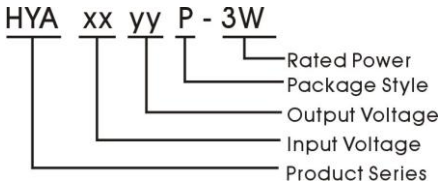
HYAP-3W Series

Features

- ★ Input / output Isolation Voltage 1000 VDC
- ★ 24 PIN DIP Package
- ★ Temperature Range:-40℃ to +85℃
- ★ UL94V-0 Inflaming retarding package
- ★ MTBF>1 million hours(25℃)
- ★ Short-circuit protection
- ★ Efficiency up to 85%

Applications

The HYA_P-3W series offer 3W of output, and features 1000VDC isolation and short-circuit. All models are particularly suited to tele-communications, industrial, test equipments power and other fields.

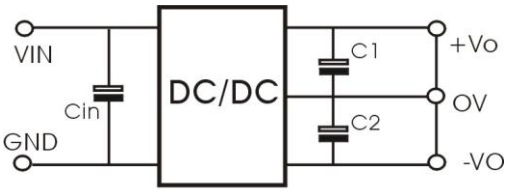


Model Detail List Specification

Model Number	Input Voltage range (nominal voltage)	Output Voltage	Output Current (mA)		Input Current Full load (mA)		Efficiency	Max. Capacitive Load(μF)
			Min.	Max.	Max.	No.		
HYA0505P-3W	4.5~9VDC (5 VDC)	±5.0V	±30	±300	441	40	68%	220
HYA0509P-3W		±9.0V	±16	±166	426		70%	
HYA0512P-3W		±12.0V	±12	±125	416		72%	
HYA0515P-3W		±15.0V	±10	±100	405		74%	
HYA1205P-3W	9~18VDC (12 VDC)	±5.0V	±30	±300	168	30	74%	
HYA1209P-3W		±9.0V	±16	±166	159		78%	
HYA1212P-3W		±12.0V	±12	±125	152		82%	
HYA1215P-3W		±15.0V	±10	±100	148		84%	
HYA2405P-3W	18~36VDC (24 VDC)	±5.0V	±30	±300	82	15	76%	
HYA2409P-3W		±9.0V	±16	±166	76		81%	
HYA2412P-3W		±12.0V	±12	±125	75		83%	
HYA2415P-3W		±15.0V	±10	±100	73		85%	
HYA4805P-3W	36~72VDC (48 VDC)	±5.0V	±30	±300	40	5	78%	
HYA4809P-3W		±9.0V	±16	±166	37		82%	
HYA4812P-3W		±12.0V	±12	±125	37		83%	
HYA4815P-3W		±15.0V	±10	±100	37		84%	

1. Recommended circuit

All the HYA_P-3W Series have been tested according to the following recommended testing circuit before leaving factory. (See P-1)This series should be tested under load. Never be tested under no load. If you want to further decrease The output ripple, you can increase a capacitance properly or choose capacitors with low DC/DC. However, the capacitance can't exceed the maximum capacitor load in the list.



P-1

2. Can't use in parallel and hot swap

HYAP-3W Series

Output Specifications

Item	Test Conditions	Min.	Typ.	Max.	Unit
Output Power		0.15		3	W
Output Voltage accuracy	0% to 100% load			±2	%
Line Regulation	Full load, Input voltage from low to high		±0.2	±0.5	
Load regulation	5% to 100% load		±0.3	±0.5	
Ripple & Noise	20MHz Bandwidth		75	105	mVp-p
Transient Recovery Time	25% load step change		0.5	2	ms
Transient Response Deviation			±2	±5	%
Temperature Drift	100% full load		±0.02	±0.03	%/°C
Short Circuit Protection		Hiccup, Continuous, automatic recovery			
Input Filter		∏ Filter			

Environmental Specifications

Item	Test Conditions	Min.	Typ.	Max.	Unit
Storage Humidity	Non condensing			95	%
Temp. rise at full load			25		℃
Operating Temperature		-40		+85	
Storage Temperature	Temperature ≥85℃ derating	-55		+125	
Soldering Temperature	1.5mm from case for 10 seconds			300	
Cooling		Free air convection			

Common Specifications

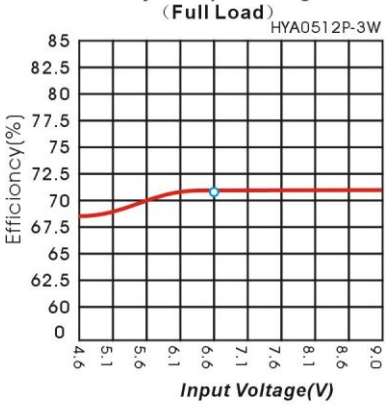
Item	Test Conditions	Min.	Typ.	Max.	Unit
Isolation Voltage	Tested for 1 minute and leakage current less than 1 mA	1000			VDC
Switching Frequency	Full load, nominal input	150	200	300	KHz
MTBF	MIL-HDBK-217F@25℃	1000			K hours
Isolation Capacitance	Input/Output , 100KHz/1V		120		PF
Isolation Resistance	Test at 500VDC	1000			MΩ
Weight			15		g

Input Specifications

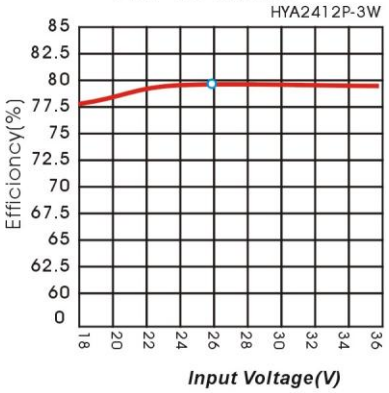
Item	Test Conditions	Min.	Typ.	Max.	Unit
Input Max. voltage	5 VDC Input (4.5~9V)			10	VDC
	12 VDC Input (9~18V)			20	
	24 VDC Input (18~36V)			38	
	48 VDC Input (36~72V)			74	
Input surge voltage (1 sec. Max.)	5 VDC Input (4.5~9V)			10	
	12 VDC Input (9~18V)			20	
	24 VDC Input (18~36V)			40	
	48 VDC Input (36~72V)			78	

Product typical Curve

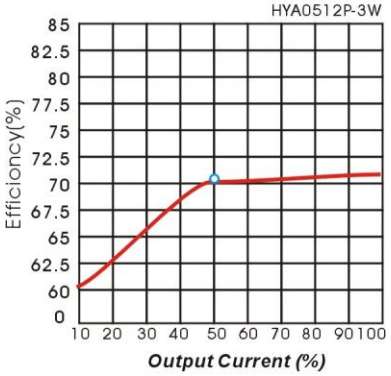
Efficiency VS Input Voltage curve
(Full Load)



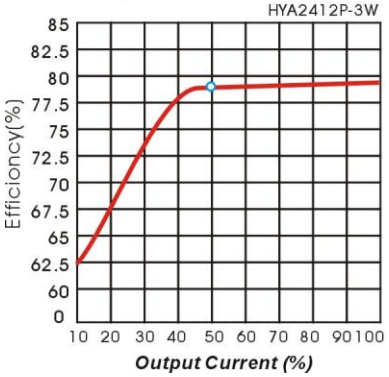
Efficiency VS Output Voltage curve
(Vin=Vin-nominl)



Output Load VS Efficiency curve
(Vin=Vin-nominal)

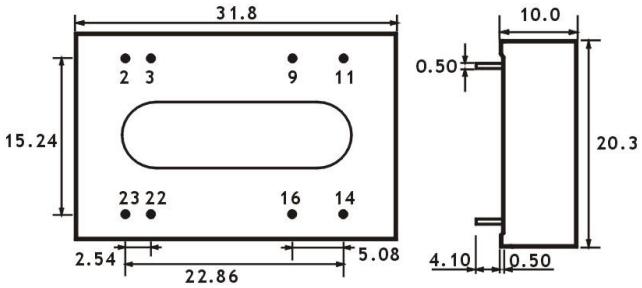


Efficiency VS Output Load curve
(Vin=Vin-nominal)



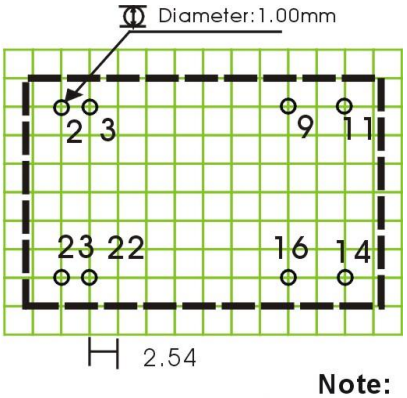
HYAP-3W Series

Mechanical Dimensions & Recommended Footprint



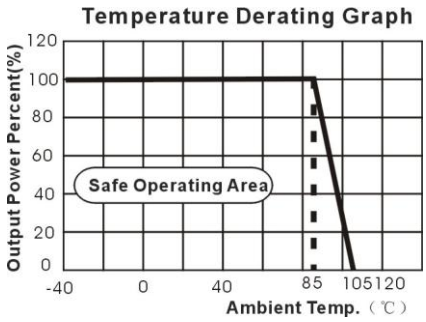
(Bottom view) (Side view)

Package	Vin	GND	-Vo	OV	+Vo
HYAP	22,23	2,3	11	9,16	14

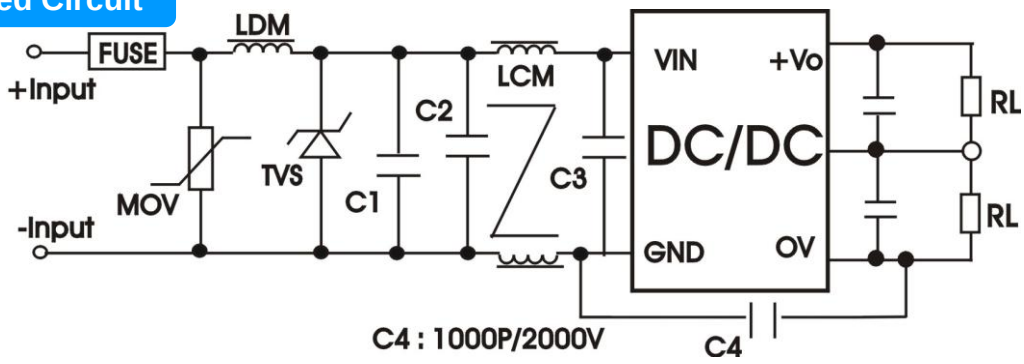


Note:
Unit: mm
General tolerances : 0.20mm

Temperature Derating Graph



EMC Recommended Circuit



EMC Module Application Circuit