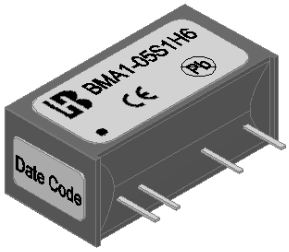
1. Features：



1.1. 7 Pin SIL Package
1.2. 100 % Burn-In
1.3. Low Ripple and Noise
1.4. Input / Output Isolation ： 6000 Vdc
1.5. Net Weight ： 3.7 g Typical
1.6. RoHS Converter Certified By SGS

2. Input Specification：

2.1.	Input Voltage	： 4.5 ~ 5.5 Vdc	5Vdc ± 10 %
2.2.	Max. Input Current	： 270 mA Max.	@ Vin = 5Vdc and Output at Full Load.
2.3.	Quiescent Current	： 30 mA Typ.	@ Vin = 5Vdc and No Load.
2.4.	Input Ripple	： 100 mV Typical	@ Vin = 5 Vdc, Output at Full Load, No Input Electrolytic Capacitor and 20 MHz BW.
2.5.	Input Filter	： Internal Capacitor	
2.6.	Switching Frequency	： 60 KHz Typ.	@ Vin = 5Vdc and Output at Full Load.
2.7.	Input Efficiency	： 74 % Min.	@ Vin = 5Vdc and 100 % Load. (78 % Typical)

3. Output Specification：

3.1.	Output Voltage	： 5 Vdc	@ Vin = 5 Vdc and Output at Full Load.
3.2.	Output Voltage Accuracy	： ± 5 %	Vo = 4.75 ~ 5.25 Vdc
3.3.	Max. Output Current	： 200 mA	
3.4.	Min. Output Current	： 20 mA	
3.5.	Ripple & Noise	： 60 mVp-p Max.	@ 20 MHz BW
3.6.	Line Regulation	： 1.3 %/ 1.0% Max.	See Note (1).
3.7.	Load Regulation	： 15 % Max.	See Note (2).
3.8.	Max. Capacitive Load	： 220 μF	
3.9.	Temperature Coefficient	： ± 0.02 %／℃	

Note :

(1). Line Regulation : Set output load to full load, Then adjust input voltage from 4.5Vdc to 5.5Vdc (10 % Change) , The output voltage difference must be within 13 % of the output at full load and nominal input.

(2). Load Regulation : Set input voltage at 5V, Then changing Output load from 10 % to 100 % rated Load , The output voltage difference must be within 15 % of the output at full load and nominal input.

(3). All specification are typical at 25℃ unless otherwise state.

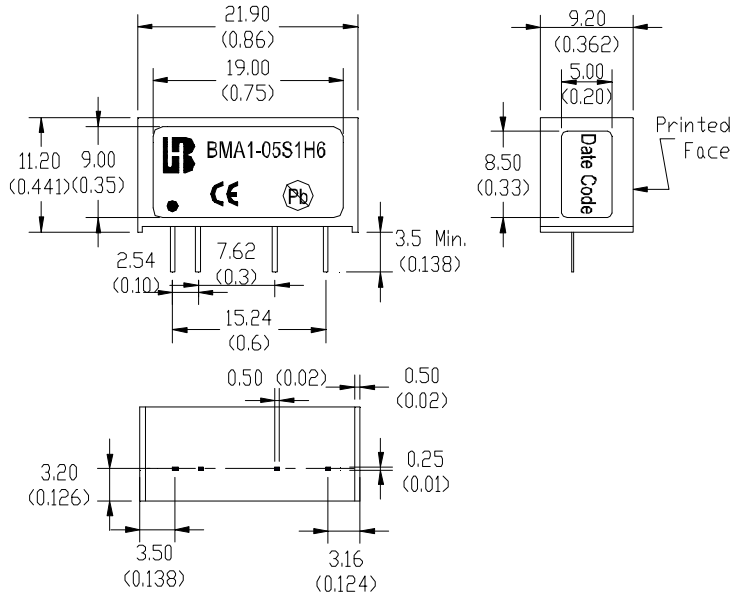
(4). Safety Standard / Approval : IEC/ EN 60950-1

4. General Specification：

4.1.	Isolation Voltage	： 6000 Vdc	Test duration 60 Seconds / 0.5mA
4.2.	Isolation Resistance	： 1 GΩ Min.	@ 500 Vdc
4.3.	Operating Temperature (1)	： -40℃ ~ +85℃	@ Ambient Temperature with Natural convention
4.4.	Operating Temperature (2)	： -40℃ ~ +95℃	@ Case Surface Temperature
4.5.	Storage Temperature	： -55℃ ~ +105℃	
4.6.	Humidity	： Up to 90 %	
4.7.	Cooling	： Free air convection	

4.8. Case Type : Non-Conductive Plastic

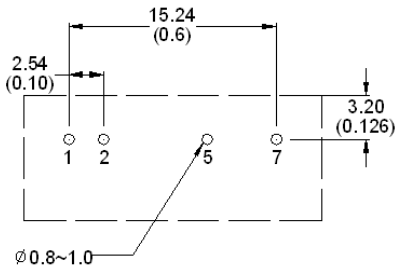
5. Mechanical Dimension :



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

Note : "---" means Omitted

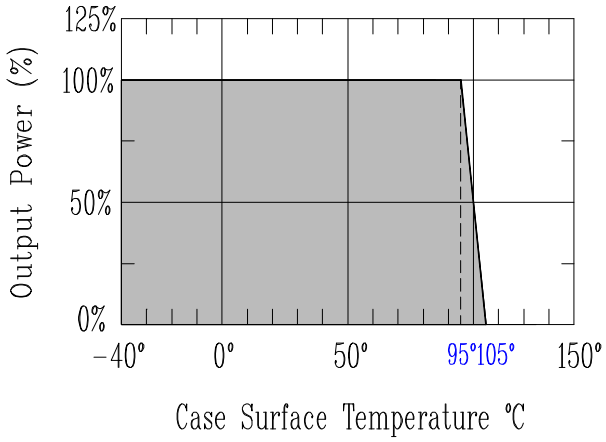
6. Recommended footprint details :



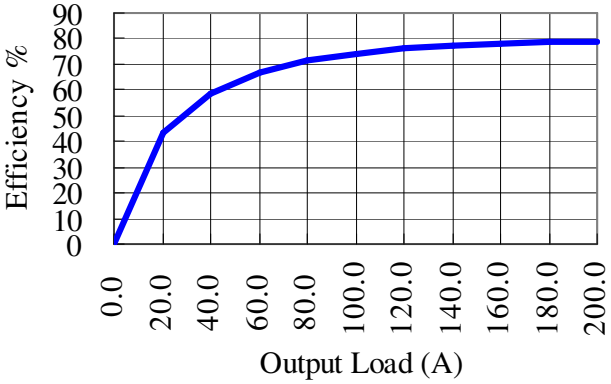
Units : mm (inch)

Tolerance : 0.xx ± 0.25 (0.xx ± 0.01)

7. Power Derating Curve :



8. Efficiency & Output Load Chart :



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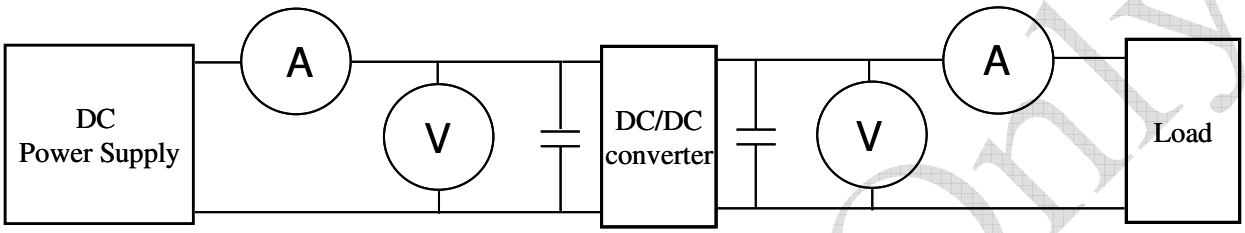
Application note

Test Configurations :

All specifications are typical at nominal input, full load and 25℃ unless otherwise stated.



◎DC Power Supply: It offers a wide voltage and current range precisely.

◎Current meter (A): Accuracy➔ 200μA ~ 200mA 4 ranges±(0.2% rdg + 2 digits)

2000mA ~ 20A 2 ranges±(0.3% rdg + 2 digits).

◎Voltage meter (V): Accuracy➔ ±(0.03% rdg + 4 digits).

◎Load: At full load.

◎Wires: The resistance of the wires must be small.

1. Input voltage range: Narrow input voltage range（±10%）、wide input voltage range (2:1 and 4:1）。

EX: Narrow input voltage range（±10%）

5VDC nominal input ➔ 4.5~5.5VDC
12VDC nominal input ➔ 10.8~13.2VDC
24VDC nominal input ➔ 21.6~26.4VDC

Wide input voltage range 2:1

5VDC nominal input ➔ 4.5~9VDC
12VDC nominal input ➔ 9~18VDC
24VDC nominal input ➔ 18~36VDC
48VDC nominal input ➔ 36~75VDC

Wide input voltage range 4:1 (W)

24VDC nominal input ➔ 9~36VDC
48VDC nominal input ➔ 18~75VDC

2. Input power :

Pin = Vin x Iin

Vin：Input voltage
Iin：Input current

3. Output power :

Pout = Vout x Iout

Vout：Output voltage
Iout：Output current

4. Efficiency :

$$\text{Efficiency} = \frac{\text{Pout}}{\text{Pin}} \times 100\%$$

Pout: Output power
Pin: Input power

5. Voltage accuracy:

$$\frac{|\text{Vout}-\text{Vout(nominal)}|}{\text{Vout}} \times 100\%$$

Vout：Output voltage
Vout(nominal)：Nominal output voltage

6. Line regulation: (1) Wide input voltage range and regulated output voltage series.

$$\frac{|\text{Vout(LL)}-\text{Vout(HL)}|}{\text{Vout(LL)}} \times 100\%$$

LL: Low Line input voltage
HL: High Line input voltage

(2) Narrow input voltage range（±10%）and unregulated output voltage series.

$$\text{Line regulation} = \left|\frac{\Delta\text{Vout}}{\Delta\text{Vin}}\right|$$

$$\Delta\text{Vout} = \frac{\text{Vout(+10\%)}-\text{Vout(-10\%)}}{\text{Vout}} \times 100\%$$

Vout(+10%)：Output voltage at Vin = 1.1xVin(nominal)&full load
Vout(-10%)：Output voltage at Vin = 0.9xVin(nominal)&full load
Vout：Output voltage at Vin = Vin(nominal)&full load

$$\Delta\text{Vin} = \frac{\text{Vin(+10\%)}-\text{Vin(-10\%)}}{\text{Vin(nominal)}} \times 100\%$$

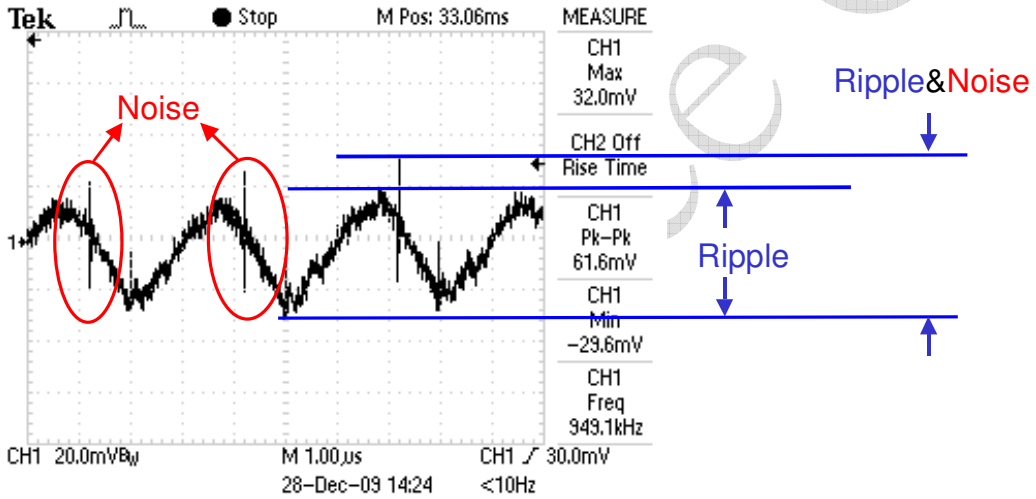
Vin(+10%)：Input voltage = 1.1xVin(nominal)
Vin(-10%)：Input voltage = 0.9xVin(nominal)
Vin(nominal)：Nominal Input voltage

7. Load regulation :

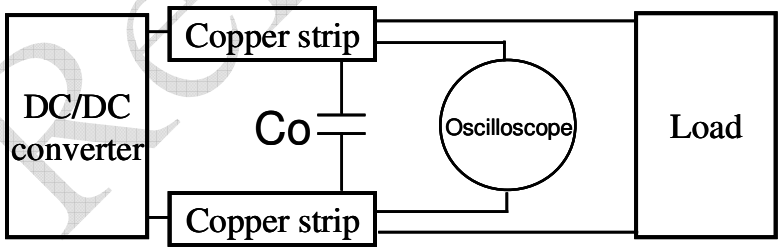
$$\frac{|Vout(FL)-Vout(NL)|}{Vout(FL)} \times 100\%$$

Vout(FL): Output voltage at full load
Vout(NL): Output voltage at 25% full load or 10% full load

8. Ripple and Noise: as shown below. The bandwidth is 0-20MHz.

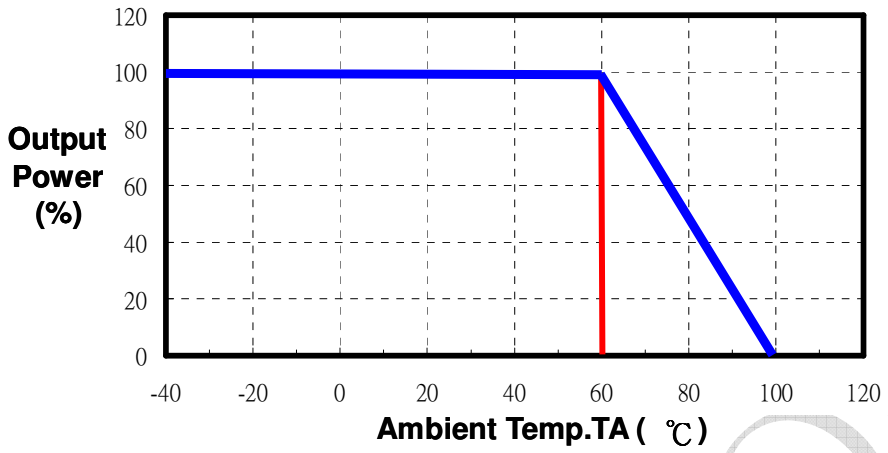


Output Ripple&Noise measurement test circuit: as shown below.



Co: usually 0.47uF.

9. Temperature derating curve: The DC-DC converter will operate over a wider temperature range if less power is drawn from the output and the device is already running. The temperature derating curve shows the operating power-temperature range. As shown below.



10. Switching frequency: The nominal operating frequency of the DC-DC converters.

11. Input to output isolation: The dielectric breakdown strength test between input and output circuits. This is the isolation voltage the device is capable of withstanding for a specified time, usually 1 second or 1 minute.