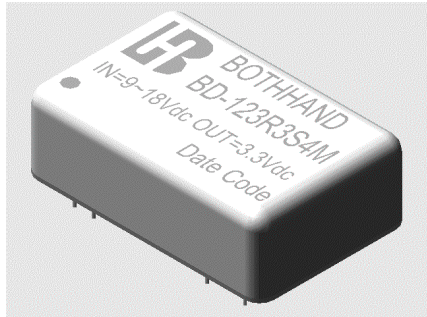


1. Features :

<ul style="list-style-type: none"> ■ Wide 2 : 1 Input Range 	
<ul style="list-style-type: none"> ■ Low Ripple and Noise 	
<ul style="list-style-type: none"> ■ Input / Output Isolation 1.5K Vdc or 3.5K Vdc 	
<ul style="list-style-type: none"> ■ 100 % Burn-In 	
<ul style="list-style-type: none"> ■ Input π - Filter 	
<ul style="list-style-type: none"> ■ Custom Design Available 	

2. Absolute maximum ratings :

(Exceeding these values may damage the module. These are not continuous operating ratings)

Parameter	Condition	Min.	Typ.	Max.	Unit
Input Absolute Voltage Range	12V Input Model	-0.7	12	22.5	Vdc
	24V Input Model	-0.7	24	45	
	48V Input Model	-0.7	48	90	
Output Short circuit duration	Nominal Input Range	Indefinite & Auto-Restart			
Reverse Polarity Input current Limit	---	---	---	1	A
Operating temperature	Output Full Load	-25	---	+71	°C
Storage temperature		-55	---	+105	

3. Nominal Input / Output Electrical Specifications :

(Specifications typical at Ta = +25°C , nominal input voltage, rated output current unless otherwise noted)

Parameter	Condition	Min.	Typ.	Max.	Unit
Input Voltage Range	12V Input Model	9	12	18	Vdc
	24V Input Model	18	24	36	
	48V Input Model	36	48	75	
Line Regulation	Output full Load	---	---	± 0.5	%
Load Regulation	Single Output Model	---	---	± 0.5	
	Dual Output Model			± 2	
Output Voltage Accuracy	Nominal Input	---	± 1.0	± 2.0	
Output Voltage Balance	Dual Output at same Load	---	---	± 1.0	
Switching Frequency	Nominal Input	---	250	---	KHz
Temperature Coefficient		---	± 0.01	± 0.02	% / °C
Isolation Voltage	Standard Series	1500	---	---	Vdc
	High Isolation Series	3500	---	---	
Isolation Resistance	500 Vdc	1000	---	---	MΩ
Isolation Capacitance	1 KHz / 250 mV rms	---	350	---	pF

4. Single Output Selection Guide :

(Specifications typical at Ta = +25 °C, Nominal input voltage, Rated output current unless otherwise noted)

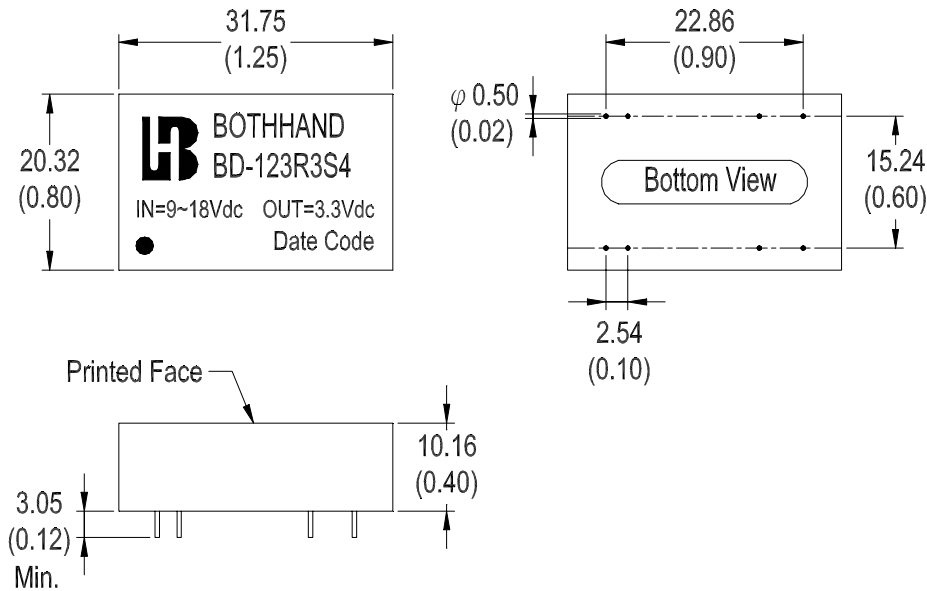
Bothhand Model No.	Input Voltage (Vdc)	Output Voltage (Vdc)	Output Current (mA) Max	Input Current @ No Load (mA) Typ.	Input Current @ Max. Load (mA) Typ.	Output Ripple (mV) Max.	Load Regulation (%) Max.	Efficiency (%) Typ.
2 W Single output Series								
BD-1205S2	9 ~ 18	5.0	400	9	235	50	± 0.5	71
BD-1215S2		15.0	134	9	226	120	± 0.5	74
BD-2405S2	18 ~ 36	5.0	400	6	116	50	± 0.5	72
BD-2412S2		12.0	167	6	113	100	± 0.5	74
BD-2415S2		15.0	134	6	109	120	± 0.5	77
BD-4805S2	36 ~ 75	5.0	400	3	57	50	± 0.5	73
BD-4812S2		12.0	167	3	55	100	± 0.5	76
4 W Single output Series								
BD-123R3S4	9 ~ 18	3.3	1000	19	357	50	± 0.5	77
BD-1205S4		5.0	800	20	422	50	± 0.5	79
BD-1212S4		12.0	333	22	416	100	± 0.5	80
BD-2405S4	18 ~ 36	5.0	800	10	211	50	± 0.5	79
BD-2412S4		12.0	333	13	208	100	± 0.5	80
BD-2415S4		15.0	267	15	201	120	± 0.5	83
BD-4805S4	36 ~ 75	5.0	800	6	105	50	± 0.5	79
BD-4812S4		12.0	333	7	104	100	± 0.5	80
6 W Single output Series								
BD-1205S6	9 ~ 18	5.0	1200	19	633	50	± 0.5	79
BD-1212S6		12.0	500	20	625	100	± 0.5	80
BD-2405S6	18 ~ 36	5.0	1200	10	316	50	± 0.5	79
BD-2412S6		12.0	500	13	313	100	± 0.5	80
BD-2415S6		15.0	400	13	313	120	± 0.5	80
BD-4805S6	36 ~ 75	5.0	1200	6	158	50	± 0.5	79
BD-4812S6		12.0	500	8	154	100	± 0.5	81
BD-xxxxSx								

Notes :

- Standard output Voltage is 3.3V, 5V, 9V, 12V, 15V, BD-xxxxSx is for Customer Design.
- Load regulation is for output current change from 0 % to 100 % Max. Load.
- Suffix "H" for 3.5K Vdc Isolation..... (BD-xxxxSxH)
- Suffix "M" for Metal case (BD-xxxxSxM)

Mechanical Dimension : (Single O/P)

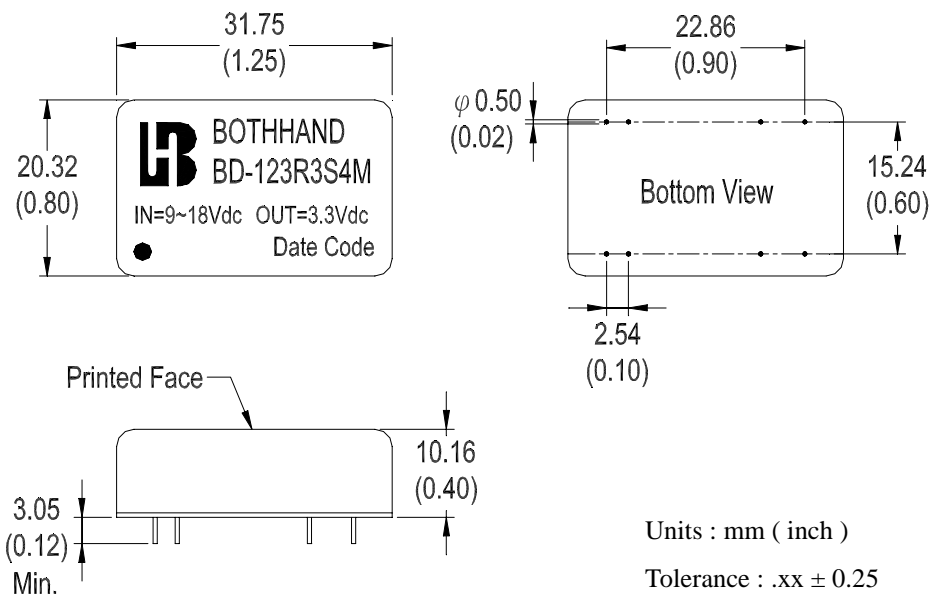
(1). Plastic Case :



Pin	Single Output		Pin
1	---	---	24
2	-Vin	+Vin	23
3			22
4			21
5			20
6	---	---	19
7			18
8			17
9	NC	Vo (-)	16
10	---	---	15
11	NC	Vo (+)	14
12	---	---	13

Note : " --- " means Omitted

(2). Nickel Coated Metal Case :



Units : mm (inch)

Tolerance : .xx ± 0.25

(± 0.01)

5. Dual Output Selection Guide :

(Specifications typical at Ta = +25 °C, Nominal input voltage, Rated output current unless otherwise noted)

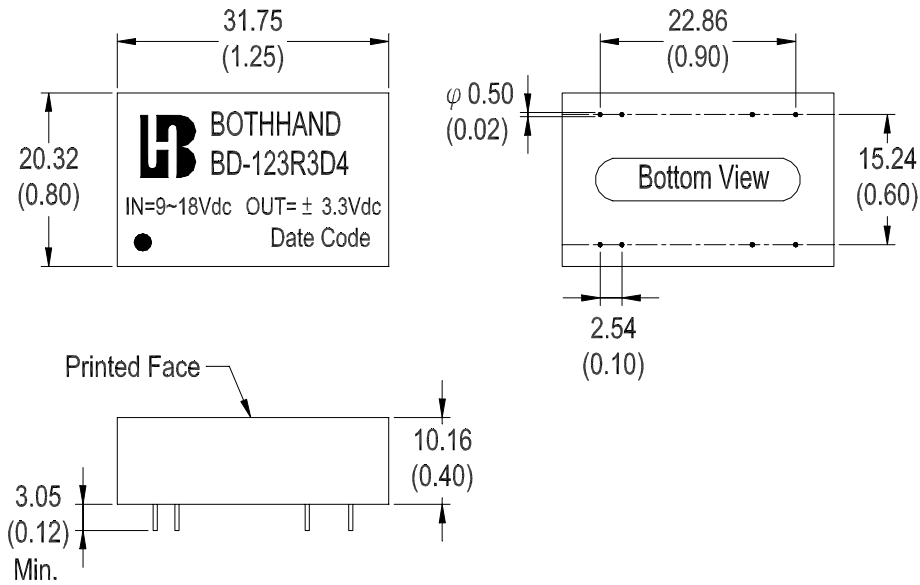
Bothhand Model No.	Input Voltage (Vdc)	Output Voltage (Vdc)	Output Current (mA) Max	Input Current @ No Load (mA) Typ.	Input Current @ Max. Load (mA) Typ.	Output Ripple (mV) Max.	Load Regulation (%) Max.	Efficiency (%) Typ.
2 W Dual output Series								
BD-1205D2	9 ~ 18	± 5.0	± 200	9	225	50	± 2	74
BD-1212D2		± 12.0	± 83	9	215	100	± 2	77
BD-2405D2	18 ~ 36	± 5.0	± 200	6	110	50	± 2	76
BD-2405D2		± 12.0	± 83	7	106	100	± 2	78
BD-4805D2	36 ~ 75	± 5.0	± 200	3	56	50	± 2	75
BD-4812D2		± 12.0	± 83	3	53	100	± 2	78
4 W Dual output Series								
BD-123R3D4	9 ~ 18	± 3.3	± 500	20	367	50	± 2	75
BD-1205D4		± 5.0	± 400	22	439	50	± 2	76
BD-2405D4	18 ~ 36	± 5.0	± 400	13	219	50	± 2	76
BD-2412D4		± 12.0	± 167	15	209	100	± 2	80
BD-2415D4		± 15.0	± 133	17	208	120	± 2	80
BD-4805D4	36 ~ 75	± 5.0	± 400	10	108	50	± 2	77
BD-4812D4		± 12.0	± 167	11	106	100	± 2	79
BD-4815D4		± 15.0	± 133	12	104	120	± 2	80
6 W Dual output Series								
BD-1205D6	9 ~ 18	± 5.0	± 600	22	658	50	± 2	76
BD-1212D6		± 12.0	± 250	25	633	100	± 2	79
BD-2405D6	18 ~ 36	± 5.0	± 600	13	321	50	± 2	78
BD-2412D6		± 12.0	± 250	14	317	100	± 2	79
BD-2415D6		± 15.0	± 200	15	313	120	± 2	80
BD-4805D6	36 ~ 75	± 5.0	± 600	10	162	50	± 2	77
BD-4812D6		± 12.0	± 250	13	156	100	± 2	80
BD-4815D6		± 15.0	± 200	14	156	120	± 2	80
BD-xxxxDx								

Notes :

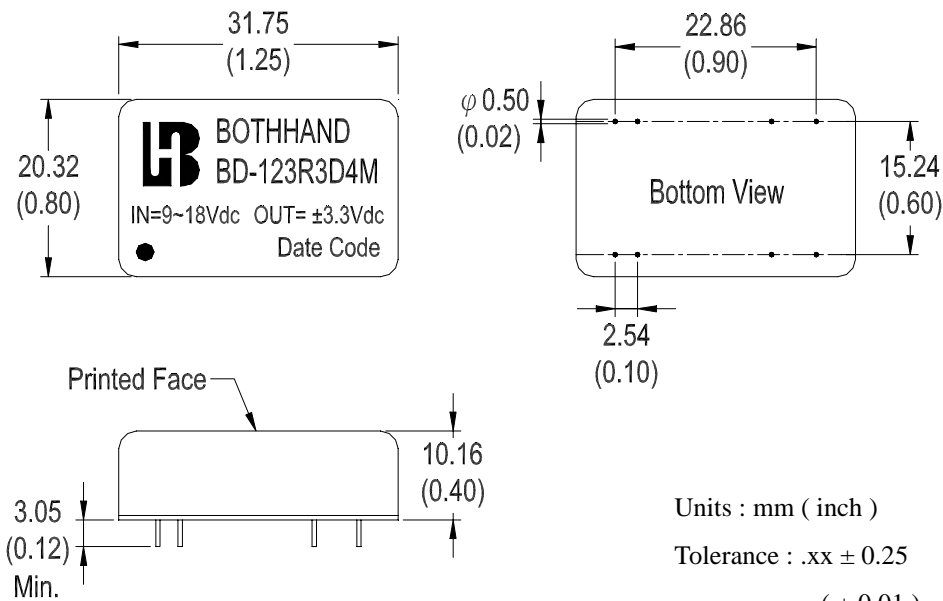
1. BD-xxxxDx is for Customer Design.
2. Load regulation is for output current change from 0 % to 100 % Max. Load.
3. Suffix "H" for 3.5K Vdc Isolation..... (BD-xxxxDxH)
4. Suffix "M" for Metal case (BD-xxxxDxM)

Mechanical Dimension : (Dual O/P)

(1). Plastic Case :



(2). Nickel Coated Metal Case :



Pin	Dual Output		Pin
1	---	---	24
2	-Vin	+Vin	23
3			22
4	---	---	21
5			20
6			19
7	---	---	18
8			17
9	Common	Common	16
10	---	---	15
11	Vo (-)	Vo (+)	14
12	---	---	13

Note : " --- " means Omitted

Units : mm (inch)

Tolerance : .xx ± 0.25

(± 0.01)