

**SERIES: VYC30W-T | DESCRIPTION: DC-DC CONVERTER**
**FEATURES**

- chassis mount with screw terminal connectors
- up to 30 W output
- compact size
- 4:1 input range (9~36 V, 18~75 V)
- single and dual outputs
- 1,500 V isolation
- short circuit, over current, and over voltage protection
- wide temperature operation (-40~85°C)
- efficiency up to 88%



MODEL	input voltage range	output voltage	output current max	output power max	ripple and noise <sup>1</sup> max	efficiency typ
	(Vdc)	(Vdc)	(A)	(W)	(mVp-p)	(%)
VYC30W-Q24-S5-T	9 ~ 36	5	6	30	120	87
VYC30W-Q24-S12-T	9 ~ 36	12	2.5	30	120	88
VYC30W-Q24-S15-T	9 ~ 36	15	2	30	120	87
VYC30W-Q24-D5-T	9 ~ 36	±5	±3	30	120	86
VYC30W-Q24-D12-T	9 ~ 36	±12	±1.25	30	120	88
VYC30W-Q24-D15-T	9 ~ 36	±15	±1	30	120	87
VYC30W-Q48-S5-T	18 ~ 75	5	6	30	120	87
VYC30W-Q48-S12-T	18 ~ 75	12	2.5	30	120	88
VYC30W-Q48-S15-T	18 ~ 75	15	2	30	120	87
VYC30W-Q48-D5-T	18 ~ 75	±5	±3	30	120	86
VYC30W-Q48-D12-T	18 ~ 75	±12	±1.25	30	120	88
VYC30W-Q48-D15-T	18 ~ 75	±15	±1	30	120	87

Notes: 1. Ripple and noise are measured at 20 MHz BW with 10μF tantalum capacitor and 1μF ceramic capacitor across output

**PART NUMBER KEY**

**VYC30W - QXX - XXX - X - T**

Base Number

Input Voltage

Output  
S = single output  
D = dual output

Output Voltage

Heatsink  
"blank" = No  
H = Yes

## INPUT

parameter	conditions/description	min	typ	max	units
operating input voltage		9	24	36	Vdc
		18	48	75	Vdc
start-up time			10		ms
under voltage lockout	power up 24 V input			9.0	Vdc
	power up 48 V input			17.8	Vdc
	power down 24 V input	8			Vdc
	power down 48 V input	16.0			Vdc
Remote on/off <sup>1</sup>	module off	0		1.2	Vdc
	module on (or open circuit)	3.5		12	Vdc
filter	PI type				

Notes: 1. The on/off pin voltage is referenced to GND

## OUTPUT

parameter	conditions/description	min	typ	max	units
line regulation	measured from low line to high line		±0.2	±0.5	%
load regulation	measured from 10% to full load		±0.5	±1	%
voltage accuracy	refer to recommended circuit		±1	±3	%
transient recovery time	25% step load charge		300	500	µs
transient peak deviation	25% rated load		300		µs
cross regulation	dual output models main output 50%, supplemental output from 10~100% load			±5	%
adjustability			±10%		Vdc
switching frequency	100% load, input voltage range		400		kHz
temperature coefficient			±0.02		%/°C

## PROTECTIONS

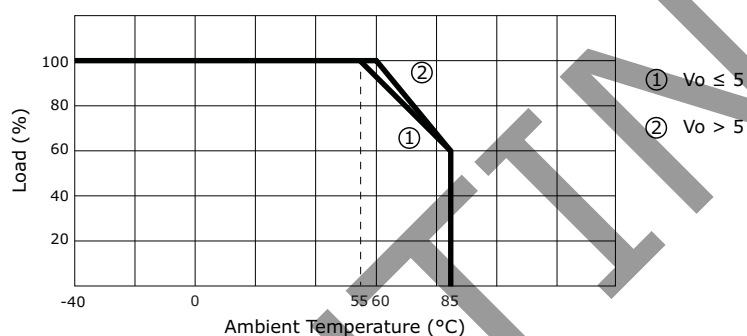
parameter	conditions/description	min	typ	max	units
short circuit protection	hiccup, automatic recovery				
over current protection	all models input voltage range		130		%
over voltage protection	single and dual output models	5 V	6.1		Vdc
		12 V	15		Vdc
		15 V	18		Vdc

## SAFETY AND COMPLIANCE

parameter	conditions/description	min	typ	max	units
isolation voltage	tested for 1 minute at 1 mA max.	1,500			Vdc
isolation resistance	at 500 Vdc	1,000			MΩ
isolation capacitance	input to output, 100 kHz / 0.1 V		2,000		pF
RoHS compliant	yes				
MTBF	M1L-HDBK-217F	1,000,000			hours

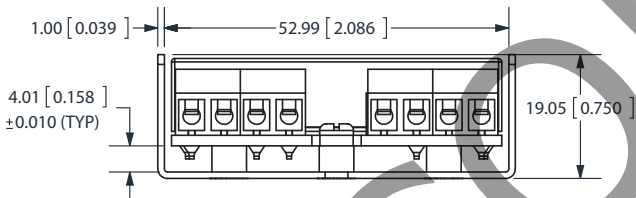
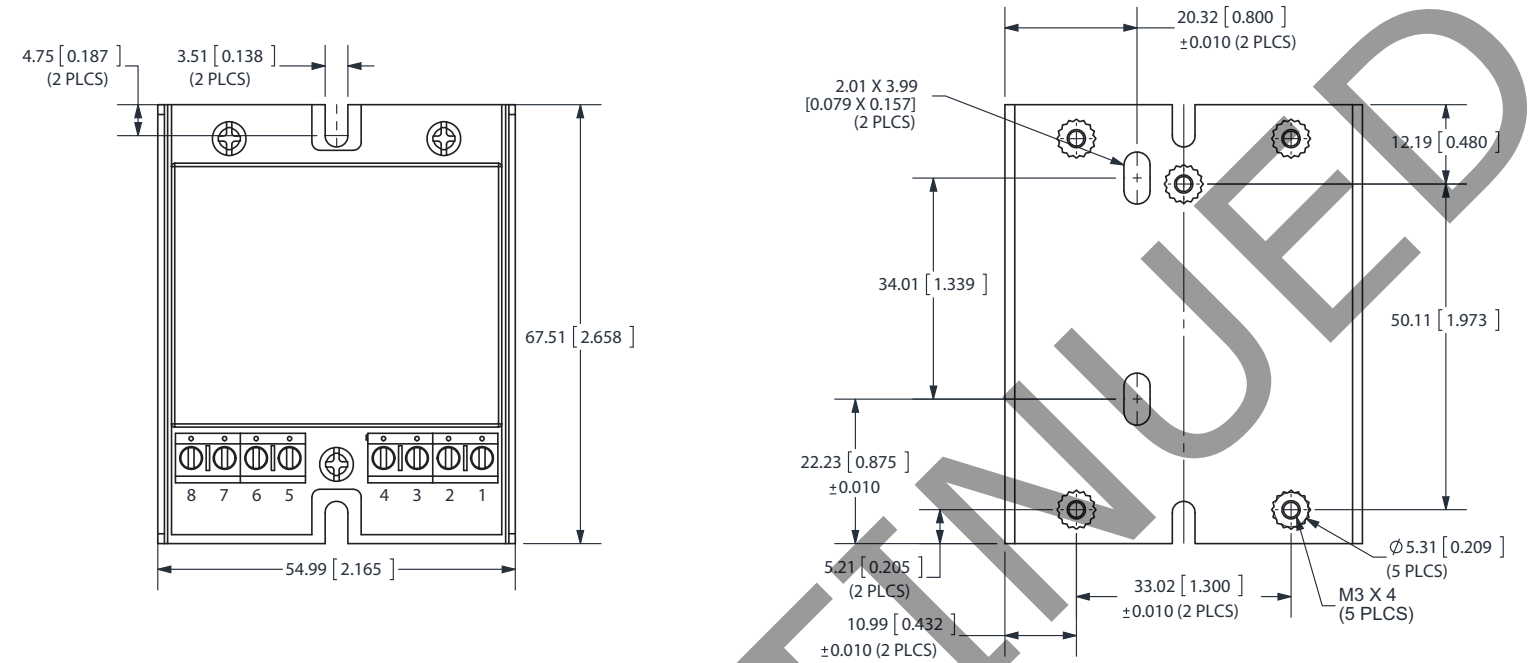
**ENVIRONMENTAL**

parameter	conditions/description	min	typ	max	units
case operating temperature		-40		85	°C
maximum case temperature	during operation			105	°C
storage temperature		-40		125	°C
storage humidity	non-condensing	5		95	%

**DERATING CURVES****output power vs. ambient temperature****MECHANICAL**

parameter	conditions/description	min	typ	max	units
dimensions	2.17 x 2.66 x 0.75 inch (55.0 x 67.5 x 19.1 mm)				
case material	aluminum				
weight			83.5		g

## MECHANICAL DRAWING



PIN CONNECTIONS		
Pin	Single	Dual
1	+Vo	+Vo
2	-Vo	0V
3	Trim	-Vo
4	No Pin	Trim
5	Case	Case
6	On/Off	On/Off
7	GND	GND
8	Vin	Vin

Unit: mm[inch]

TOLERANCE: ±0.5mm [±0.020 inch] UNLESS OTHERWISE SPECIFIED

Screw terminals: Degson Electronics terminal block part number

DG301-5.0-04P-12 or equivalent (4 pin, M2.5 screw) 5.0 mm spacing

\*DIN rail mounting kit available (part # STK-DIN)

## APPLICATION NOTES

### 1. EMI & EMS recommended external circuit

	Single output, 18 ~ 75 Vin	Single output, 9 ~ 36 Vin	Dual output, 18 ~ 75 Vin	Dual output, 9 ~ 36 Vin
TVS	SMCJ90A,1500W(Bringtking)	SMCJ48A,1500W(Bringtking)	SMCJ90A,1500W(Bringtking)	SMCJ48A,1500W(Bringtking)
LCM	232uH(0.1V 100KHz) 15T core: N5 T12*6*4	232uH(0.1V 100KHz) 15T core: N5 T12*6*4	232uH(0.1V 100KHz) 15T core: N5 T12*6*4	232uH(0.1V 100KHz) 15T core: N5 T12*6*4
C0	680µF/1000V (CapXon)	1000µF/50V(CapXon)	680µF/100V (CapXon)	1000µF/50V(CapXon)
C1	105K/100V 1210(TDK)	105K/100V 1210(TDK)	105K/100V 1210(TDK)	105K/100V 1210(TDK)
C2	225K/100V 1210(TDK)	225K/100V 1210(TDK)	225K/100V 1210(TDK)	225K/100V 1210(TDK)
C3	No component	No component	102K/2000V 1206 (TDK)	102K/2000V 1200 (TDK)
C4	No component	No component	102K/2000V 1206 (TDK)	102K/2000V 1206 (TDK)

Figure 1 (Single output)

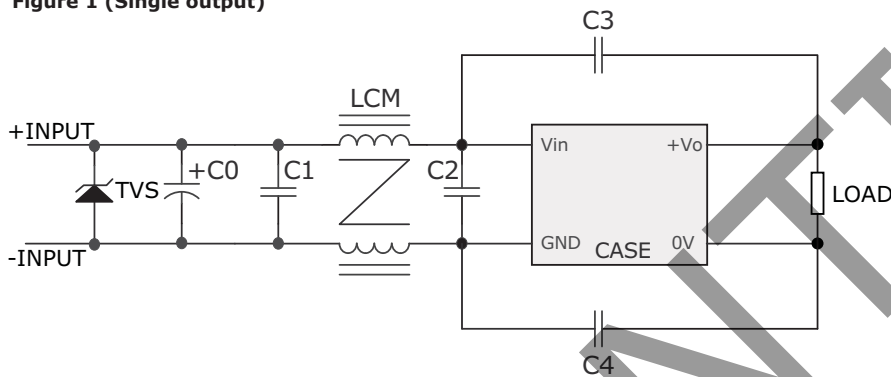
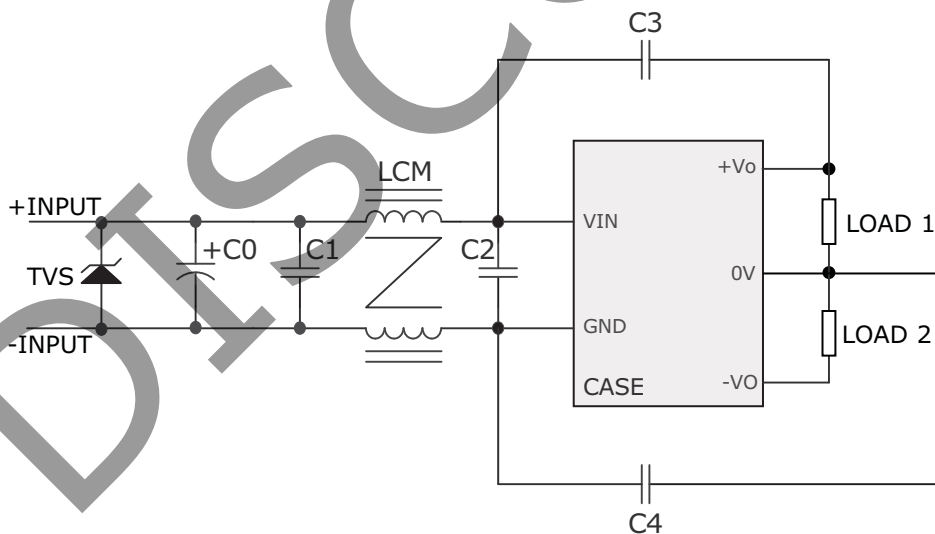


Figure 2 (Dual output)



## REVISION HISTORY

rev.	description	date
1.0	initial release	08/23/2011
1.01	added VYC30W-Q24-D5-T and VYC30W-Q48-D5-T	03/08/2012
1.02	V-Infinity branding removed	08/29/2012

The revision history provided is for informational purposes only and is believed to be accurate.



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