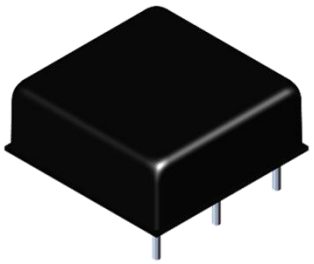
DC-DC Converter
D15-(2)DA4 Series

DESCRIPTION

The series of DC-DC switching power supplies in a package of 25.4x25.4x10 mm are capable of delivering 15 watts. They are designed for industry control application, tele-communication, energy battery power application, regulated and low ripple noise is required.



FEATURES

- 4:1 Wide input range voltage
- 1x1" package; metal case
- Efficiency up to 90%
- -40°C to +100°C operating temperature
- EMI class A without external circuit
- No minimum load requirement
- Ultra low standby power

WATTAGE

Wattage: 15W

DIMENSION

Dimension: 25.4 (L) x 25.4(W) x 10.0(H)mm

SAFETY STANDARD APPROVAL

Meet EN62368-1

ENVIROMENTAL SPECIFICATION

Operating temperature: -40˚C to +100˚C

Storage temperature: -55˚C to +105˚C

SELECTION GUIDE

Part number	Input voltage	Output voltage	Output current @ full load	Input current @ no load	Efficiency (1) (typ.)	Capacitive load (2) (max.)
D15-DA4-AP	9-36 VDC Nom. 24 VDC	5 VDC	3000mA	7mA	88%	6400uF
D15-DA4-AH		12 VDC	1250mA		88%	1200uF
D15-DA4-AG		15 VDC	1000mA		89%	900uF
D15-DA4-AA		24 VDC	625mA		89%	240uF
D15-2DA4-AH		±12 VDC	±625mA		87%	±520uF
D15-2DA4-AG		±15 VDC	±500mA		89%	±330uF
D15-DA4-FP	18-75 VDC Nom. 48 VDC	5 VDC	3000mA	5mA	88%	6400uF
D15-DA4-FH		12 VDC	1250mA		89%	1200uF
D15-DA4-FG		15 VDC	1000mA		89%	900uF
D15-DA4-FA		24 VDC	625mA		90%	240uF
D15-2DA4-FH		±12 VDC	±625mA		89%	±520uF
D15-2DA4-FG		±15 VDC	±500mA		89%	±330uF

1. The efficiency is test by nominal input and max. full load @25˚C.
2. The capacitive load is test by minimum input and constant resistive load.
3. Special input and output voltage combinations available by request, please check with our sales.

SPECIFICATION

	Parameter	Conditions	Min.	Typ.	Max.	Unit
Input	Input filter		Pi type			
	Voltage range		4 : 1			
	Start-up time	Nom. Vin and constant resistive load		20	25	ms
	Under voltage lockout	24V 48V		7.5 16		VDC VDC
	Input surge voltage	24V 48V		50 100		VDC VDC
Output	Voltage accuracy				±1	%
	Line voltage regulation (LL-HL at Full load)	Single			±0.2	%
		Dual			±0.5	%
	Load voltage regulation (10% load to 100% load)	Single			±0.5	%
		Dual			±1.0	%
	Cross regulation				±5	%
	Minimum load				0	%
	Ripple & noise	24V input 48V input			60 100	mVp-p mVp-p
	Operating frequency			350		KHz
Environment	Operating temperature	With de-rating	-40		100	˚C
	Storage temperature		-55		105	˚C
	Max. case temperature				105	˚C
	MTBF (MIL-HDBK-217F)	25˚C	900			KHrs
Function	Short Circuit Protection		Continuous, automatic recovery			
	Isolation test voltage		1600			VDC
	Isolation capacitance			1200		pF
	Isolation resistance		1000			MΩ

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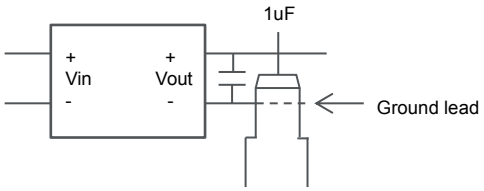
	Parameter	Conditions	Min.	Typ.	Max.	Unit
	Over load protection	24V input		170		%
		48V input		190		%
	Safety		EN 62368-1			
	Remote on/off	DC-DC on	Open or 3.5~15VDC			
		DC-DC off	Short or 0~1.2VDC			
	Remote on/off input current	Remote off	2mA			
Physical	Dimension		25.4x25.4x10 mm			
	Weight			17		g
	Cooling method		Free air convection			
	Case material		Metal case			
EMC	EMI	EN55032	Class A filter build in Class B with external circuit			
	ESD	EN61000-4-2, Contact±6kV, Air±8kV	Criteria A			
	Radiated immunity	EN61000-4-3	Criteria A			
	Fast transient	EN61000-4-4, ±2kV	Criteria A			
	Surge	EN61000-4-5, ±2kV	Criteria A			
	Conducted immunity	EN61000-4-6	Criteria A			

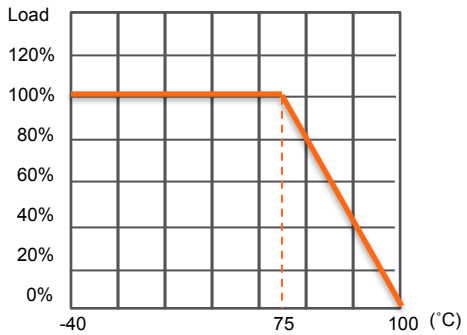
1. The external circuit, please contact our sales.
2. All specifications valid at nominal input voltage, full load and 25˚C after warm-up time unless otherwise stated.
3. The product information and specifications are subject to change without prior notice.

RIPPLE & NOISE

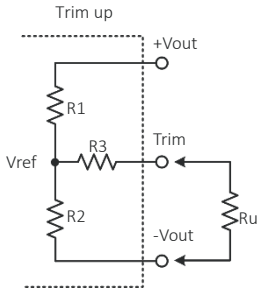


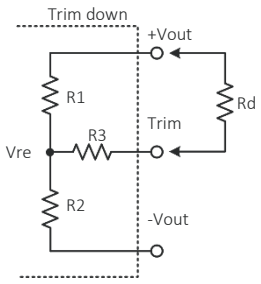
DERATING CURVE

Ambient temperature nature convection (Nominal Vin)



EXTERNAL OUTPUT VOLTAGE TRIMMING



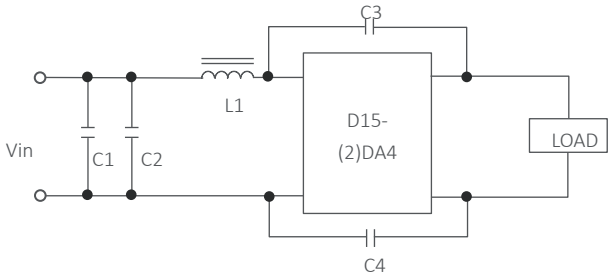


$$Ru=\frac{aR_2}{R_2-a}-R_3 \quad a=\frac{V_{ref}}{V_o'-V_{ref}}\cdot R_1$$

$$Rd=\frac{bR_1}{R_1-b}-R_3 \quad b=\frac{V_o'-V_{ref}}{V_{ref}}\cdot R_2$$

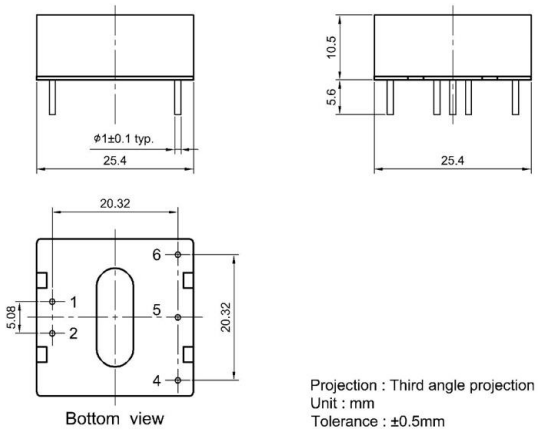
Vout	R1	R2	R3	Vref
5V	10 kΩ	10 kΩ	35.7 kΩ	2.5 V
12V	38.1 kΩ	10 kΩ	48.7 kΩ	2.5 V
15V	50.1 kΩ	10 kΩ	51 kΩ	2.5 V
24V	86.32 kΩ	10 kΩ	73.2 kΩ	2.5 V

EMI FILTERING SUGGESTION



	24Vin	48Vin
C1	2.2μF	2.2μF
C2	2.2μF	2.2μF
C3	1500pF	1500pF
C4	1500pF	1500pF
L1	4.7μH	4.7μH

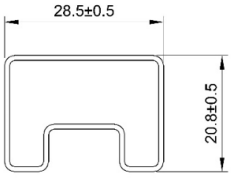
MECHANICAL SPECIFICATION



Projection : Third angle projection
Unit : mm
Tolerance : ±0.5mm

Pin	Single	Dual
1	+Vin	+Vin
2	-Vin	-Vin
3	CTRL	CTRL
4	-Vout	-Vout
5	Trim	Common
6	+Vout	+Vout

PACKAGE



UNIT:mm
1 Tube = 8 pcs
Length:260±2mm