

3-Segment AC Input HV LED Driver

-Special Designed For 6W LED Light Bulb-

General Description

PT6923 is a special current regulator to drive HV LED with 3-Segment driving topology which will improve power factor, THDI and efficiency. EMI issue will be avoided by special technology during segment switching. Few external components, no capacitor and temperature compensation design which makes low price & long life LED bulbs possible.



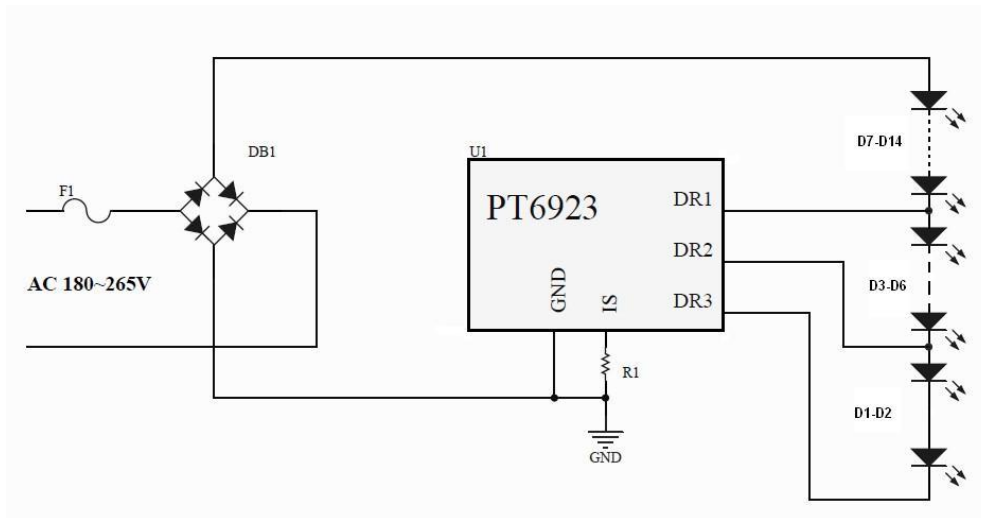
Solution Summary

Parameters	SPEC
Input Voltage	180~265VAC
LED Strings	DR1/DR2/DR3 : 8/4/2
LED SPEC	18V@20mA(Multi Chip Package) 3030 SMD LED
Output Power	6W @ 220VAC
Efficiency	86.8% @ 220VAC
PF	>0.95
THDI	<31%
LED Open/Short Protection	Provided
Over Temperature Protection	Provided
IC Package	TO252-5

Light Bulb Structure



Schematic Diagram

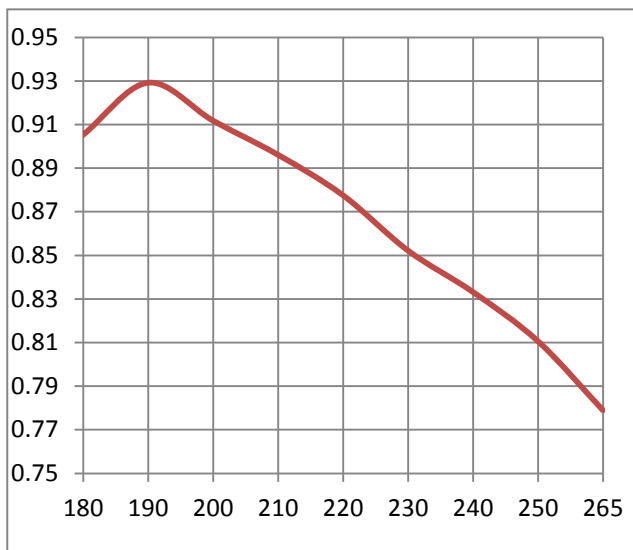


BOM

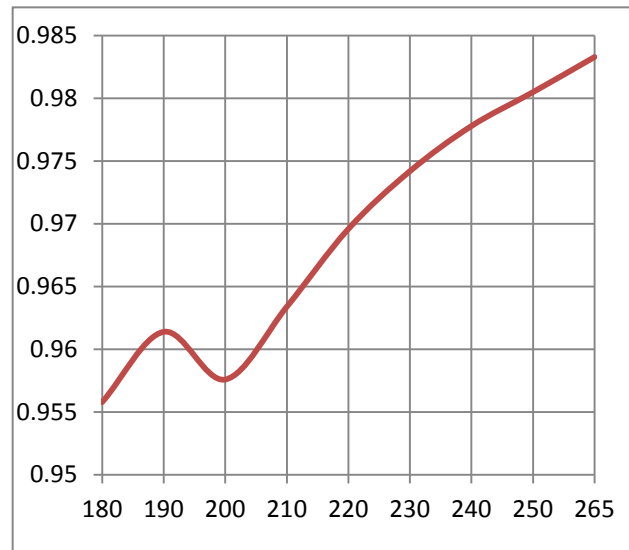
Quantity	Element No.	Description	Manufacturer	M.P.N.
1	U1	800V 1A, Surface Mounting Bridge Diode	TOKO	UA80
1	U2	3-Segment HV LED current regulator	PTC	PT6923
1	F1	1A, 250VAC Fuse	Generic	
1	R1	7.5Ω, 0805 SMD Resistor	Generic	
14	D1-D14	18V/20mA 3030 SMD LED	Generic	

Typical Performance

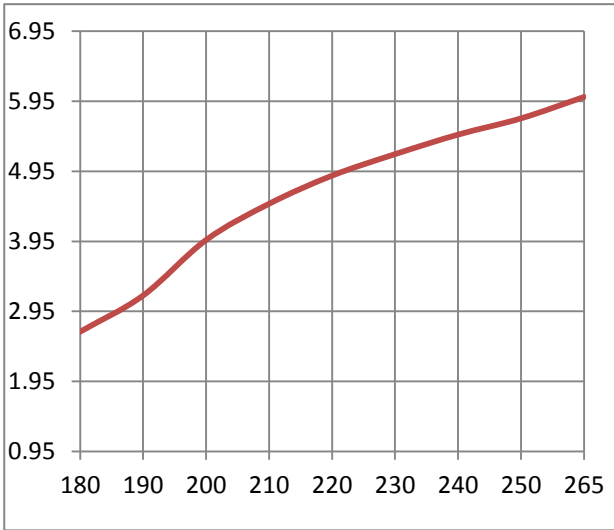
Efficiency vs. AC Input Voltage (V)



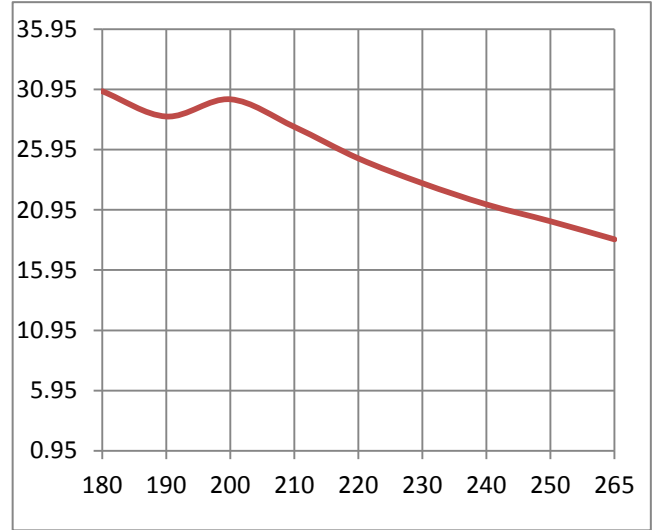
PF Value vs. AC Input Voltage (V)



Output Power (W) vs. AC Input Voltage (V)

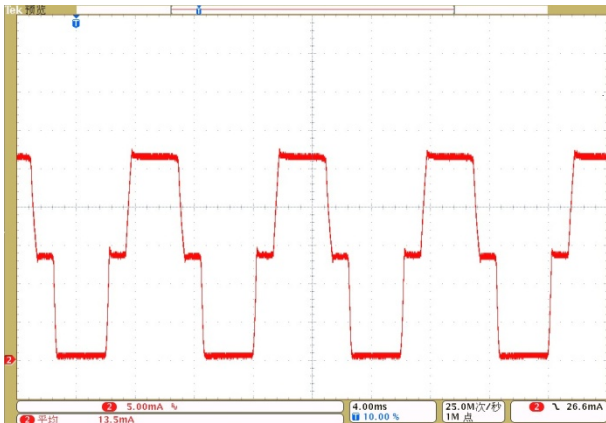


THDI vs. AC Input Voltage (V)

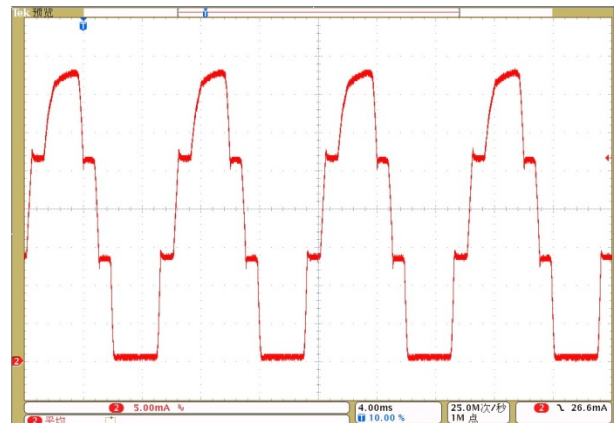


Output Current Waveform

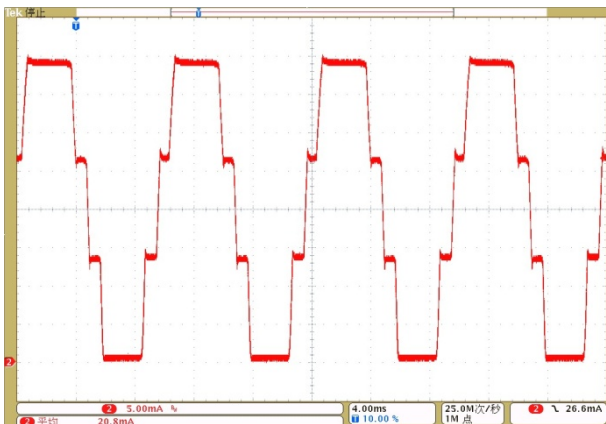
VAC=180V (5mA/DIV, T=4mS)



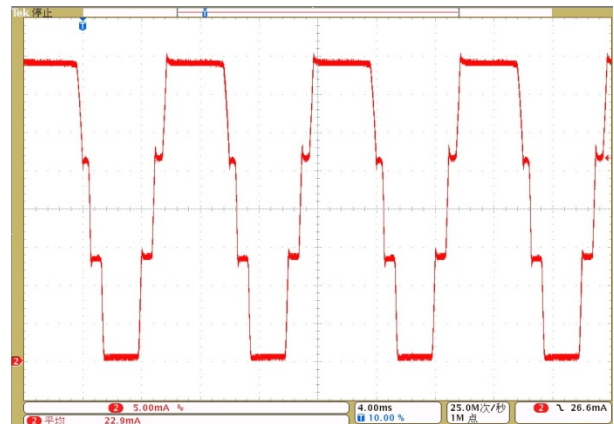
VAC=200V (5mA/DIV, T=4mS)



VAC=220V (5mA/DIV, T=4mS)



VAC=240V (5mA/DIV, T=4mS)



Revision History

Date	Revision No.	Modification
02/4/2013	PT6923DB2V1.0	New Format