

YHD150-110S13V8T-OF

DC/DC Converter Specification

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YHD150-110S13V8T-OF DC-DC Converter

Input 45V(66V)–160V, Output 13.8V/10.8A

Model Numbering**YHD150-110S13V8T-OF**

① ② ③④ ⑤⑥⑦

- ① Series:YHD
- ② Output Power :150W
- ③ Input Voltage:110Vdc
- ④ Output Mode:Single
- ⑤ Output Voltage:13.8Vdc
- ⑥ Distinctive Product
- ⑦ Product Peripheral Circuit

**Introduction**

YHD150-110S13V8T-OF DC/DC power supply 110Vdc input. Input Voltage Range:45Vdc to 160Vdc.Output Voltage:13.8Vdc.Maximum Output Power:150W.The power has Short-Circuit Protection, Input Under-voltage Protection, Output Over-voltage Protection, Over-current Protection, Over-temperature protection and Anti-reverse connection function.

Application: Telecommunications, Electronic Data Processing, Distributed Power Architecture ,Industrial and Railway& Rail transit.

Electrical Specification

Output	Min	Type	Max	Units	Notes
Power	—	—	150	W	—
Output Current	1.08	—	10.8	A	—
Output Current limiting	11.88	—	14.04	A	—
Output Voltage	13.66	13.80	13.93	Vdc	—
Line Regulation	—	—	±0.5	% Vo	V _{in} =45Vdc~160Vdc
Load Regulation	—	—	±2	% Vo	V _{in} =110V,I _O :10%~100% I _{O,nom}
Dynamic Response Recovery Time	—	—	200	μs	25%~50%~25% and 50%~75%~50% load change by Step di/dt=0.1A/μs
Dynamic Response Overshoot Rate	—	—	±690	mV	
Ripple and Noise	—	—	100	mV	Measured by 20MHz
Temperature Coefficient	—	±0.1	—	%/°C	—
Capacitive Load	0	—	2200	μF	Nominal input voltage, Output nominal load

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Continue

Output	Min	Type	Max	Units	Notes
Over-temperature Protection	105	—	115	°C	Aluminum baseplate temperature
Short-Circuit Protection	Automatic Recovery				

Input	Min	Type	Max	Units	Notes
Input Voltage Range	66	110	160	Vdc	I _o =10.8A
	45	—	66	Vdc	75%Load
Input Under-voltage Protection	40	—	44	Vdc	Higher than 45Vdc can be automatically recovered
Input reverse-polarity Protection	Automatic Recovery				
Maximum Input Current	—	—	3.05	A	V _{in} =45Vdc,75%Load
Maximum Instantaneous Peak Current	—	—	100	A	The duration is 200μs
Input Cross-ripple Current	—	—	10	%	V _{in} =110Vdc,10% of the input current
Static Input Current	—	—	30	mA	V _{in} =45Vdc, I _o =0A
Setup Time	—	5	—	ms	Pure Resistive Load
Start-up Delay Time	—	13	—	ms	V _{in} =110Vdc,Pure Resistive Load,Time difference between 90% V _{in} and10% V _o

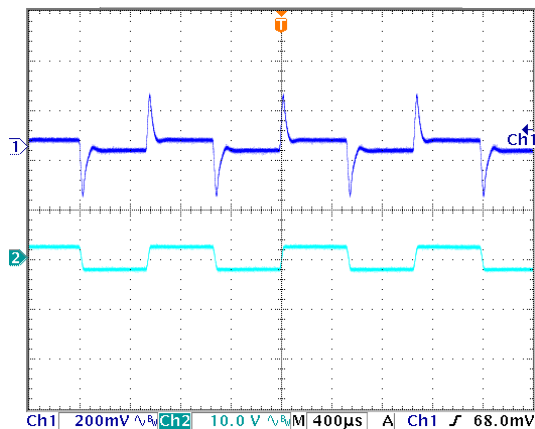
General	Min	Type	Max	Units	Notes
Isolation Voltage	—	—	1500	Vdc	Input-Output Leak Current:5mA,Time:60s
	—	—	1500	Vdc	Input-Case Leak Current:5mA,Time:60s
Switching Frequency	—	260	—	kHz	—
Efficiency	83	85	—	%	V _{in} =110Vdc
MTBF	—	1.5×10 ⁶	—	h	Bellcore TR-332,Tc=25°C
Case Temperature	-40	—	+100	°C	Full Load
Storage Temperature	-40	—	+105	°C	—
Relative Humidity	10	—	90	%	No Condensing
Weight	—	320	—	g	—

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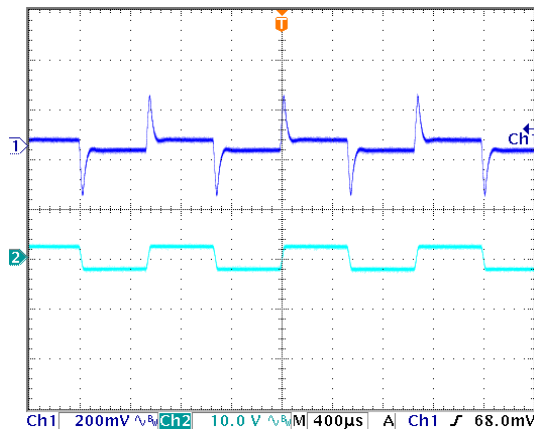
Input 45V(66V)-160V, Output 13.8V/10.8A

Characteristic Curves at 25°C

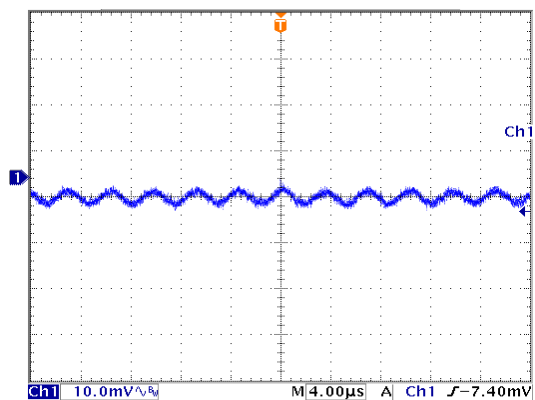
Typical Dynamic Response
Change From 25%~50%~25% $I_o(max)$



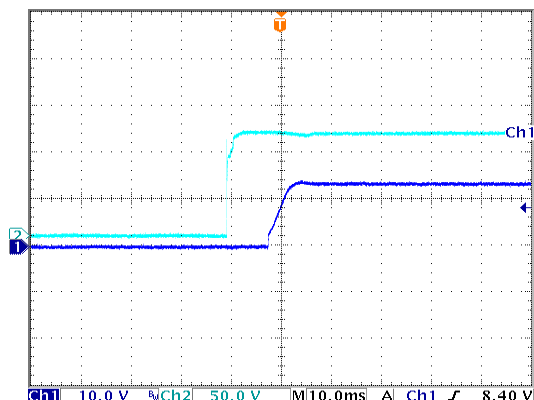
Typical Dynamic Response
Change From 50%~75%~50% $I_o(max)$



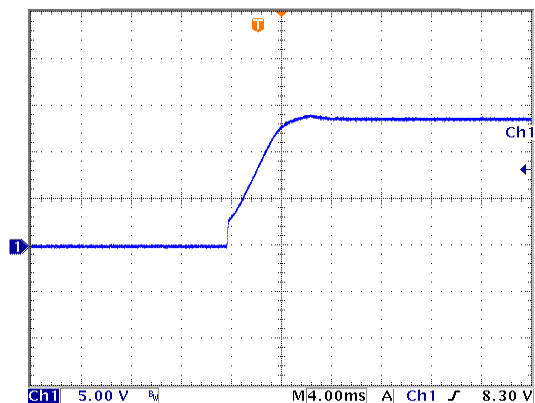
Typical Output Ripple Voltage



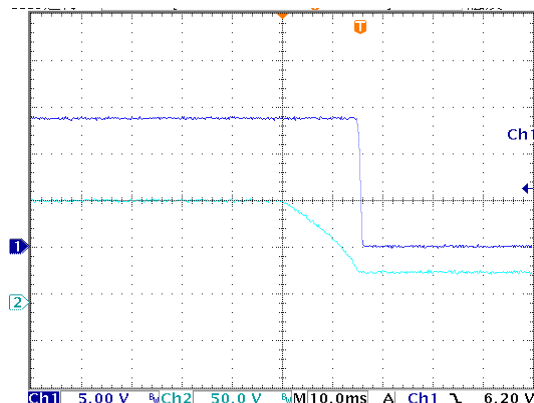
Typical Start-Up Delay Time



Typical Start Setup Time



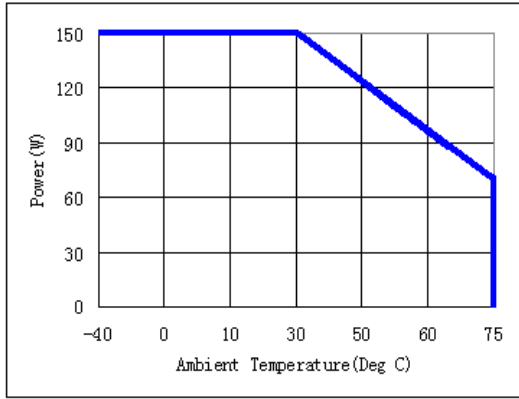
Typical Input Voltage Off, Output Delay(Output 75W)



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Derating Curve



Typical Efficiency Curve

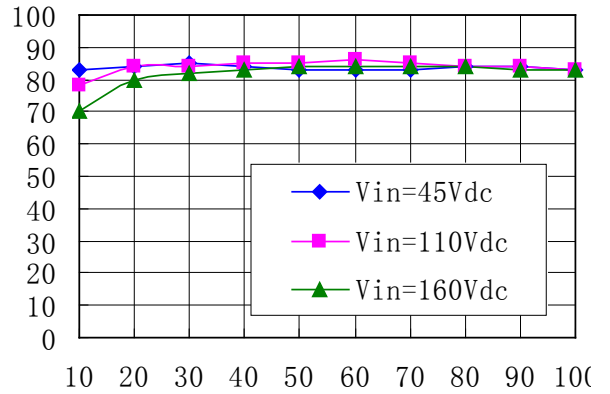
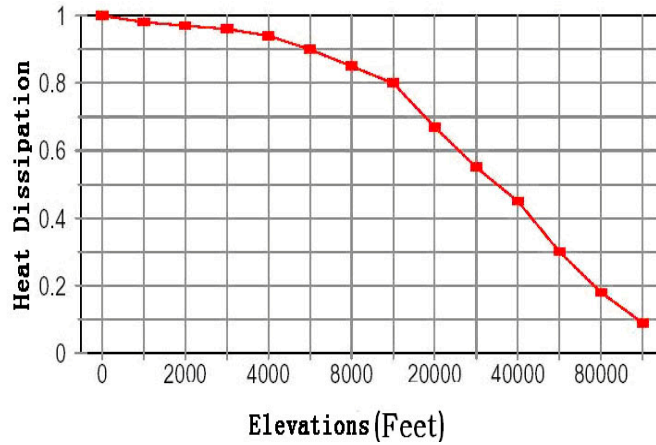
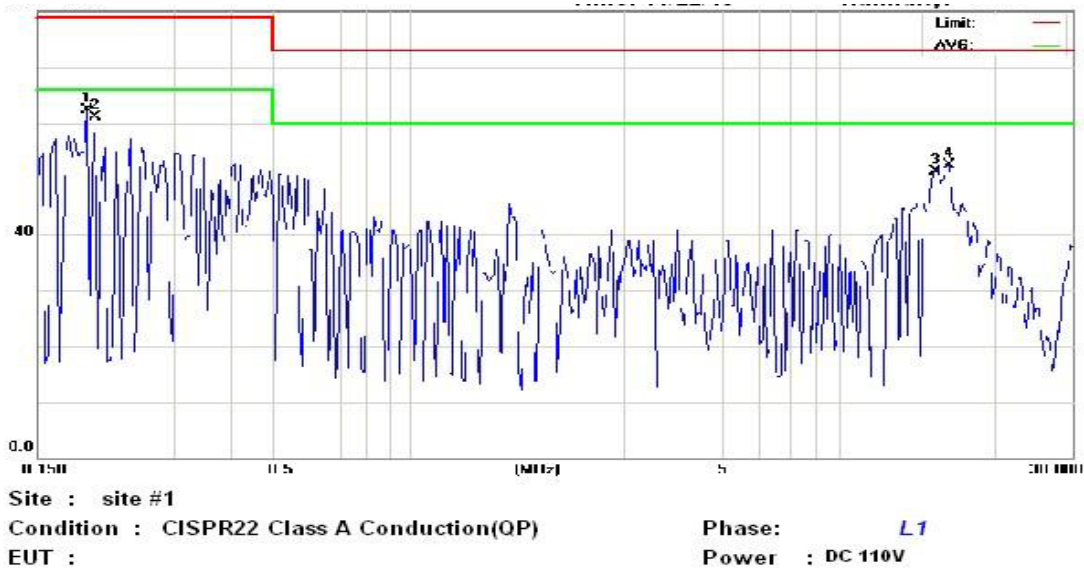


Diagram Of The Effect Of Altitude On Heat Dissipation



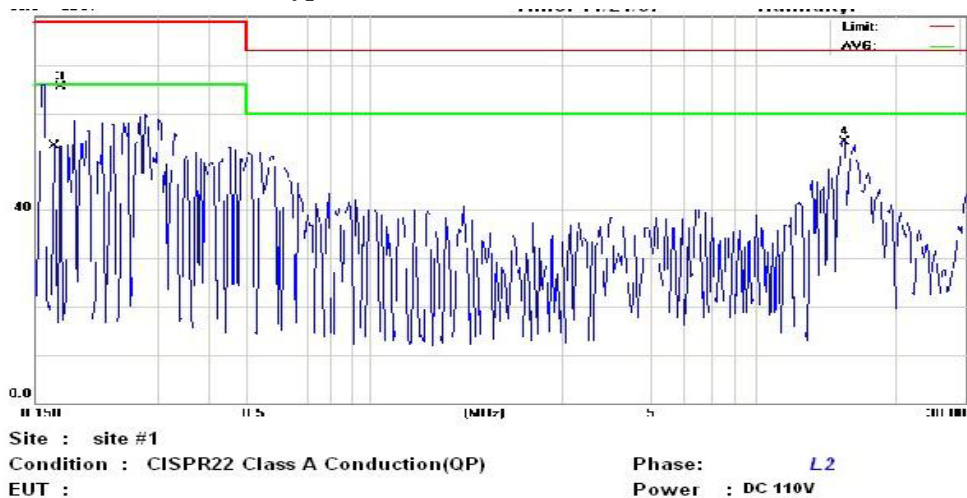
Typical Conduction Quasi Peak(L1)



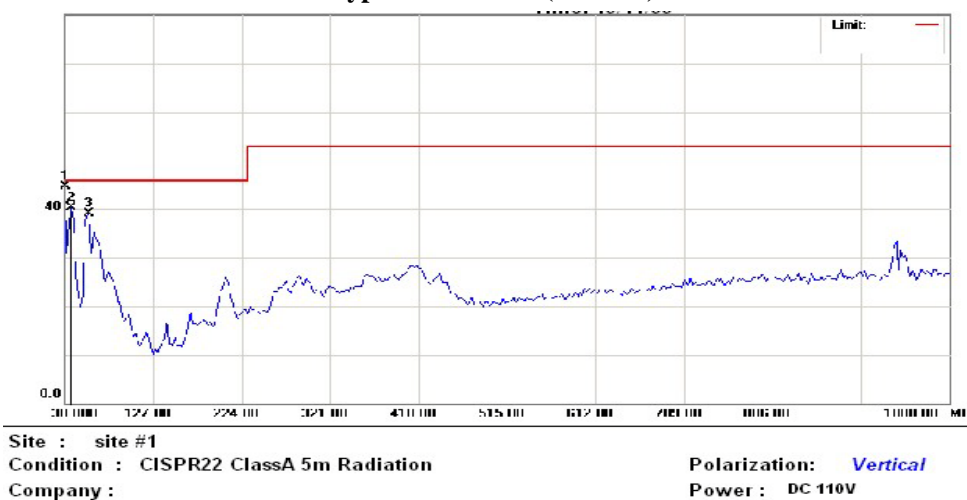
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Typical Conduction Quasi Peak (L2)



Typical Radiation(Vertical)



Typical Radiation(Horizontal)



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Surge Test

Surge Test

Test conditions: nominal input 110Vdc, output full load.

No.	Check Item	Check requirement	Check phenomenon	Decision
1	Surge	Surge test grade: common-mode ± 2 kV differential mode ± 2 kV Number of experiment: plus or minus 5times Repetitive rate: 1 time /10s Performance criterion: B	Test prototype output is normal	Qualified

Note: Performance evaluation B: After the test, the equipment can work continuously as expected. When the equipment is used as intended, the performance of the equipment without degradation or loss of function is not allowed to fall below the corresponding performance rating specified by the manufacturer. Performance levels can be replaced by allowable performance degradation. Performance degradation is allowed during the test, but the actual running state or stored data is not allowed to change. If the manufacturer does not specify a minimum performance level or allowable performance degradation, either can be exported from the product description and documentation or from the user's corresponding requirements for the intended use of the device.

Electrical fast transient burst

Electrical fast transient burst

Test conditions: nominal input 110Vdc, output full load

No.	Check Item	Check requirement	Check phenomenon	Decision
1	Electrical fast transient burst	Experimental grade: 2kV/5/50ns Tr/Th 5kHz Repetition rate Experimental pulses: Positive and negative pulses Repeat rate: 1 time/1min Performance criterion: A	Test prototype output is normal	Qualified

Note: Performance evaluation A: After the test, the equipment can work continuously as expected. When the equipment is used as intended, the performance of the equipment without degradation or loss of function is not allowed to fall below the corresponding performance rating specified by the manufacturer. Performance levels can be replaced by allowable performance degradation. Performance degradation is allowed during the test, but the actual running state or stored data is not allowed to change. If the manufacturer does not specify a minimum performance level or allowable performance degradation, either can be exported from the product description and documentation or from the user's corresponding requirements for the intended use of the device.

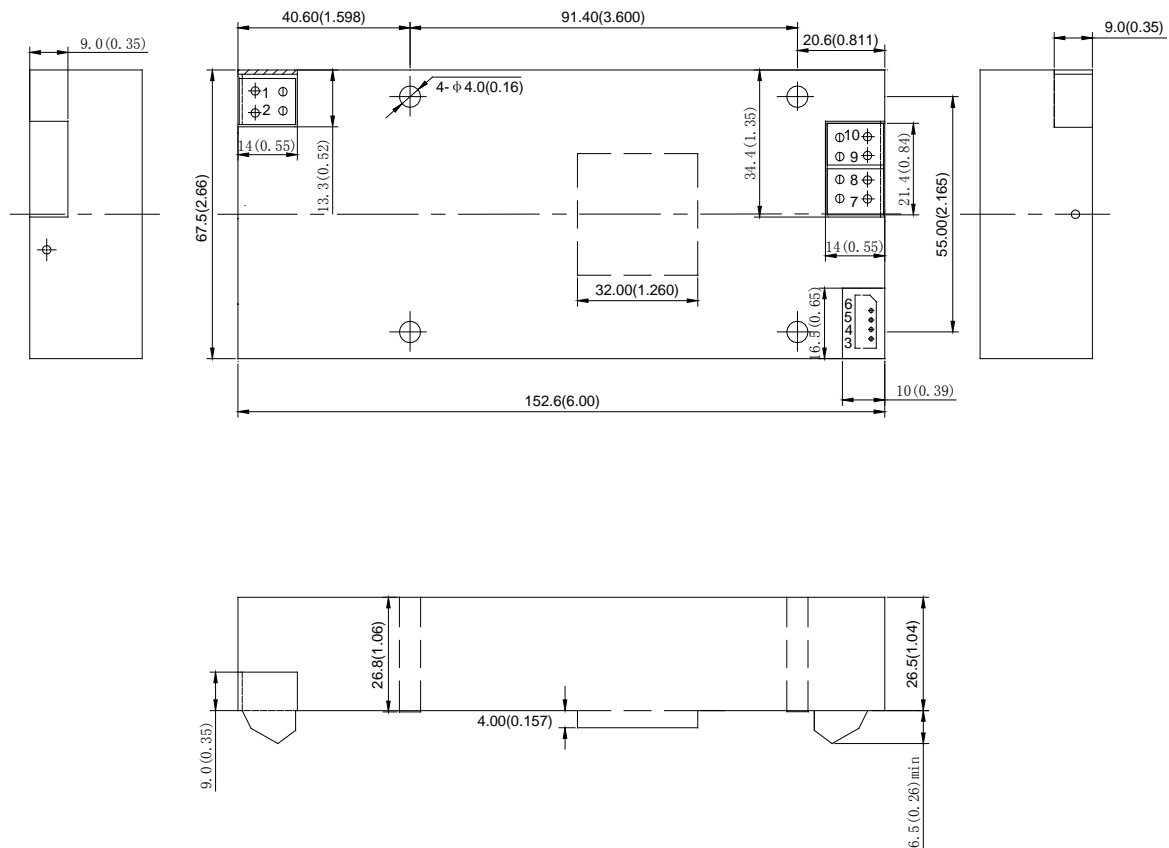
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Typical Application



Mechanical Diagram & Pins



Note: Units mm(inch)

Default Tolerance: X.X±0.5mm(X.XX±0.02inch)

X.XX±0.25mm(X.XXX±0.010inch)

Pin	1	2	3,4	5,6	7,9	8,10
Symbol	- Vin	+Vin	-Vo	+Vo	-Vo	+Vo
Meaning	Negative Input	Positive Input	Negative Output	Positive Output	Negative Output	Positive Output

Note: The maximum current allowed to flow through pins 3,4,5and6 of the output terminal is 3A.