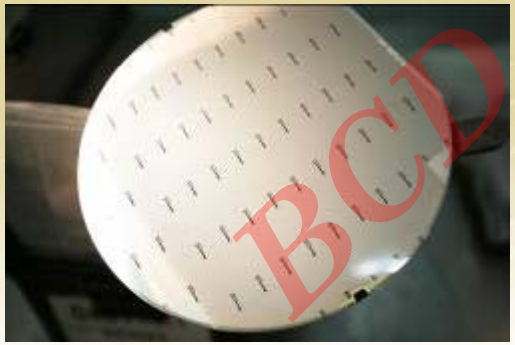
Test Report For AP1682 7*1W LED Solution

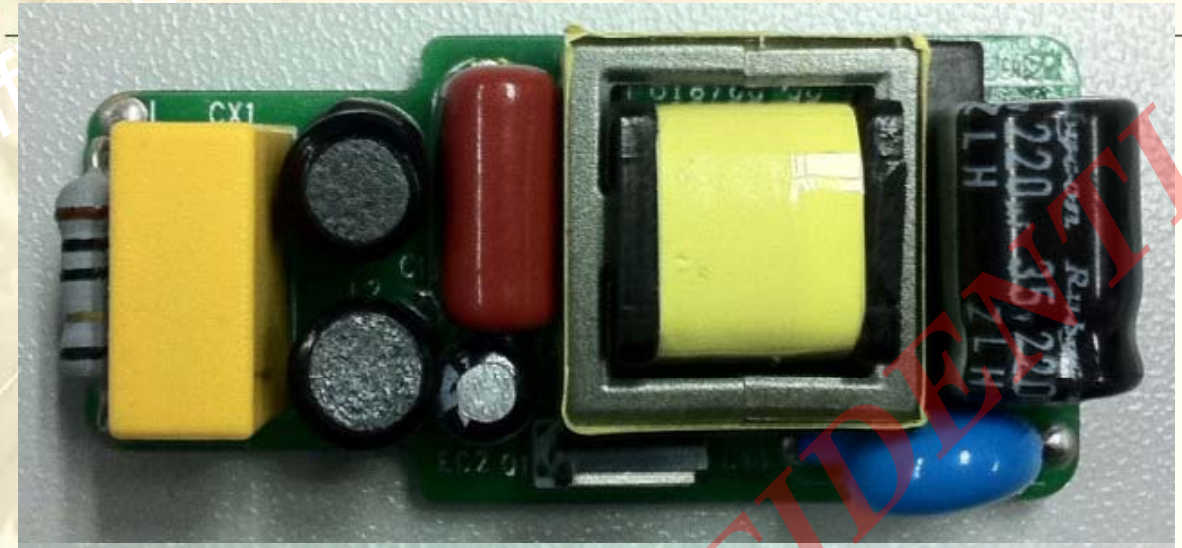
BCD SEMICONDUCTOR MANUFACTURING LIMITED

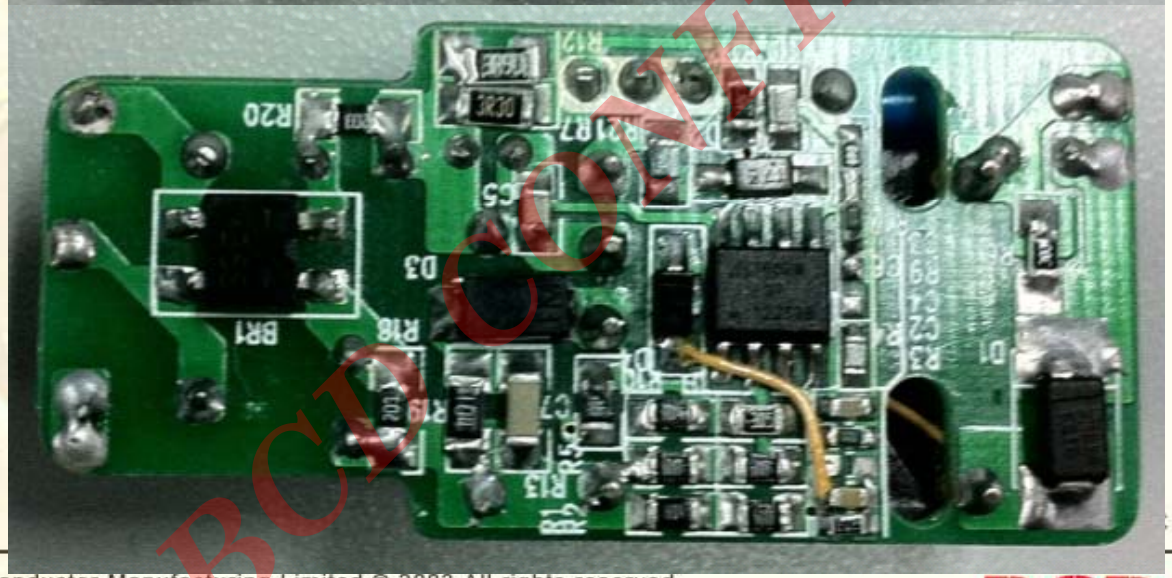
Oct. 2011

By Star Gong



Review





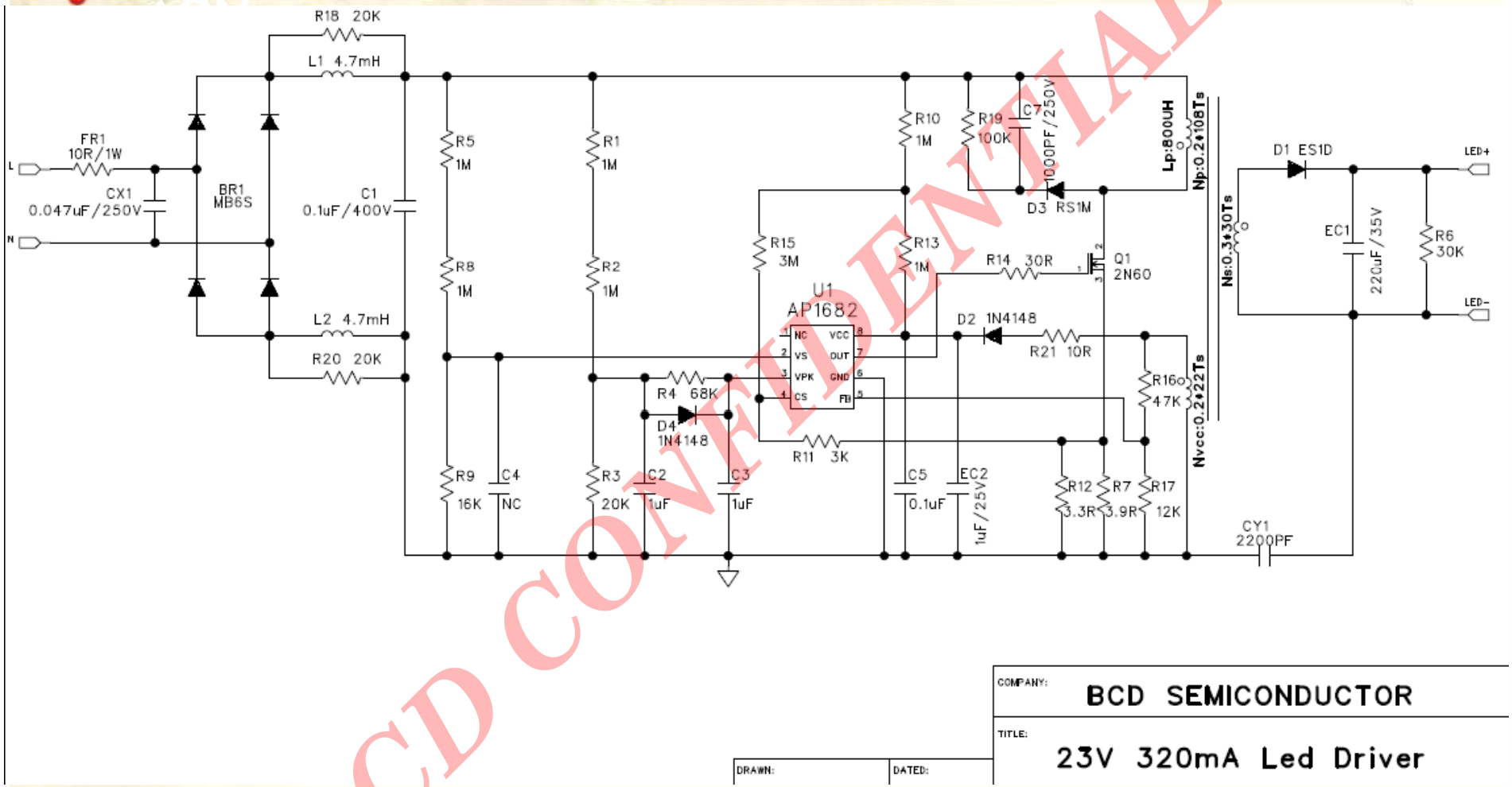
PCB Size L*W*H:

45*21*20mm

Specification of 7*1W LED

Description	Min	Typ	Max	Units
Input				
Voltage	90		264	VAC
Frequency	47	50/60	63	Hz
No Load Input Power			300	mW
Output				
Output Voltage	13	23	25	V
Output Ripple Voltage			5000	mVpp
Output Current	295	310	325	mA
Output Power (Pno)		7.13		W
PF	0.9			
Total THD			10	%
Temp Test (△℃)			50	℃
Efficiency				
Efficiency at 100 % of Pno **(EPS 2.0)**	80			%
EMI	Pass EN55015 Class B with 6dB margin			

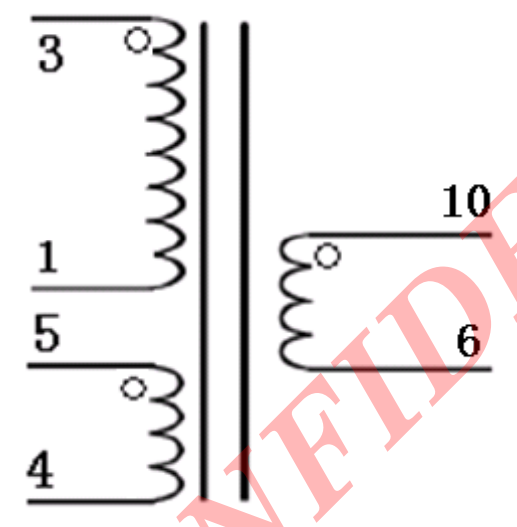
Schematics of AP1682 Solution



COMPANY:	BCD SEMICONDUCTOR
TITLE:	23V 320mA Led Driver
DRAWN:	
DATED:	

Transformer Specification

Electrical Diagram



Core Material: PC40

Bobbin: EE16 Vertical 5+5

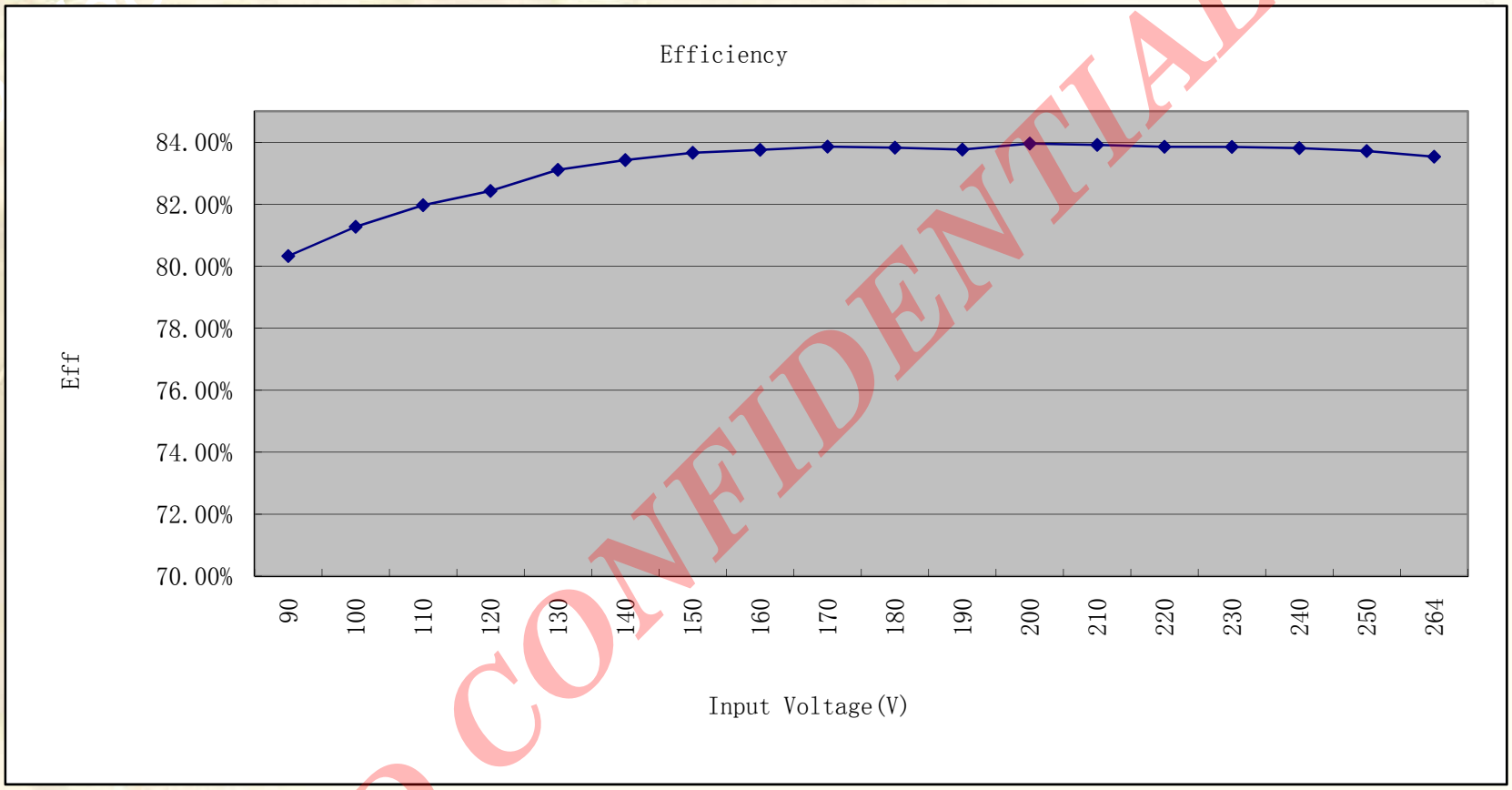
Electrical Specifications

Primary Inductance	Pin 3-1,all other windings open, measured at 1kHz, 0.4VRMS	0.8mH, ± 7%
Primary Leakage Inductance	Pin 3-1, all other windings shorted, measured at 10kHz, 0.4VRMS	50 uH (Max.)

Transformer Specification

Winding Sequence: Begin from the Inner Bobbin		
Reeling sequence ↓	WD #1 Primary Winding	Start at Pin 3. Wind 74turns of Φ0.2mm magnet wire from left to right. Terminate on Pin 2. Wind tightly & spread evenly.
	Insulation	2 Layers of insulation tape, 2.0mils thick, 7.0mm wide.
	WD #2 Secondary Winding	Start at Pin 10. Wind 30turns of Φ0.3mm Triple Insulated Wire from right to left. Terminate on Pin 6. Wind tightly & spread evenly.
	Insulation	2 Layers of insulation tape, 2.0mils thick, 7.0mm wide.
	WD #3 Primary Winding	Start at Pin 2. Wind 34turns of Φ0.2mm magnet wire from left to right. Terminate on Pin 1. Wind tightly & spread evenly.
	Insulation	1 Layers of insulation tape, 2.0mils thick, 7.0mm wide.
	Shield	Start at Pin 4. Wind 4 turns of Φ0.17mm magnet wire from left to right.
	Insulation	1 Layers of insulation tape, 2.0mils thick, 7.0mm wide.
	WD #4 Auxiliary Winding	Start at Pin 5. Wind 22turns of Φ0.2mm magnet wire from left to right. Terminate on Pin 4. Wind tightly & spread evenly.
	Insulation	3 Layers of insulation tape, 2.0mils thick, 7.0mm wide.

Test Result: Efficiency

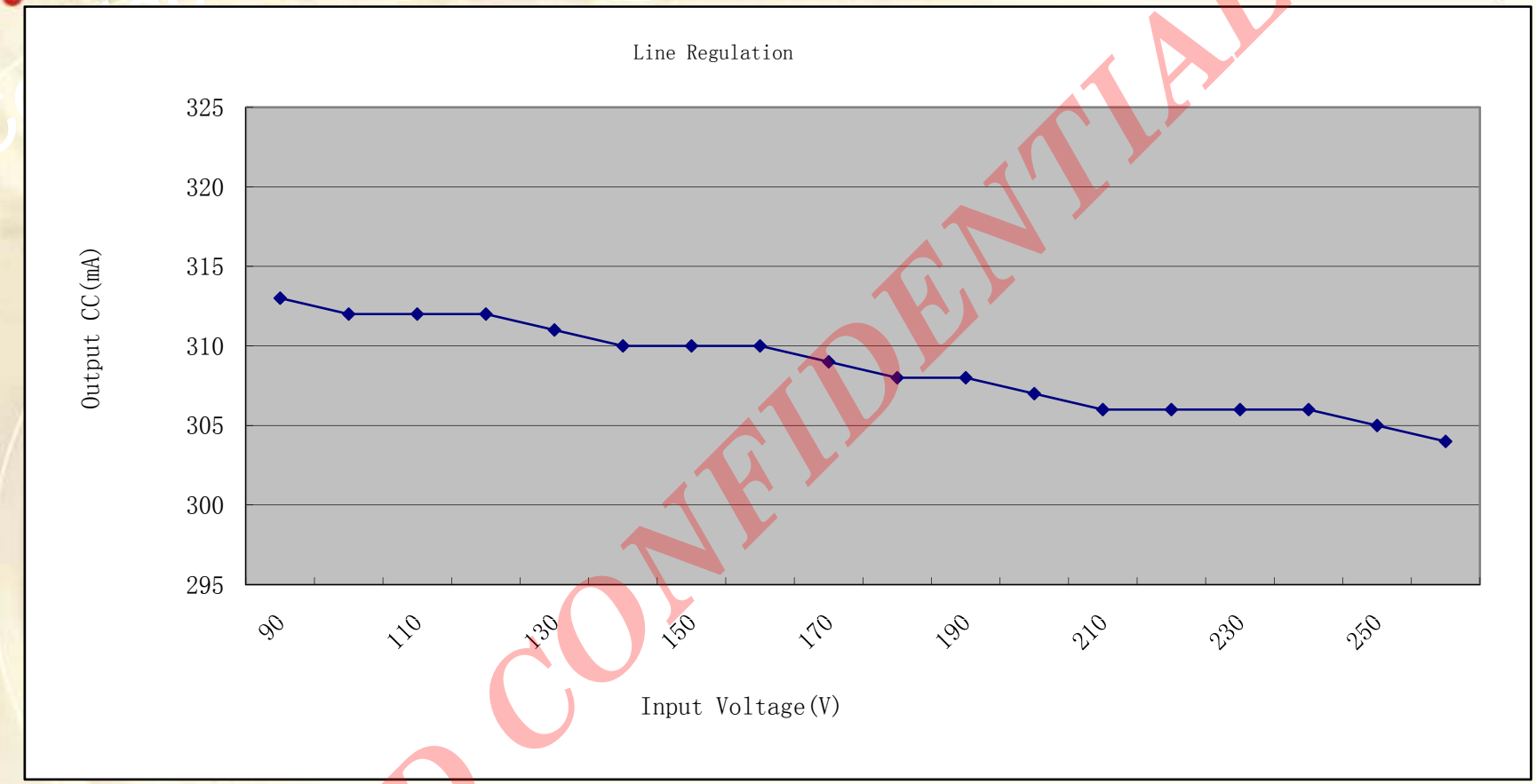


Load Condition: CV 24.5V

115VAC/60Hz：81.94%

230VAC/50Hz：83.85%

Test Results: Line Regulation

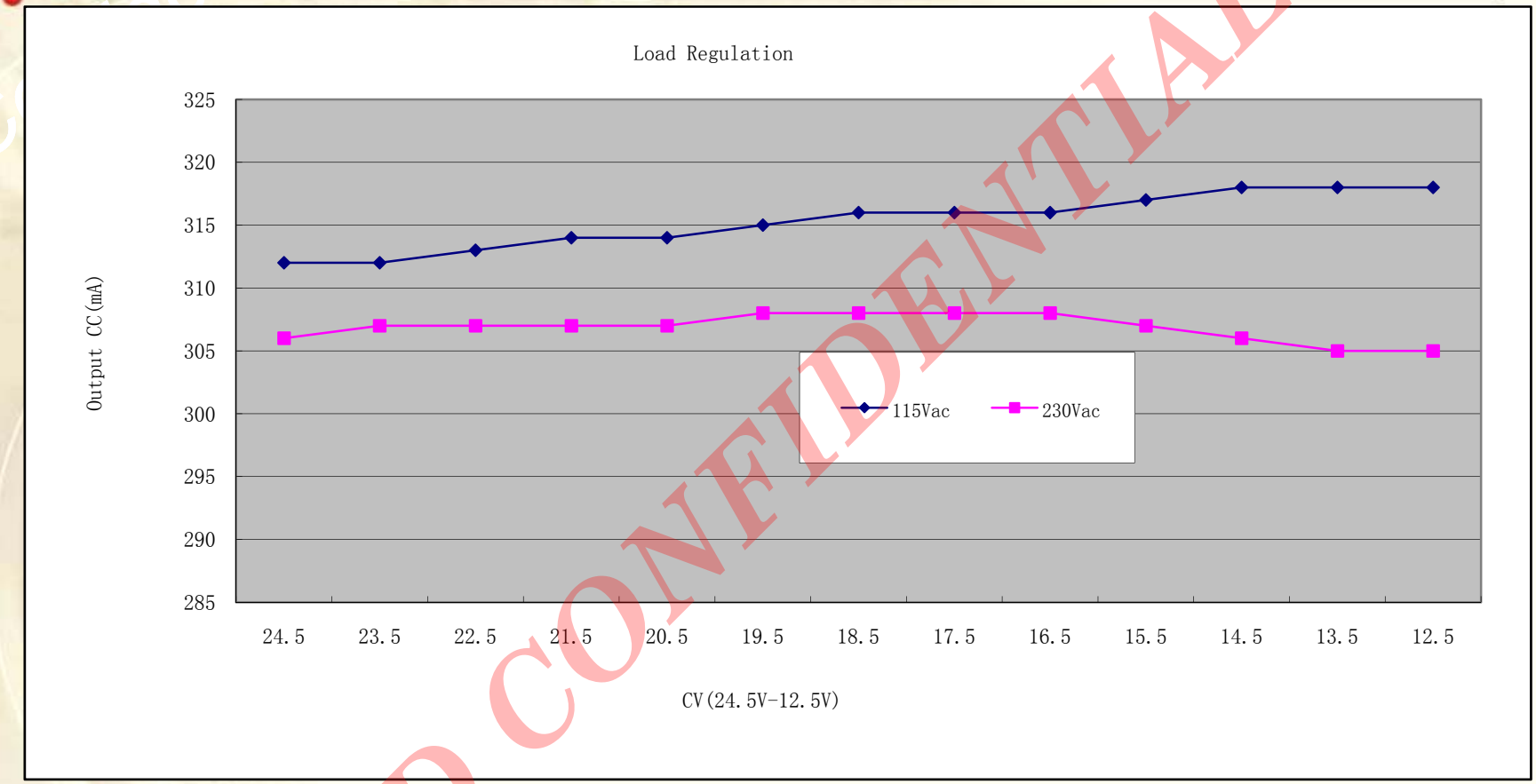


Load Condition: CV 24.5V

115VAC/60Hz: 312mA

230VAC/50Hz: 306mA

Test Results: Load Regulation

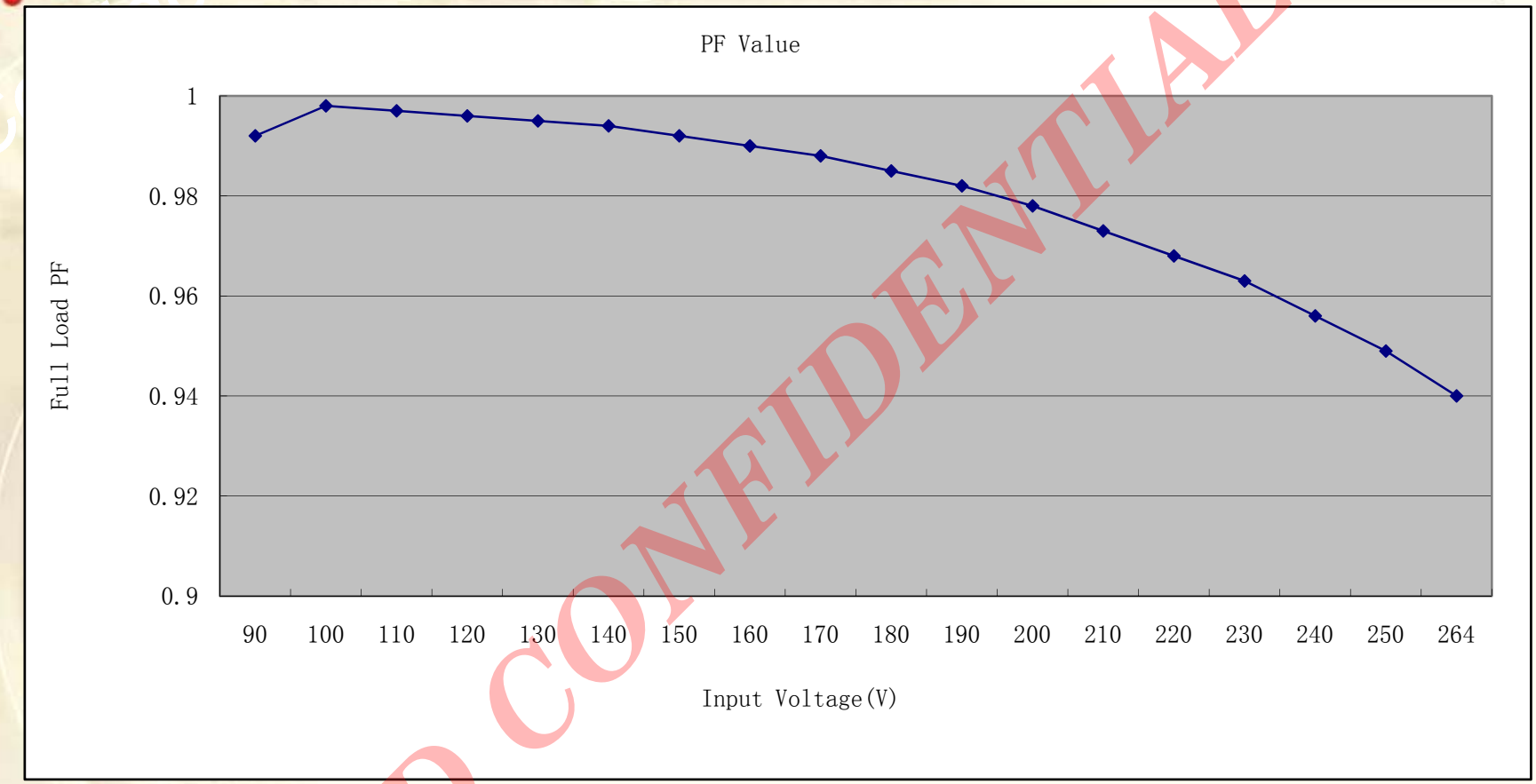


Load Condition: CV 24.5V – 12.5V

115VAC/60Hz: 312mA – 318mA

230VAC/50Hz: 306mA – 304mA

Test Results: PF Value

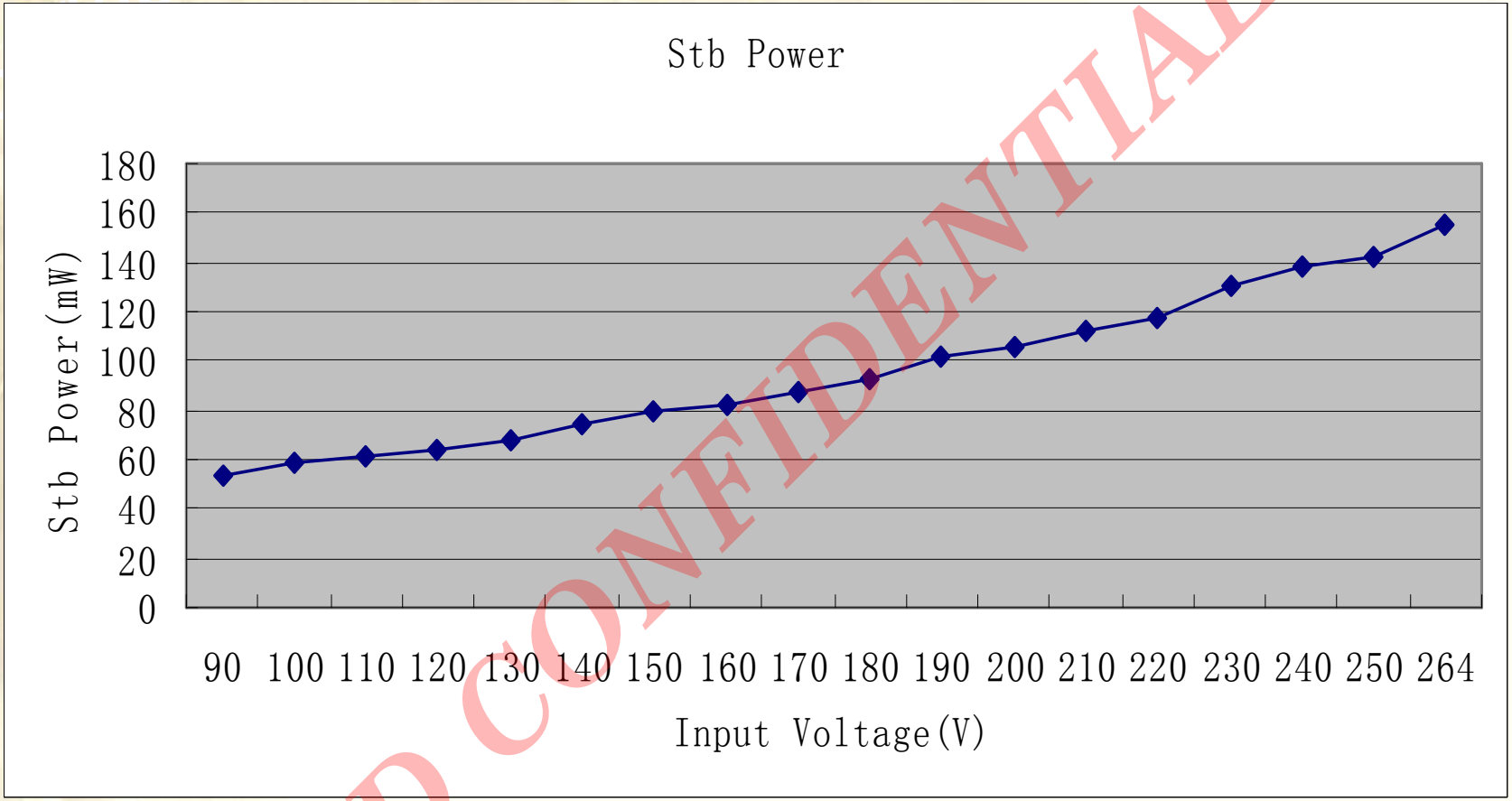


Load Condition: CV 24.5V

90VAC/60Hz：0.998

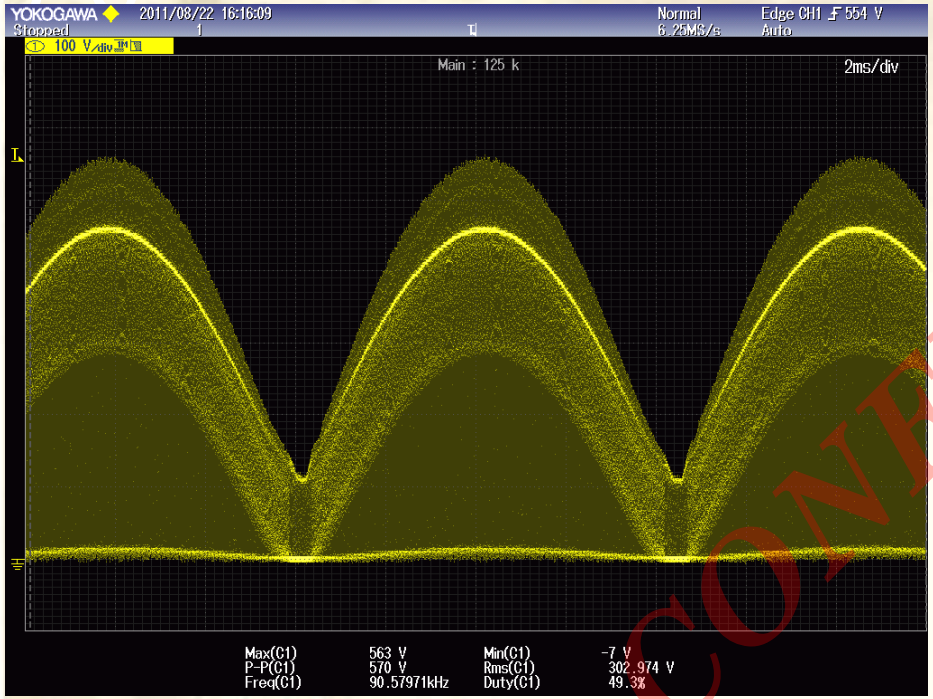
264VAC/50Hz：0.94

Test Result: No Load Input Power



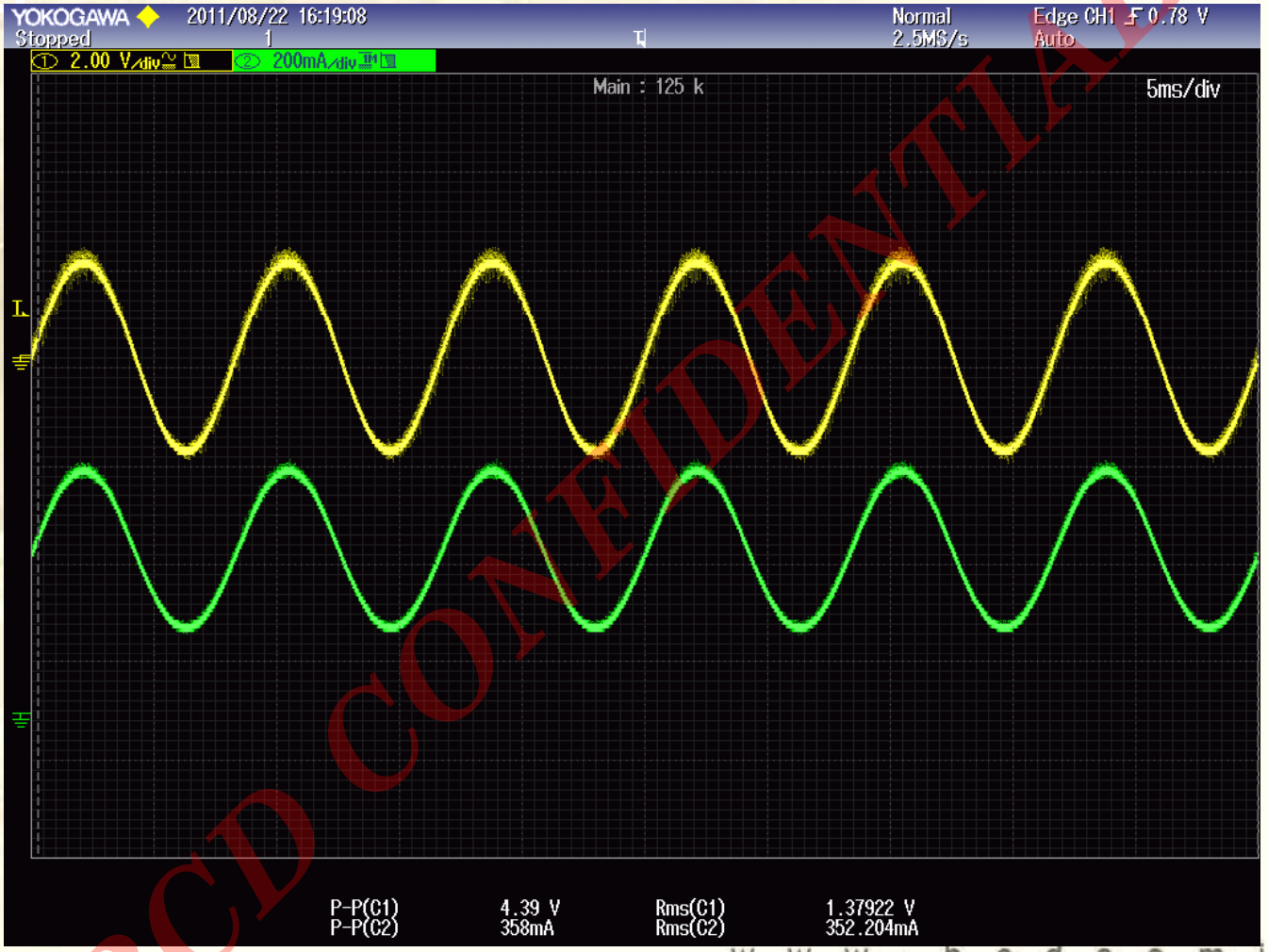
Standby Power:
131mW @230Vac

Test Result: Vds Waveform

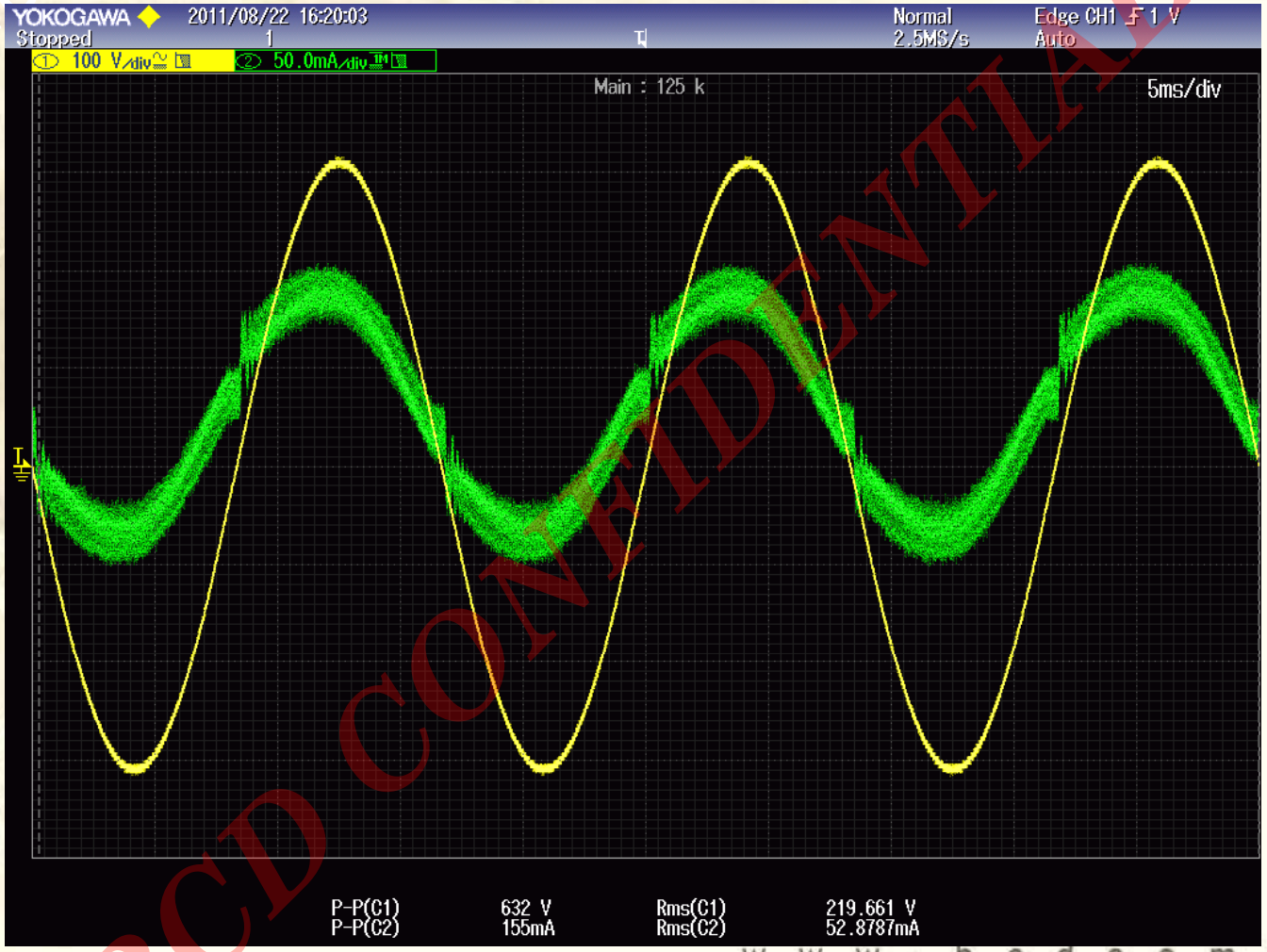


264Vac Input : 560Vmax

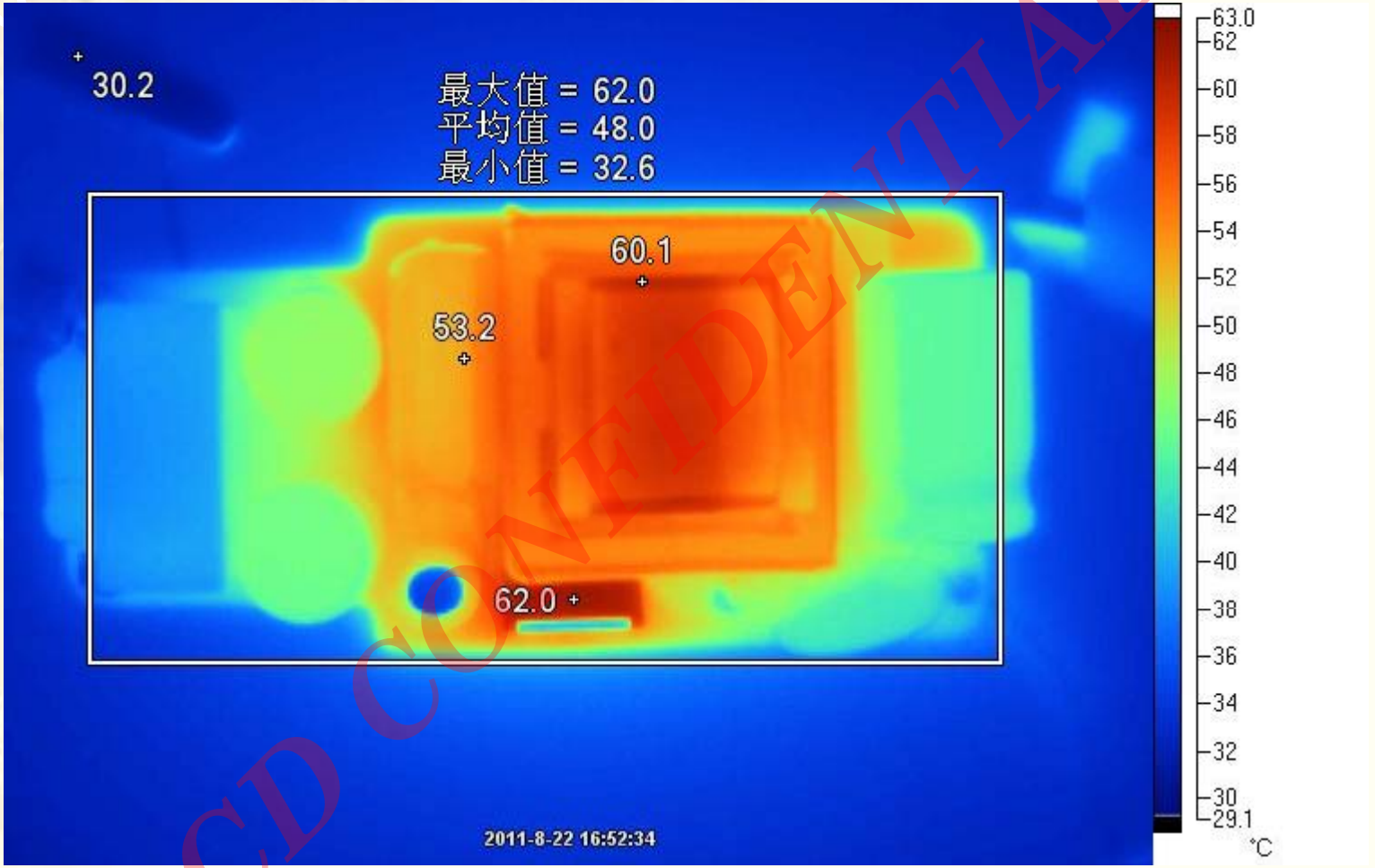
Test Result: Ripple & Noise



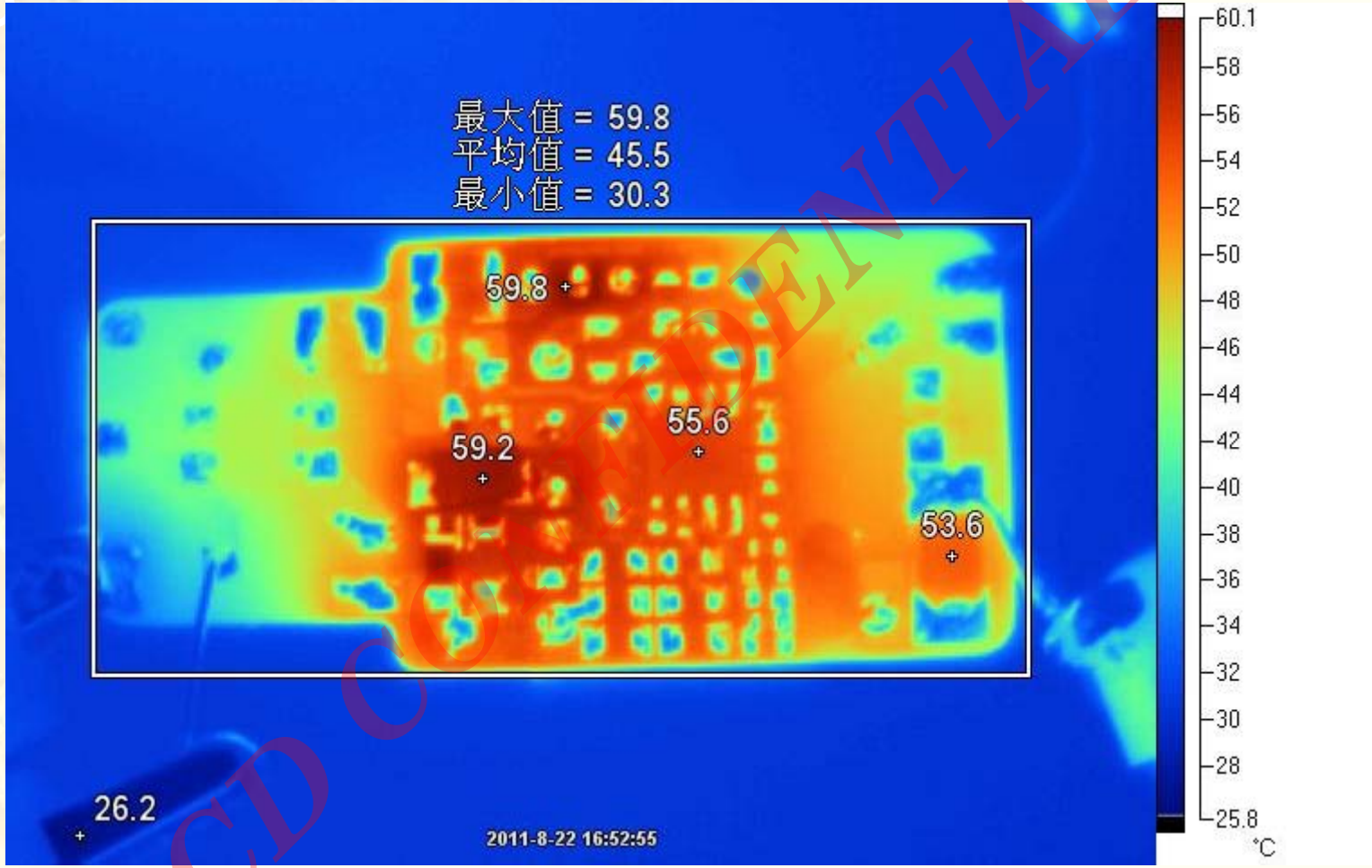
Test Result: Ac Input Current



Test Result: Temp Rise (Top Side)



Test Result: Temp Rise (Bottom Side)



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Test Result : EMC (Conduction L)

EMI TEST REPORT

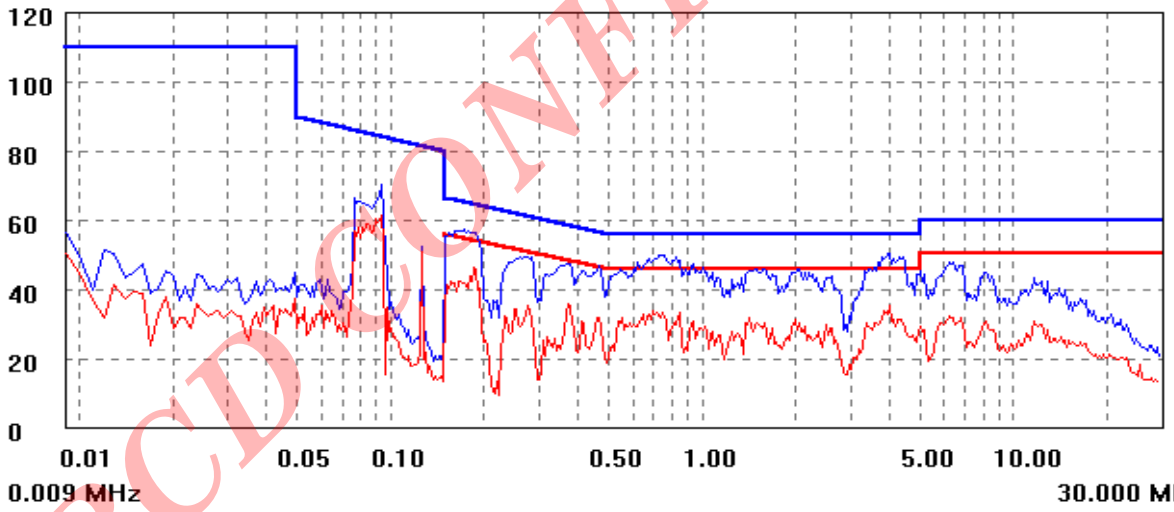
parameter

Organization:	BCD	Operator:	Star_Gong	EUT:	AP1682 7*1W
Place:	BCD Lib	Time:	2011/8/22/14:53		
Detector:	PK+AV	Test-time(ms):	10		
Limit:	EN55015	Transductor:	PK1		
Remark:	230Vac 23V 330mA				

freq, step

Start(MHz)	End(MHz)	Step(MHz)
0.009	2.000	0.001
2.000	10.000	0.005
10.000	30.000	0.025

scan result



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Test Result : EMC (Conduction N)

EMI TEST REPORT

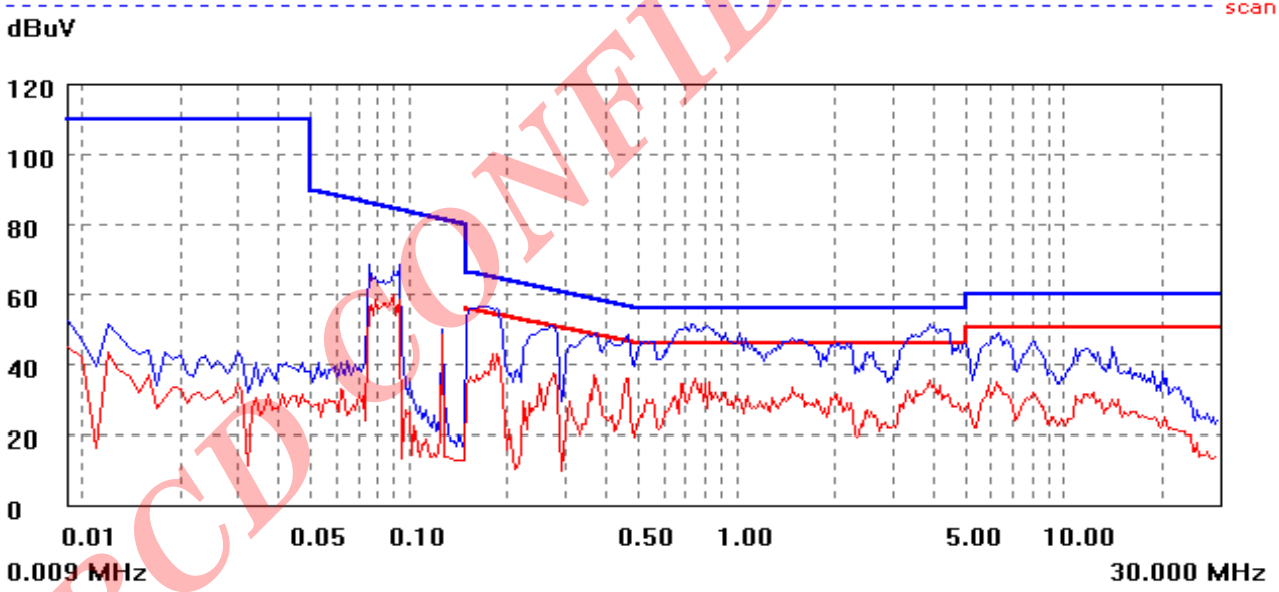
parameter

Organization:	BCD	Operator:	Star_Gong	EUT:	AP1682 7*1W
Place:	BCD Lib	Time:	2011/8/22/14:58		
Detector:	PK+AV	Test-time(ms):	10		
Limit:	EN55015	Transductor:	PK1		
Remark:	230Vac 23V 330mA				

freq, step

Start(MHz)	End(MHz)	Step(MHz)
0.009	2.000	0.001
2.000	10.000	0.005
10.000	30.000	0.025

scan result



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