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%



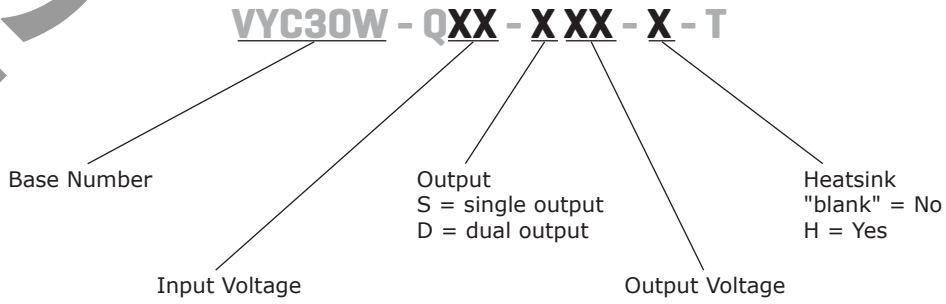
RoHS

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MODEL	input voltage range (Vdc)	output voltage (Vdc)	output current max (A)	output power max (W)	ripple and noise[1] max (mVp-p)	efficiency typ (%)
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



Please read our datasheet & drawing disclaimer here.

INPUT

parameter	conditions/description		min	typ	max	units
operating input voltage			9 18	24 48	36 75	Vdc Vdc
start-up time				10		ms
under voltage lockout		power up 24 V input power up 48 V input power down 24 V input power down 48 V input	 8 16.0		9.0 17.8 	Vdc Vdc Vdc Vdc
Remote on/off[1]		module off module on (or open circuit)	0 3.5		1.2 12	Vdc 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	hiccups, automatic recovery					
over current protection	all models	input voltage range		130		%
over voltage protection	single and dual output models	5 V 12 V 15 V		6.1 15 18		Vdc Vdc 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

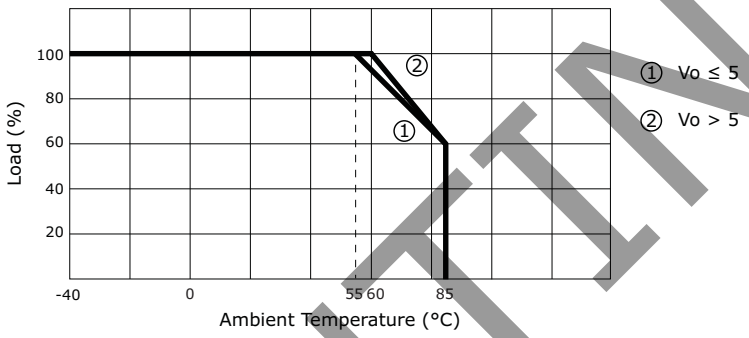
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ENVIRONMENTAL

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

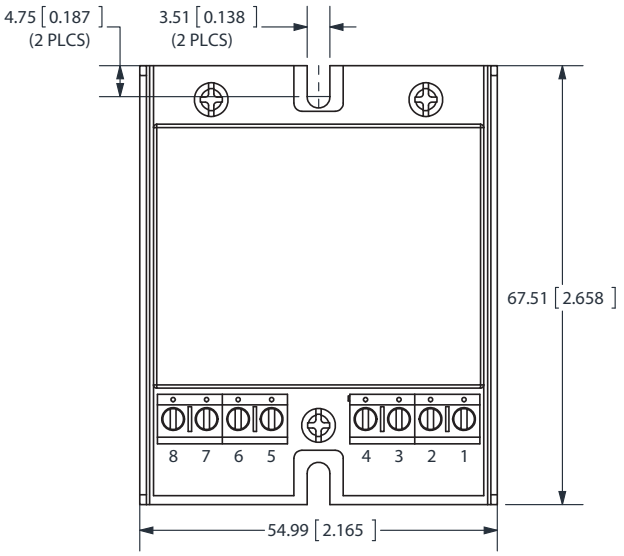


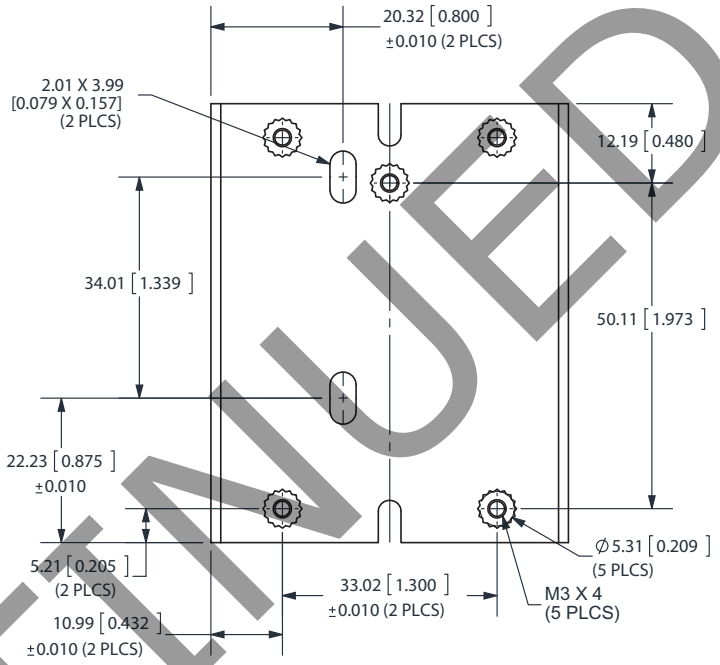
MECHANICAL

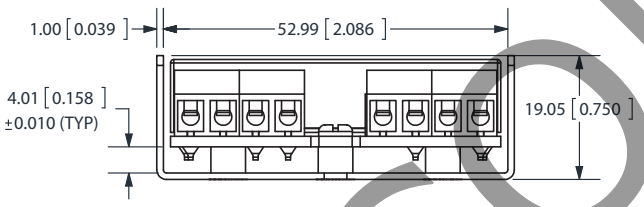
parameter	conditions/description	min	typ	max	units
dimensions	2.17 x 2.66 x 0.75 inch (55.0 x 67.5 x 19.1 mm)				
case material	aluminum				
weight			83.5		g

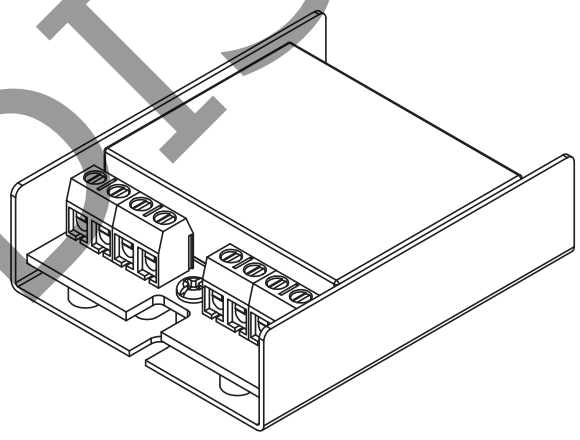
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MECHANICAL DRAWING









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)

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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)

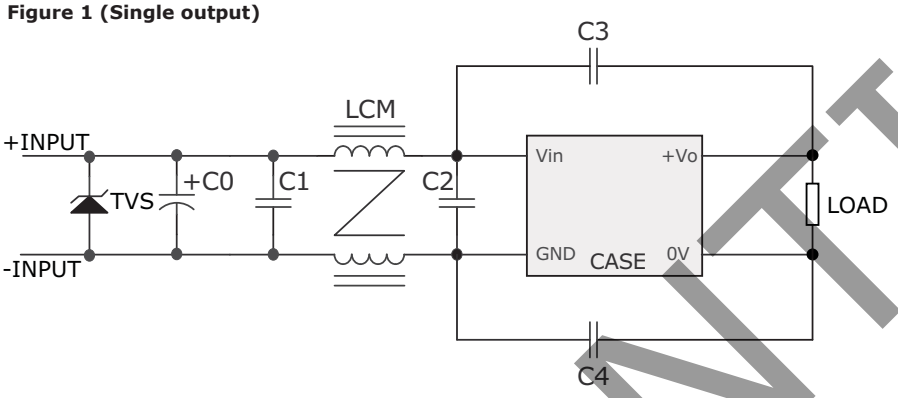
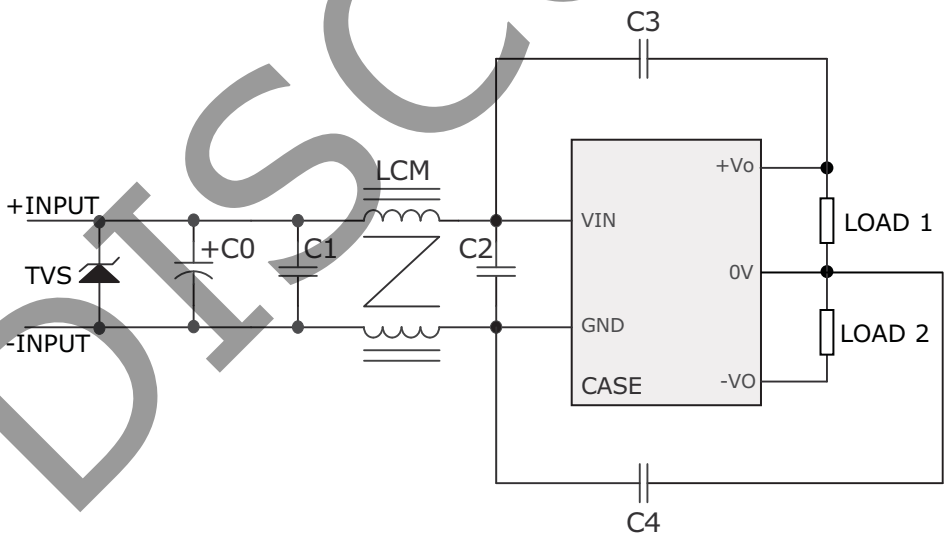


Figure 2 (Dual output)



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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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