

特点

- * 输入输出不隔离降压变换器
- * 12V 输入电压, 16A 输出电流
- * 外形尺寸: 33 × 13.5 × 8.3 mm
- * 高效率、高功率密度
- * 表面贴装引脚

Features

- * Non-isolated Buck Converter
- * 12V Input Voltage, 16A Output Current
- * Size: 1.30 × 0.53 × 0.33 inch
- * High Efficiency, High Power Density
- * Surface Mount Package

输入特性(Input)		注释(Notes and Conditions)
输入电压范围(Input Voltage Range)	10.0~14.0Vdc	15.0Vdc Max
遥控功能(Remote On/Off Function)		
正逻辑(Positive Logic) 开启(On)	高电平(10Vdc ~ 14Vdc)或悬空 (High Level(10Vdc ~ 14Vdc) or Open Circuit)	相对于GND(Reference to GND)
关闭(Off)	低电平(0 ~ 0.3Vdc)或与 GND 短接 (Low Level(0 ~ 0.3Vdc) or Connect to GND)	

输出特性(Output)		注释(Notes and Conditions)
输出电压精度(Voltage Set-Point Accuracy)	± 2%	V _{inom} and I _{onom}
源效应(Line Regulation)	± 1%V _o	V _{imin} ~V _{imax} , I _{onom}
负载效应(Load Regulation)	± 1%V _o	0~100%I _{onom} , V _{inom}
输出电压调节范围 (Output Voltage Trim Range)	0.7525~5.5Vdc	
短路保护(Short-Circuit Protection)	连续可恢复	(Continuous, Automatic Recovery)
输出过流保护点 (Current Limit Threshold Range)	≥ 110%I _{onom}	
瞬态响应(Dynamic Response)		
过冲幅度(Peak Deviation)	200mV	25%-50%-25% of I _{onom} , V _{in} =V _{inom}
恢复时间(Settling Time)	≤ 50 μs	and 50%-75%-50% of I _{onom} , V _{in} =V _{inom}

一般特性(General)		注释(Notes and Conditions)
温度系数(Temperature Coefficient)	± 0.02%/℃	
相对湿度(Relative Humidity)	≤ 95%RH, (40 ± 2)℃	
工作环境温度 (Operating Ambient Temperature) ¹	-40℃~+85℃	
贮存温度(Storage Temperature)	-55℃~+125℃	
过温保护(Thermal Shutdown Range)	+110℃	
开关频率(Switching Frequency)	300kHz	
冷却方式(Cooling)	自然冷却(Natural Convection)	或强制风冷(or Forced Convection)
平均故障间隔时间(MTBF)	2 × 10 ⁵ h	MIL-HDBK-217
重量(Weight)	5.5g	

注: 除非另有说明, 指标一般在标称输入电压、满载和 25℃ 环境温度下测得。

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

1 参见降额曲线图(Reference to Derating Curve)

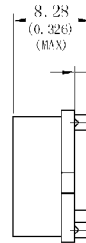
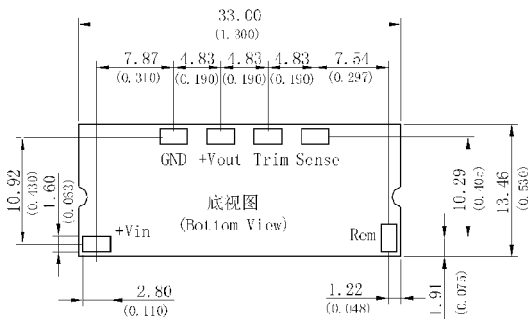
性能列表 (Voltage Trim)

标称输入电压 (Input Voltage) Vdc	标称输出电压 (Output Voltage) Vdc	外接电阻 Rtrim (External Resistor) k Ω	标称负载 (Output Current) A	额定输出功率 (Output Power) W	效率 (Efficiency) %	输出杂音电压峰值 (Ripple and Noise) mVp-p
12	0.7525	Open	16.00	12	78	75
12	1.20	22.46	16.00	19	84	75
12	1.50	13.05	16.00	24	86	75
12	1.80	9.024	16.00	28.8	87	75
12	2.50	5.009	16.00	40	90	75
12	3.30	3.122	16.00	52.8	91	75
12	5.00	1.472	16.00	80	93	75

注: Trim 和 GND 引脚之间接一合适的电阻 Rtrim(具体接法参见输出电压调节图)就可获得从 0.7525~5.0Vdc 之间的任意输出电压。
(Note: Programmable output voltage via external resistor from 0.7525Vdc to 5.0Vdc)

安装尺寸 (Mechanical Drawing)

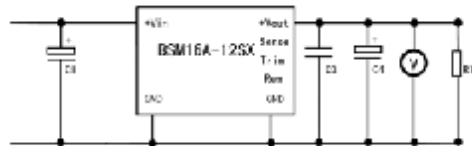
尺寸单位是 mm(inches); All Dimensions in mm (inches)



* 公差 (Tolerances)
.XX ± 0.25 (.XXX ± 0.010)

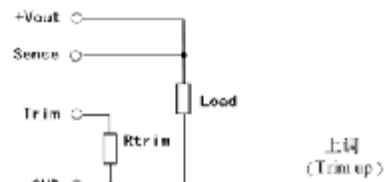
注: 推荐焊盘尺寸 (Recommended Pad Size)
Min: 3.556 × 2.413 (0.140 × 0.095)
Max: 4.19 × 2.79 (0.165 × 0.110)

应用电路推荐 (Recommended Application Circuit)



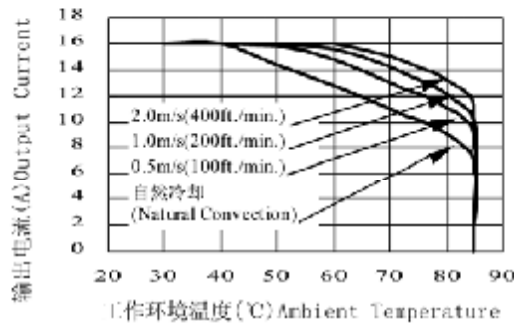
- C1 推荐值 (Recommended): 四个 17 μF 钽电容并联 (Four Tantalum Capacitors parallel connection)
- C3 推荐值 (Recommended): 1 μF 陶瓷电容 (Ceramic Capacitor)
- C4 推荐值 (Recommended): 10 μF 钽电容 (Tantalum Capacitors)

输出电压调节 (Output Voltage Trim)



$$\text{即 } R_{\text{Trim}} = \left(\frac{10500}{V_o - 0.7525} - 1000 \right) \Omega$$

Vin=12V, Vo=0.75V 时温度降额曲线 (Temperature Derating Curve Circuit)



Vin=12V, Vo=5.0V 时温度降额曲线 (Temperature Derating Curve)

