



<ul style="list-style-type: none"> <li>■ Low Ripple and Noise</li> <li>■ Input / Output Isolation 1K Vdc or 3K Vdc</li> <li>■ 100 % Burn-In</li> <li>■ Input Filter with Internal Capacitor</li> <li>■ Custom Design Available</li> </ul>	
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**2. Absolute maximum ratings :**

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

Parameter	Condition	Min.	Typ.	Max.	Unit
Input <b>Absolute</b> Voltage Range	5V Input Model	-0.7	5	7.5	Vdc
	12V Input Model	-0.7	12	15	
	24V Input Model	-0.7	24	30	
Max. Output power		---	---	1	W
Output Short circuit duration		---	---	1.0	Second
Operating temperature	Output Full Load	-40	---	+85	°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	5V Input Model	4.5	5	5.5	Vdc
	12V Input Model	10.8	12	13.2	
	24V Input Model	21.6	24	26.4	
Output Voltage Accuracy	Nominal Input	---	---	± 5.0	%
Output Voltage Balance	Dual Output same Load	---	---	± 1.0	
Switching Frequency	Nominal Input	---	110	---	KHz
Temperature Coefficient		---	± 0.01	± 0.02	% / °C
Isolation Voltage	Standard Series	1000	---	---	Vdc
	High Isolation Series	3000	---	---	
Isolation Resistance	500 Vdc	1000	---	---	MΩ
Isolation Capacitance	1 KHz / 250 mV rms	---	30	---	pF
Max. Line Regulation (Per 1.0 % change in input change)		---	---	1.3	%

#### 4. Model Selection Guide :

##### 4.1. 1K Vdc Isolation - Single output

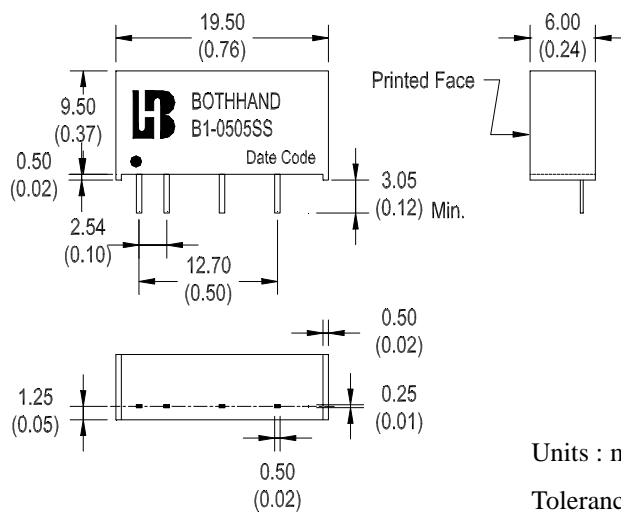
( Specifications typical at Ta = +25 °C, Nominal input voltage, Rated output current unless otherwise noted )

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.
B1-0505SS	5	5.0	200	30	253	60	± 8	79
B1-0512SS		12.0	84	28	255	100	± 8	79
B1-1205SS	12	5.0	200	18	105	60	± 8	79
B1-1212SS		12.0	84	18	104	100	± 8	80
B1-243R3SS	24	3.3	303	5	56	50	± 8	74
B1-2405SS		5.0	200	4	54	60	± 8	77
B1-2412SS		12.0	84	4	55	100	± 8	76
B1-xxxxSS								

Notes :

- Standard output Voltage is 3.3V, 5V, 12V, 15V, B1-xxxxSS is for Customer Design.
- Load regulation is for output current change from 20 % to 100 % Max. Load.

#### Mechanical Dimension :



Units : mm ( inch )  
Tolerance : .xx ± 0.25  
( ± 0.01 )

Pin	1K Vdc - Single
1	+Vin
2	-Vin
3	---
4	Vo (-)
5	---
6	Vo (+)
7	---

Note : " --- " means Omitted

## 4.2. 1K Vdc Isolation - Dual output

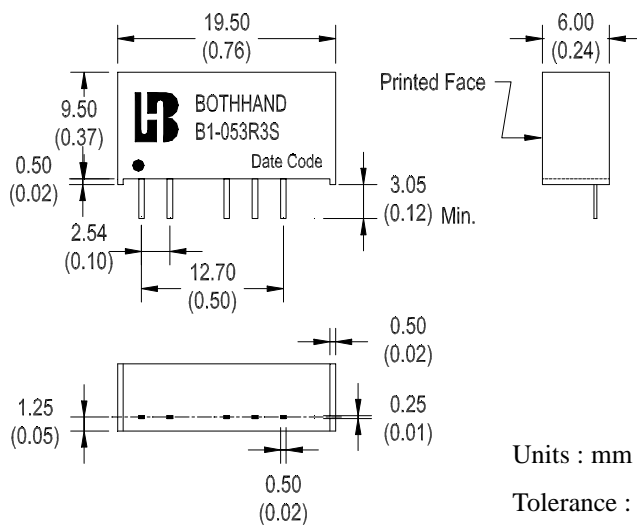
( Specifications typical at Ta = +25 °C , Nominal input voltage, Rated output current unless otherwise noted )

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.
B1-053R3S	5	± 3.3	± 150	30	274	60	± 12	73
B1-0505S		± 5.0	± 100	30	263	70	± 10	76
B1-0512S		± 12.0	± 42	28	255	100	± 8	79
B1-0515S		± 15.0	± 34	28	255	120	± 8	80
B1-1205S	12	± 5.0	± 100	18	104	70	± 8	80
B1-1212S		± 12	± 42	18	104	100	± 8	80
B1-243R3S	24	± 3.3	± 150	5	56	60	± 8	74
B1-2405S		± 5.0	± 100	4	55	70	± 8	76
B1-2412S		± 12.0	± 42	4	55	100	± 8	76
B1-xxxxS								

Notes :

- Standard output Voltage is  $\pm 3.3V$ ,  $\pm 5V$ ,  $\pm 12V$ ,  $\pm 15V$ , B1-xxxxS is for Customer Design.
- Load regulation is for output current change from 20 % to 100 % Max. Load.

### Mechanical Dimension :



Units : mm ( inch )

Tolerance : .xx ± 0.25

( ± 0.01 )

Pin	1K Vdc - Dual
1	+Vin
2	-Vin
3	---
4	Vo (-)
5	Common
6	Vo (+)
7	---

Note : " --- " means Omitted

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### 4.3. 1K Vdc Isolation - Dual separate output

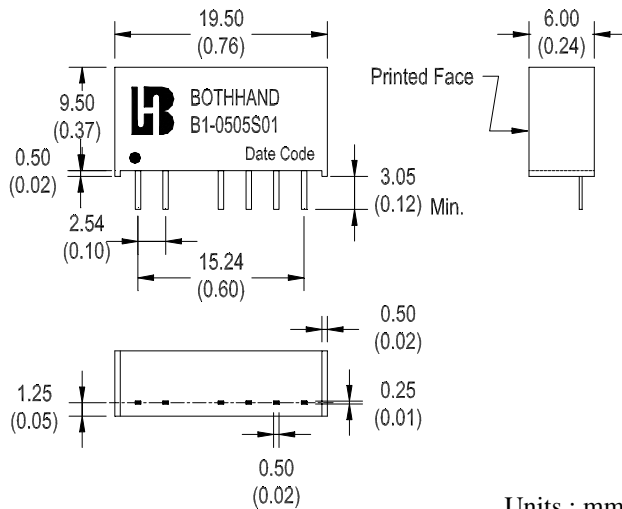
( Specifications typical at Ta = +25 °C , Nominal input voltage, Rated output current unless otherwise noted )

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.
		5.0	15.0	100	33					
B1-0505S01	5	5.0	5.0	100	100	30	263	70	± 10	76
B1-0515S01		5.0	15.0	100	33	28	250	75	± 8	80
B1-1205S01	12	5.0	5.0	100	100	18	107	70	± 8	78
B1-1212S01		5.0	12.0	100	42	18	104	75	± 8	80
B1-1215S01		5.0	15.0	100	33	18	106	75	± 8	78
B1-2405S01	24	5.0	5.0	100	100	5	54	70	± 8	76
B1-xxxxSxx										

Notes :

1. B1-xxxxSxx is for Customer Design.
2. Load regulation is for each output current change from 20 % to 100 % Max. Load.

### Mechanical Dimension :



Pin	1K Vdc - Dual Separate
1	+Vin
2	-Vin
3	---
4	Vo1 (+)
5	Vo1 (-)
6	Vo2 (+)
7	Vo2 (-)

Units : mm ( inch )

Tolerance : .xx ± 0.25

( ± 0.01 )

Note : " --- " means Omitted

#### 4.4. 3K Vdc Isolation - Single output

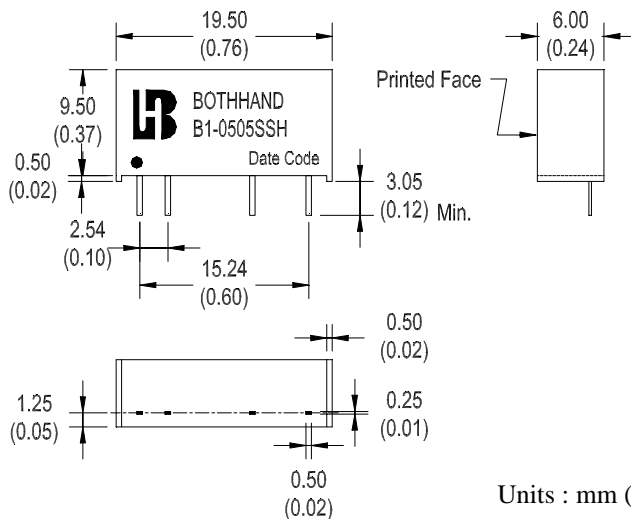
( Specifications typical at Ta = +25 °C, Nominal input voltage, Rated output current unless otherwise noted )

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.
B1-0505SSH	5	5.0	200	30	253	60	± 8	79
B1-0512SSH		12.0	84	28	254	100	± 8	79
B1-0515SSH		15.0	67	28	251	120	± 8	80
B1-1205SSH	12	5.0	200	18	105	60	± 8	79
B1-1212SSH		12.0	84	18	104	100	± 8	80
B1-2405SSH	24	5.0	200	5	54	60	± 8	77
B1-2412SSH		12.0	84	4	55	100	± 8	76
B1-2415SSH		15.0	67	4	55	120	± 8	76
B1-xxxxSSH								

Notes :

- Standard output Voltage is 5V, 12V, 15V, B1-xxxxSSH is for Customer Design.
- Load regulation is for output current change from 20 % to 100 % Max. Load.

#### Mechanical Dimension :



Units : mm ( inch )  
Tolerance : .xx ± 0.25  
( ± 0.01 )

Pin	3K Vdc - Single
1	+Vin
2	-Vin
3	---
4	---
5	Vo (-)
6	---
7	Vo (+)

Note : " --- " means Omitted

#### 4.5. 3K Vdc Isolation - Dual output

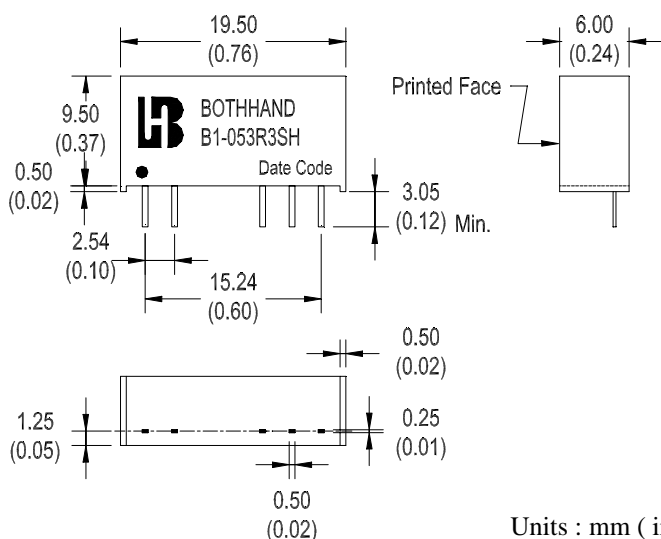
( Specifications typical at Ta = +25 °C, Nominal input voltage, Rated output current unless otherwise noted )

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.
B1-053R3SH	5	± 3.3	± 150	30	274	60	± 12	73
B1-0505SH		± 5.0	± 100	30	263	70	± 10	76
B1-1205SH	12	± 5.0	± 100	18	104	70	± 8	80
B1-1212SH		± 12.0	± 42	18	104	100	± 8	80
B1-2405SH	24	± 5.0	± 100	5	55	70	± 8	76
B1-2412SH		± 12.0	± 42	4	55	100	± 8	76
B1-xxxxSH								

Notes :

- Standard output Voltage is ±3.3V, ±5V, ±12V, ±15V, B1-xxxxSH is for Customer Design.
- Load regulation is for output current change from 20 % to 100 % Max. Load.

#### Mechanical Dimension :



Units : mm ( inch )  
Tolerance : .xx ± 0.25  
( ± 0.01 )

Pin	3K Vdc - Dual
1	+Vin
2	-Vin
3	---
4	---
5	Vo (-)
6	Common
7	Vo (+)

Note : " --- " means Omitted