



## 3 Watt Medical DC/DC Converters Series DVE32B-MED



### Features

- 3 Watt Isolated Output
- Regulated Outputs
- 2:1 Wide Input Range
- Continuous Short Circuit Protection
- Operating Temperature Range -40°C to +85°C
- Efficiency up to 84%
- Industrial & Medical Safety UL60601-1
- Meet CSA60950-1
- Meet EMI EN55022 Class A (with external coupling capacitor  $C_{io}=1nF < EN55022$  Class B)

MODEL NUMBER	INPUT VOLTAGE [ VDC ]	OUTPUT VOLTAGE [ VDC ]	OUTPUT CURRENT MAX. [ mA ]	OUTPUT CURRENT MIN. [ mA ]	INPUT CURRENT NO LOAD [ mA ]	INPUT CURRENT FULL LOAD [ mA ]	EFF. TYP. [ % ]	CAP. LOAD MAX. [ $\mu$ F ]	CASE
DVE4,5-9-05S600BMED	4,5 – 9	5	600	60	40	834	72	1000	B
DVE4,5-9-12S250BMED		12	250	25	40	790	76	470	
DVE4,5-9-15S200BMED		15	200	20	40	780	77	470	
DVE4,5-9-05D300BMED		$\pm 5$	$\pm 300$	$\pm 30$	40	834	72	470	
DVE4,5-9-12D125BMED		$\pm 12$	$\pm 125$	$\pm 12,5$	40	790	76	220	
DVE4,5-9-15D100BMED		$\pm 15$	$\pm 100$	$\pm 10$	40	790	76	220	
DVE9-18-05S600BMED	9 – 18	5	600	60	30	334	75	1000	B
DVE9-18-12S250BMED		12	250	25	30	313	80	470	
DVE9-18-15S200BMED		15	200	20	30	309	81	470	
DVE9-18-05D300BMED		$\pm 5$	$\pm 300$	$\pm 30$	30	334	75	470	
DVE9-18-12D125BMED		$\pm 12$	$\pm 125$	$\pm 12,5$	30	313	80	220	
DVE9-18-15D100BMED		$\pm 15$	$\pm 100$	$\pm 10$	30	313	80	220	
DVE18-36-05S600BMED	18 – 36	5	600	60	15	161	78	1000	B
DVE18-36-12S250BMED		12	250	25	15	151	83	470	
DVE18-36-15S200BMED		15	200	20	15	149	84	470	
DVE18-36-05D300BMED		$\pm 5$	$\pm 300$	$\pm 30$	15	161	78	470	
DVE18-36-12D125BMED		$\pm 12$	$\pm 125$	$\pm 12,5$	15	151	83	220	
DVE18-36-15D100BMED		$\pm 15$	$\pm 100$	$\pm 10$	15	151	83	220	
DVE36-72-05S600BMED	36 – 72	5	600	60	10	81	78	1000	B
DVE36-72-12S250BMED		12	250	25	10	76	83	470	
DVE36-72-15S200BMED		15	200	20	10	75	84	470	
DVE36-72-05D300BMED		$\pm 5$	$\pm 300$	$\pm 30$	10	81	78	470	
DVE36-72-12D125BMED		$\pm 12$	$\pm 125$	$\pm 12,5$	10	76	83	220	
DVE36-72-15D100BMED		$\pm 15$	$\pm 100$	$\pm 10$	10	76	83	220	

Note:

Nominal Input Voltage: 5, 12, 24 & 48Vdc

Technische Änderungen vorbehalten / Technical change reserved

## INPUT SPECIFICATIONS:

Input Voltage Range	5V	4,5 to 9VDC
	12V	9 to 18VDC
	24V	18 to 36VDC
	48V	36 to 72VDC
Power ON/OFF Voltage Range	5V ON	3,7V min./4V typ./4,5V max.
	5V OFF	4V max.
	12V ON	7V min./8V typ./9V max.
	12V OFF	8,5V max.
	24V	15V min./17V typ./18V max.
	24V OFF	17V max.
	48V ON	30V min./33V typ./36V max.
	48V OFF	34V max.
Reflected Ripple of Input Current	Vin5V	60mA typ.
	Vin12V	30mA typ.
	Vin24V	15mA typ.
	Vin48V	10mA typ.
Short Circuit Input Power		2000mW
Input Filter		Pi Network
Input Fuse Selection Guide	Vin 5V	2000mA Slow-Blow Type
	Vin 12V	1000mA Slow-Blow Type
	Vin 24V	500mA Slow-Blow Type
	Vin 48V	250mA Slow-Blow Type

## OUTPUT SPECIFICATIONS:

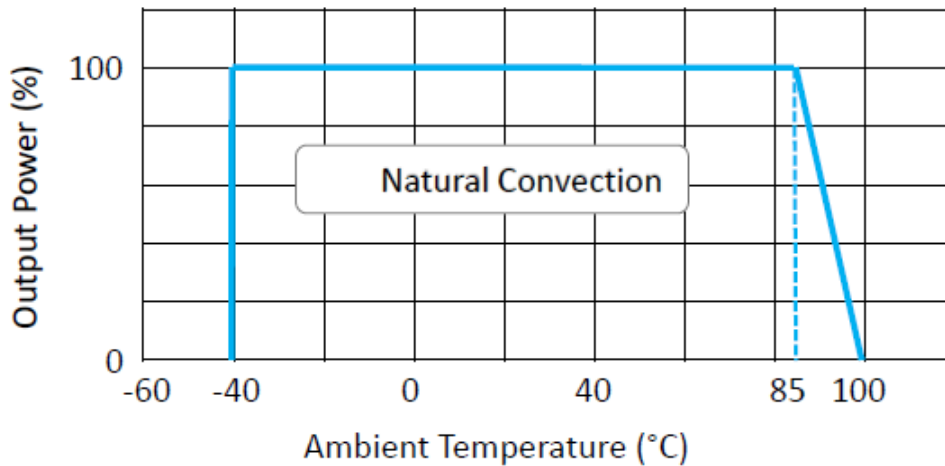
Voltage Accuracy	Vin-Nominal, Max. Load	+/-1,0%max.
Voltage Balance (Dual Output)	Vin Low to Vin High	+/-2,0%max.
Temperature Coefficient		0,02%/°C max.
Ripple and Noise, 20 MHz BW ( Note2 )	Single Outputs	50mV p-p max.
	Dual Outputs	75mV p-p max.
Short Circuit Protection		Continuous, Auto-Recovery
Line Regulation	From Vin Low to Vin High, Max. Load	±0,5%
Load Regulation	From Full Load to 10% Load, Vin Nominal	±1,0%
Transient Recovery Time	Vin Nominal, 25% Load Step Change	500µsec.
Transient Response Deviation	Vin Nominal, 25% Load Step Change	±6% Vo
Over Power Protection	Vin Low to Vin High	110%Io

## GENERAL SPECIFICATIONS:

Efficiency		See Table
Isolation Voltage I/O	60sec	5600 VDC min.
Isolation Resistance I/O		1Gohm min.
Isolation Capacitance I/O		13pF max.
Switching Frequency		110KHz min./130KHz typ./150KHz max.
Operating Temperature Range		-40°C to +85°C
Derating above 85°C		Linearly to Zero Power at 100°C
Operating Case Temperature		90°C max.
Cooling		Natural Convection
Storage Temperature Range		-55°C to +125°C
Humidity		95% RH max. Non condensing
MTBF	Vin Nominal, Max. Load, 25°C	1 Mhrs typ.
EMI / RFI ( Conductive )		Meet EN55022 Class A
	with external coupling capacitor Cio=1nF<B	Meet EN55022 Class B
Dimensions		( 1,25 x 0,80 x 0,41 inches ) 31,8 x 20,3 x 10,4 mm
Case Material		Non-Conductive Black Plastic ( Meets UL94V-0 )
Weight		14 g

### Note:

1. When Load is lower than Min. Output Current or under No-Load, will not damage these devices, however, it may not meets all specifications.
  2. Output Ripple & Noise Test please use a Cout 0,47µF ceramic capacitor and refers to proposed test-method.
  3. An external fuse is needed at the front end of DC/DC converter for protection and base on surge current and maximum input current when settle it in recommended.
  4. Total Capacitive Load of Output should be lower than this value.
- All Specifications typical at nominal line, constant resistive load between min. and max. output current and probe bandwidth should be under 20MHz, Ta=25°C.



Case B

Note:

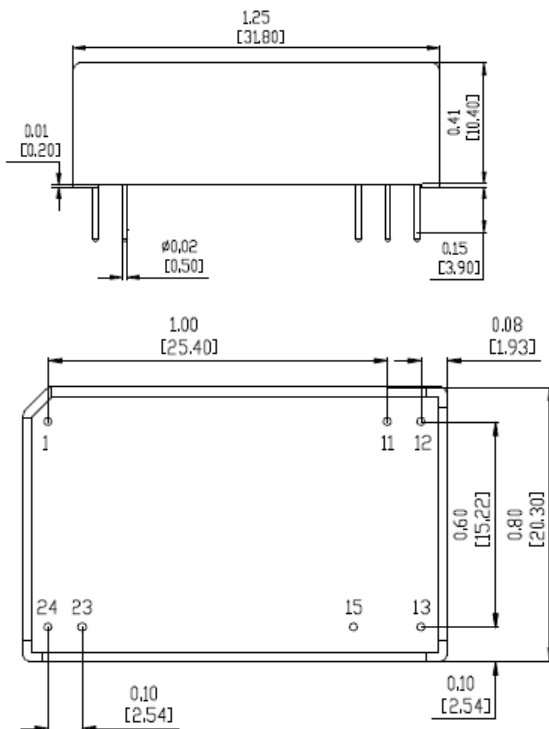
All dimensions in inch [mm]

Tolerance : XX.X ± 0.01 [XX.X ± 0.25]

XX.XX ± 0.005 [XX.XX ± 0.13]

Pin pitch tolerance ±0.01 [±0.25]

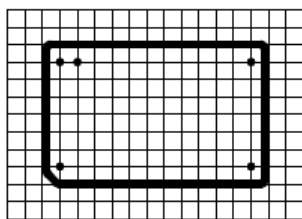
Pin dimension tolerance ±0.004 [±0.1]



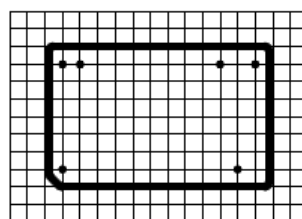
PIN CONNECTION		
Pin	Single Output	Dual Output
1	+V Input	+V Input
11	NP	Common
12	-Vout	NP
13	+Vout	-Vout
15	NP	+Vout
23	-V Input	-V Input
24	-V Input	-V Input

\*NP-NO PIN

\*NC-NO CONNECTION WITH PIN



Single Output



Dual Output

Grid : 0.1 inch / 2.54 mm

Dot(Drill Hole) : φ0.8 +0.2/-0 mm