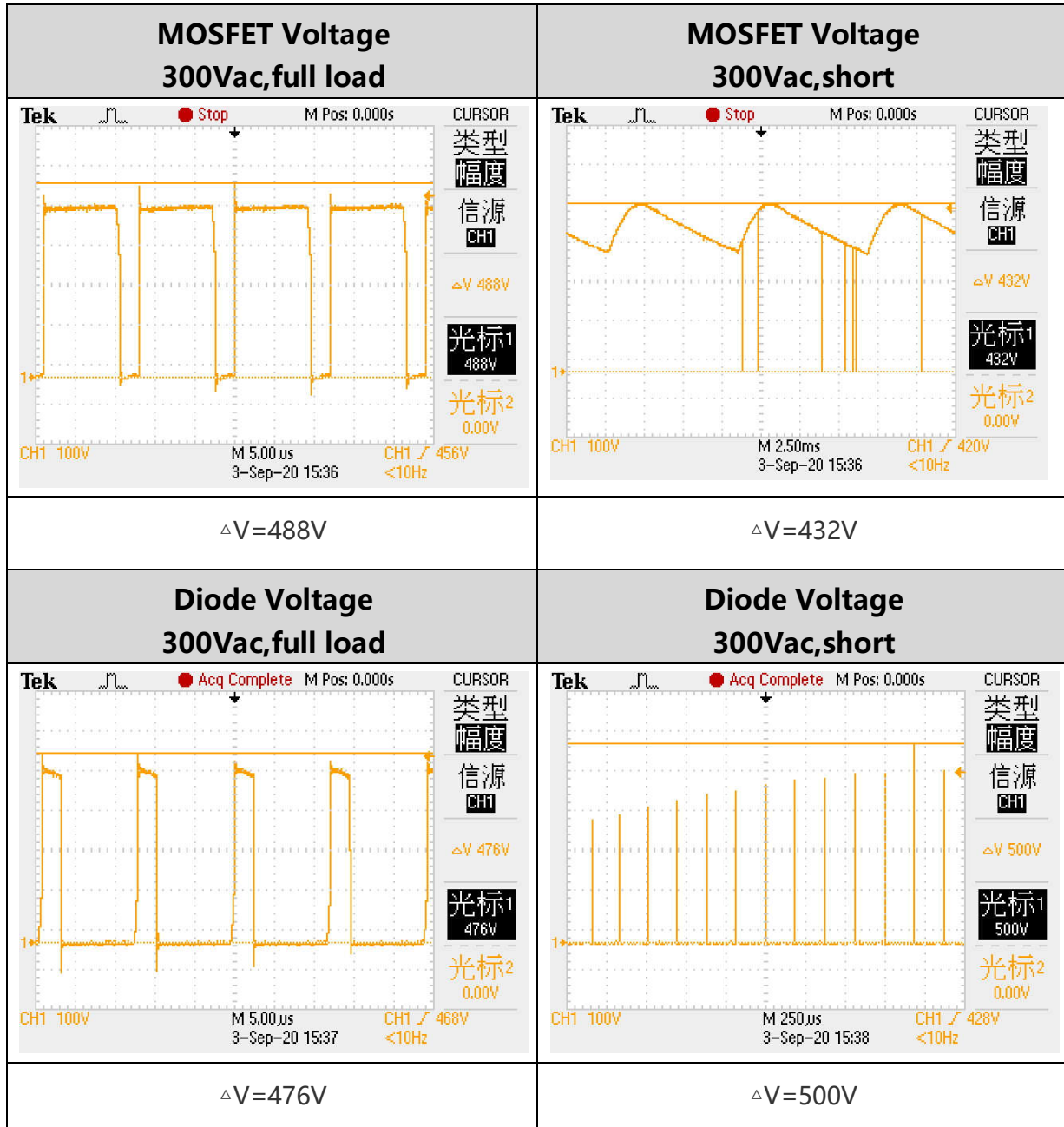
5) Ripple Current Test (RMS)

Load condition: Full led load.



6) Mosfet and DIODE Voltage Stress Test

Input voltage: 300Vac, Load condition: Full load/short



7) Temperature Test

Finished Tubelight, No wind environmental tests.

Vin:180Vac/230Vac/300Vac/440Vac.

Input Voltage	Vac	180	230	300	440
DB1	°C	87.9	80.6	76.1	80.8
D1	°C	91.6	89.6	91.9	101.1
F1	°C	99.6	82.8	70.8	68.4
L1	°C	95.5	81.9	72.9	74.5
C2	°C	84.1	80.4	78.1	81.9
U1	°C	101.6	98.3	98.8	112.9
TL1 Core	°C	93.8	93.9	95.2	102.8
TL1 Wire	°C	97.8	97.8	99.1	107.7
E1	°C	73.6	73.0	73.6	76.0
LED-	°C	69.2	70.2	69.4	70.2
LED-	°C	70.8	71.7	71.0	71.8
Ambient temperature	°C	28.9	27.8	29.1	28.7
Input Power	W	20.0	20.0	19.6	20.2

8) 4.0KV Surge Testing

The test conditions: 230Vac, 4KV, 30s.

Angel	Positive or Negative	times	Pass/Fail
0	+	5	Pass
0	-	5	Pass
90	+	5	Pass
90	-	5	Pass
180	+	5	Pass
180	-	5	Pass
270	+	5	Pass
270	-	5	Pass

9) Lumen Testing

Lightsource Test Report

Product Information

Product Number: 99484

CIE Colorimetric Parameters

Chromaticity coordinates: $x=0.3053$ $y=0.3251$ $u(u')=0.1942$ $v=0.3101$ $v'=0.4651$

CCT: $T_c=6962K$ ($duv=0.00498$)

Color Ratio: $R=0.133$ $G=0.803$ $B=0.064$

Peak Wavelength: 453.4nm

Half Bandwidth: 29.7nm

Dominant Wavelength: 487.9nm

Color Purity: 0.101

CRI: $R_a=86.1$

TM30: $R_f=84$, $R_g=94$

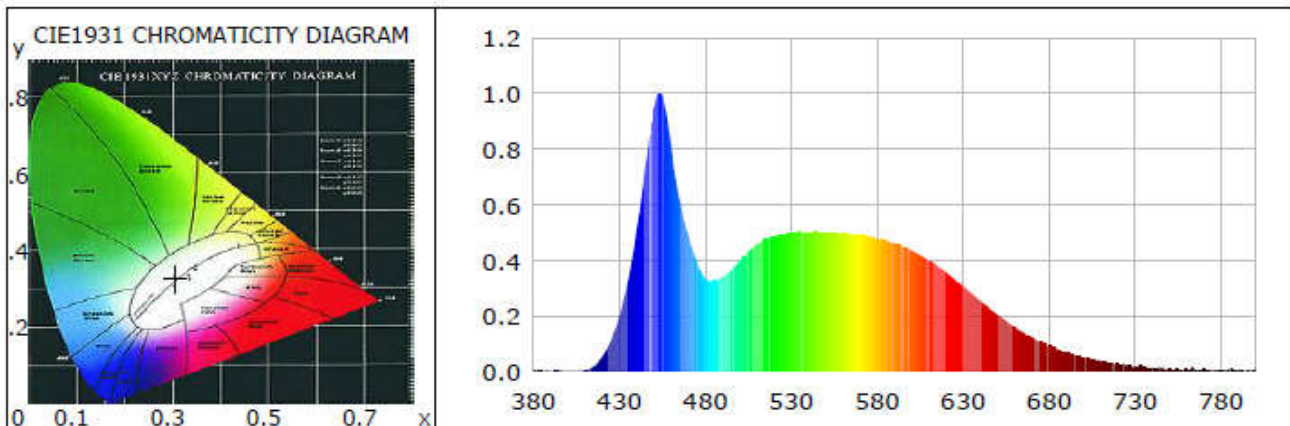
$R1=84$ $R2=91$ $R3=94$ $R4=85$ $R5=85$ $R6=87$ $R7=90$ $R8=74$

$R9=20$ $R10=77$ $R11=84$ $R12=63$ $R13=87$ $R14=97$ $R15=80$

Color Quality Scale: $Q_a=84.5$, $Q_f=84.6$, $Q_p=84.1$, $Q_g=91.9$

$Q1=85$ $Q2=99$ $Q3=83$ $Q4=77$ $Q5=81$ $Q6=84$ $Q7=88$ $Q8=91$

$Q9=98$ $Q10=90$ $Q11=87$ $Q12=86$ $Q13=86$ $Q14=75$ $Q15=79$



Photometric Parameters

Luminous Flux: 2045.83 lm
EEI: 0.13

Efficiency: 103.43 lm/W
Energy Efficiency Class: A+ (EU 874-2012)

Radiant Power: 6.780 W

Electric Parameters

Voltage: 230.30V
Power Factor: 0.9900

Current: 0.0870A
Frequency: 49.98Hz

Power: 19.78W

Test Information

Scan Range: 380~800:1nm
Stabilization Time: 30 Min
Max of Signal: 43723 (3433)

Photometric Method: sphere-spectroradiometer
Photometric Condition: Sphere diameter: 1.75m, 4T
CCD Integration Time: 415.37 ms