

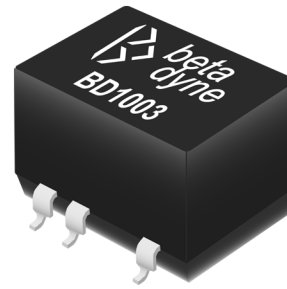


# BD1003

## 1W SINGLE DC/DC CONVERTER

### Functional Description

The BD1003 unregulated 1W single DC/DC converter has an input voltage range of  $27V_{IN}$  to  $41V_{IN}$  and an output voltage of  $5.5V_{OUT}$  @  $27V_{IN}$ . The converter features industry standard pinout in an SMD package with a minimum isolation voltage of 1000Vdc, typical efficiency of 84% and operating temperature range from  $-40^{\circ}C$  to  $+85^{\circ}C$ .



### Electrical Specifications: Unregulated

#### INPUT SPECIFICATIONS

Measured at  $25^{\circ}C$  with the condition of  $V_{IN}$  = Nominal and Full Load. Specifications subject to change without notice.

PARAMETER	CONDITION / NOTE	MIN	TYP	MAX	UNIT
Input Voltage Range		27		41	Vdc
Input Filter	Capacitor				

#### OUTPUT SPECIFICATIONS

PARAMETER	CONDITION / NOTE	MIN	TYP	MAX	UNIT
Output Voltage	$V_{IN} = 27V_{dc}$ , $I_O = 150mA$		5.5		Vdc
Output Current			50	150	mA
Input/Output Voltage Ratio Accuracy				$\pm 5$	%
Ripple & Noise	20MHz BW			100	mV <sub>pp</sub>
Line Regulation	Minimum $V_{IN}$ to maximum $V_{IN}$		1.2%		per 1% of $V_{IN}$
Load Regulation	10% FL to FL		5	15	%
Short Circuit Protection			1		sec

#### GENERAL SPECIFICATIONS

PARAMETER	CONDITION / NOTE	MIN	TYP	MAX	UNIT
Efficiency @ FL		70	84		%
Isolation Voltage, Input to Output		1000			Vdc
Isolation Resistance			10		G $\Omega$
Isolation Capacitance			45		pF
Operating Frequency		50			kHz

#### ENVIRONMENTAL SPECIFICATIONS

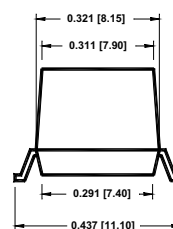
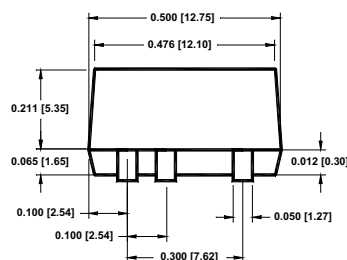
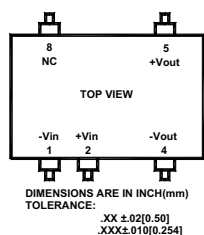
PARAMETER	CONDITION / NOTE	MIN	TYP	MAX	UNIT
Operating Temperature Range	Ambient	-40		+85	$^{\circ}C$
Storage Temperature Range		-55		+125	$^{\circ}C$

#### PHYSICAL CHARACTERISTICS

PARAMETER	CONDITION / NOTE	MIN	TYP	MAX	UNIT
Dimensions (L×W×H)	0.50×0.32×0.28 in. (12.75×8.15×7.00mm)				
Weight	0.053 oz. (1.5g)				

### Mechanical Specifications

Reflow Temp =  $280^{\circ}C$  (10 sec.)



Pin	Function
1	$-V_{IN}$ (GND)
2	$+V_{IN}$
4	$-V_{OUT}$
5	$+V_{OUT}$
8	NC