

FEATURES :

- 30W DIL Package
- 8:1 Wide Input Voltage Range
- High Efficiency Up To 91%
- Regulated Output Types
- No Minimum Load Required
- Over Power and Short Circuit Protection
- Over Temperature Protection
- Operating Temperature: -40°C To +70°C
- UL94V-0 Package Material
- 100% Burned In
- 3 Years Warranty



electronic powersolutions

DC-DC Converter
YNC30 SERIES

30Watt

1600Vdc Isolated

8 : 1 Input Voltage Range

Single/Dual Output

2" X 1" Size

Specifications typical at TA=25°C, nominal input voltage and rated output current unless otherwise specified

Selection Guide

Part Number	Input Voltage Range	Input Current		Output Voltage	Output Current	Efficiency (@36Vin)	Maximum capacitor Load
		No-Load	Full-Load				
	Vdc	mA (typ)	mA (typ)	Vdc	mA (typ)	% (typ)	µF
YNC30-36S05	9-75	10	916	5	6000	91	10200
YNC30-36S12	9-75	10	916	12	2500	91	1800
YNC30-36S15	9-75	10	916	15	2000	91	1125
YNC30-36S24	9-75	10	916	24	1250	91	450
YNC30-36D12	9-75	10	916	±12	±1250	91	±900
YNC30-36D15	9-75	10	916	±15	±1000	91	±600

Part Number

YNC
30
-
36
S
05
A
B
C
D
E

- A : Series
- B : Output Power
- C : Input Voltage
- D : Single/Dual Output
- E : Output Voltage



Input Specifications

Parameters	Conditions	Min	Typ	Max	Units
Input Voltage		9	36	75	Vdc
Input Surge Voltage (100 ms max.)		-0.7		100	Vdc
Start-up Voltage				9	Vdc
Under Voltage Shutdown			7.5		Vdc
Start-up Time	Constant Resistive Load, Nominal Vin	Power-up		35	ms
		Remote ON/OFF		35	
Input Filter	All Models	Internal Pi type			
Remote ON/OFF (Ctrl PIN Refer To -Vin PIN)	Positive Logic (Standard)	DC/DC ON		Open or 3.5 Vdc – 12 Vdc	
		DC/DC OFF		Short or 0 Vdc – 1.2 Vdc	
	Input Current of Ctrl PIN	-0.5		0.5	mA
Remote Off Input Current		3			

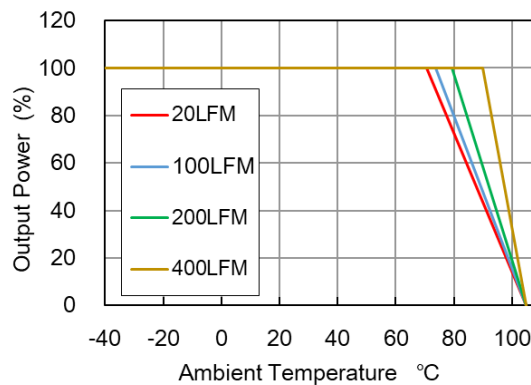
Output Specifications

Parameters	Conditions	Min	Typ	Max	Units
Voltage Tolerance	100% Load	-2		+2	%
Line Regulation	Vin(min) to Vin(max) @100% Load	-0.5		+0.5	%
Load Regulation	0% Load to 100% Load	-0.5		+0.5	%
Ripple & Noise (BW=20MHz)	With an 1uF MLCC	5Vout		100	mVp-p
		12Vout , ±12Vout		120	
		15Vout , ±15Vout		150	
		24Vout		150	
Transient Response Setting Time	25% Load Step Change		350	500	us
Transient Response Deviation	25% Load Step Change	-5	±3	+5	%
Temperature Coefficient		-0.02		+0.02	%/°C
Voltage Adjustability	% of Vout	-10		+10	%
Output Power Protection	% of Io, Hiccup mode, Auto-recovery	115	155	190	%
Short Circuit Protection	Continuous [Hiccup Mode], Auto-Recovery				
Over Voltage Protection	5Vout		6.2		Vdc
	12Vout , ±12Vout		15		
	15Vout , ±15Vout		18		
	24Vout		30		

General Specifications

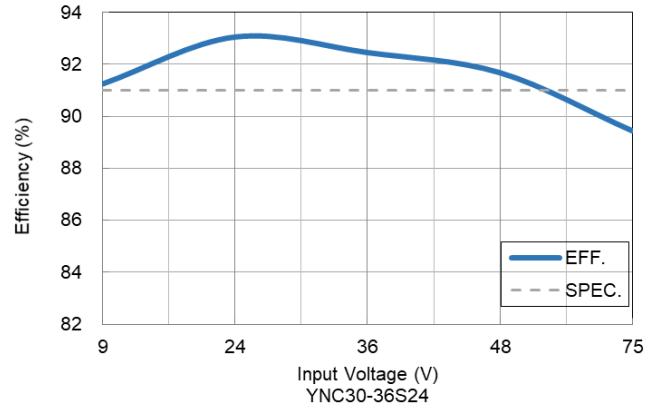
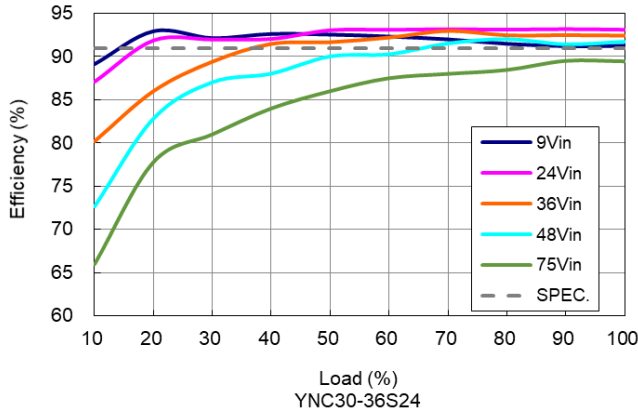
Parameters	Conditions	Min	Typ	Max	Units
Isolation Voltage	Input to Output (60sec)	1600			Vdc
	Input (Output) to Case (60sec)	1000			Vdc
Isolation Resistance	500Vdc	1000			MΩ
Isolation Capacitance	100kHz, 1V			2200	pF
Switching Frequency	Full Load, Nominal Input	5Vout	180		KHz
		Other	210		
Operating Ambient Temperature (Power Derating See Derating Graph)	Nominal Vin, 100% Load	YNC30-36S05, YNC30-36S12 YNC30-36S15, YNC30-36S24 YNC30-36D12, YNC30-36D15	-40	70	°C
Thermal Impedance	20LFM		11.6		°C/W
	100LFM		10.5		
	200LFM		8.7		
	400LFM		5.1		
Maximum Case Temperature				105	°C
Over Temperature Protection	Case temperature		115		°C
Storage Temperature		-55		125	°C
Humidity	Non Condensing	5		95	%
Cooling	Natural Convection				
Case Material	Copper				
Potting Material	Silicone (UL94-V0)				
MTBF	MIL-HDBK-217F@25°C (calculated)		5.73X10 ⁵		Hours
Weight			50		g
Dimensions			50.8 x 25.4 x 11.6		mm

Temperature Derating Graph

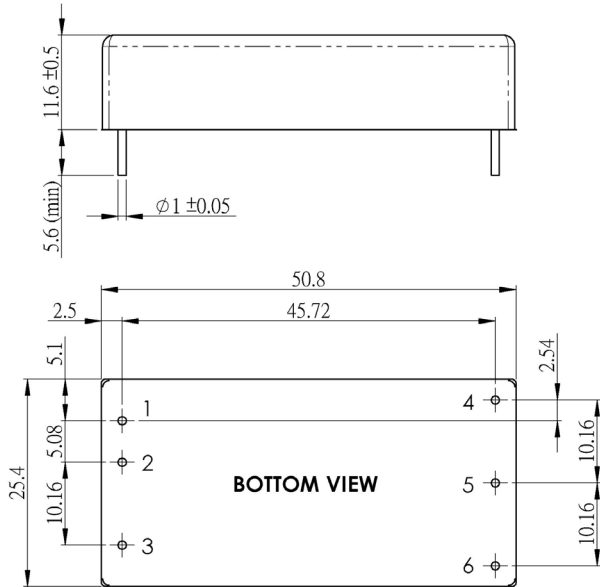


YNC30-36S24

Characteristic Curve



Dimensions

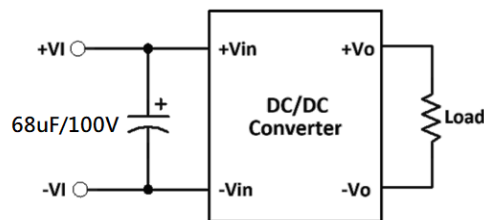


Unit: mm
Tolerance: XX.X ±0.5; XX.XX ±0.25

PIN Assignment

Pin	Single	Dual	Diameter
1	+Vin	+Vin	1.0mm[0.04"]
2	-Vin	-Vin	1.0mm[0.04"]
3	Ctrl	Ctrl	1.0mm[0.04"]
4	+Vout	+Vout	1.0mm[0.04"]
5	-Vout	Com	1.0mm[0.04"]
6	Trim	-Vout	1.0mm[0.04"]

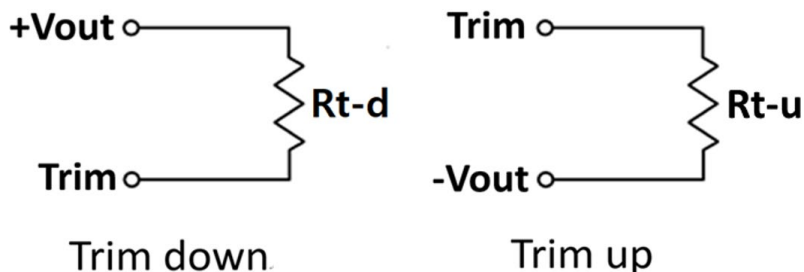
Application Examples



It is necessary to parallel a capacitor across the input pins under normal operation.
Minimum Capacitance: 68µF/100V.

External Output Trimming

Output can be externally trimmed by using the method, shown as below.



Trim Table:

YNC30-36S05											
Trim down	Vout	Vo*99%	Vo*98%	Vo*97%	Vo*96%	Vo*95%	Vo*94%	Vo*93%	Vo*92%	Vo*91%	Vo*90%
	Rt-d =	138.88KΩ	62.41KΩ	36.92KΩ	24.18KΩ	16.53KΩ	11.44KΩ	7.79KΩ	5.06KΩ	2.94KΩ	1.24KΩ
Trim up	Vout	Vo*101%	Vo*102%	Vo*103%	Vo*104%	Vo*105%	Vo*106%	Vo*107%	Vo*108%	Vo*109%	Vo*110%
	Rt-u =	106.87KΩ	47.76KΩ	28.06KΩ	18.21KΩ	12.30KΩ	8.36KΩ	5.55KΩ	3.44KΩ	1.79KΩ	0.48KΩ

YNC30-36S12											
Trim down	Vout	Vo*99%	Vo*98%	Vo*97%	Vo*96%	Vo*95%	Vo*94%	Vo*93%	Vo*92%	Vo*91%	Vo*90%
	Rt-d =	280.90KΩ	125.65KΩ	73.90KΩ	48.02KΩ	32.50KΩ	22.15KΩ	14.76KΩ	9.21KΩ	4.90KΩ	1.45KΩ
Trim up	Vout	Vo*101%	Vo*102%	Vo*103%	Vo*104%	Vo*105%	Vo*106%	Vo*107%	Vo*108%	Vo*109%	Vo*110%
	Rt-u =	225.50KΩ	100.75KΩ	59.17KΩ	38.38KΩ	25.90KΩ	17.58KΩ	11.64KΩ	7.19KΩ	3.72KΩ	0.95KΩ

YNC30-36S15											
Trim down	Vout	Vo*99%	Vo*98%	Vo*97%	Vo*96%	Vo*95%	Vo*94%	Vo*93%	Vo*92%	Vo*91%	Vo*90%
	Rt-d =	499.18KΩ	223.09KΩ	131.06KΩ	85.05KΩ	57.44KΩ	39.03KΩ	25.88KΩ	16.02KΩ	8.35KΩ	2.22KΩ
Trim up	Vout	Vo*101%	Vo*102%	Vo*103%	Vo*104%	Vo*105%	Vo*106%	Vo*107%	Vo*108%	Vo*109%	Vo*110%
	Rt-u =	404.82KΩ	180.91KΩ	106.27KΩ	68.95KΩ	46.56KΩ	31.64KΩ	20.97KΩ	12.98KΩ	6.76KΩ	1.78KΩ

YNC30-36S24											
Trim down	Vout	Vo*99%	Vo*98%	Vo*97%	Vo*96%	Vo*95%	Vo*94%	Vo*93%	Vo*92%	Vo*91%	Vo*90%
	Rt-d =	598.97KΩ	267.93KΩ	157.59KΩ	102.42KΩ	69.31KΩ	47.24KΩ	31.48KΩ	19.66KΩ	10.46KΩ	3.11KΩ
Trim up	Vout	Vo*101%	Vo*102%	Vo*103%	Vo*104%	Vo*105%	Vo*106%	Vo*107%	Vo*108%	Vo*109%	Vo*110%
	Rt-u =	486.83KΩ	217.87KΩ	128.21KΩ	83.38KΩ	56.49KΩ	38.56KΩ	25.75KΩ	16.14KΩ	8.67KΩ	2.69KΩ