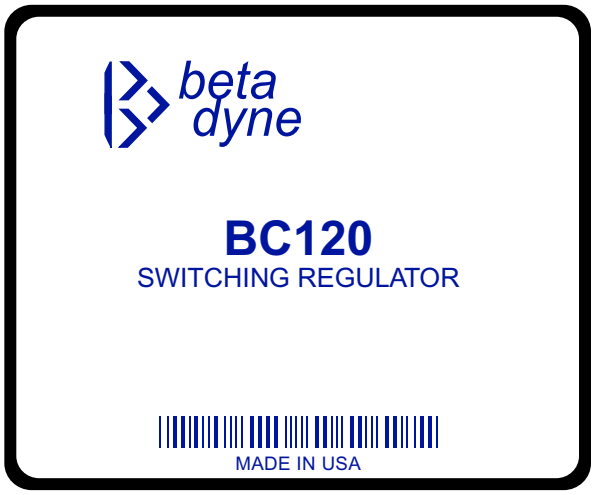
BC120

SYNCHRONOUS STEP-DOWN SWITCHING REGULATOR

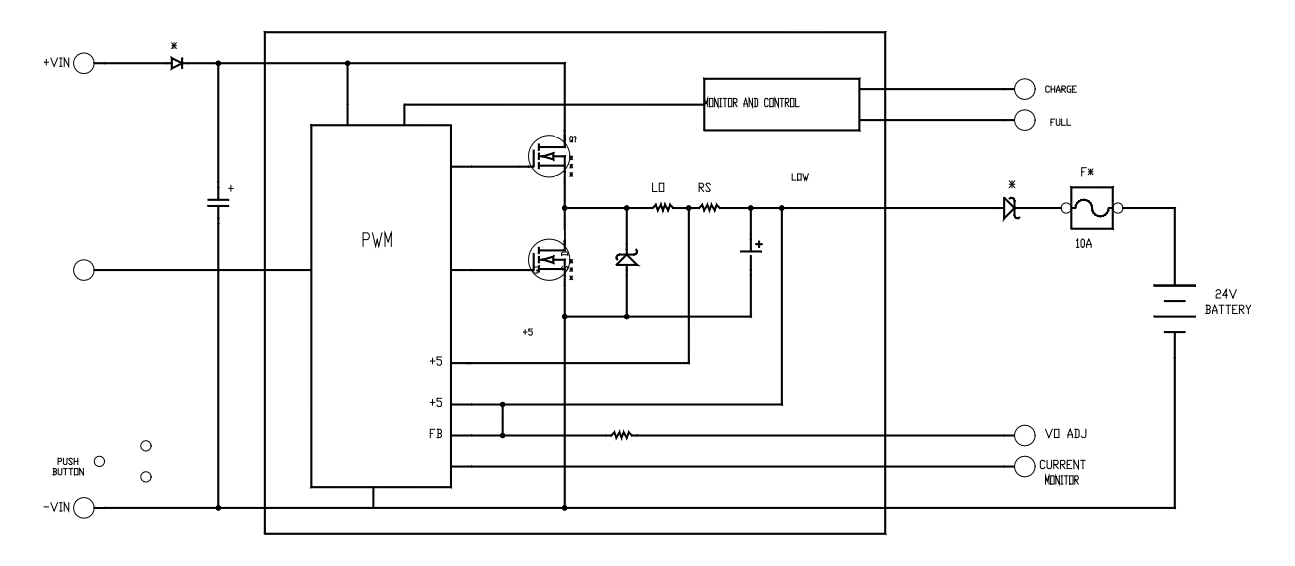
Key Features

- Efficiency (*TBD*)%
- 2:1 wide input voltage range
- Adjustable output voltage
- Under/overvoltage protection
- Thermal protection
- Synchronous rectification
- Soft start
- Six-sided EMI shielding
- Output current monitor
- Output current limit



Functional Description

The BC120 is a high power load, acid 24V battery charger. The input power voltage source is down converted by a high efficiency, high-voltage switching regulator that accepts $28V_{IN}$ to $48V_{IN}$ at its inputs and provides $24V_{OUT}$@5A max at its output. Optional features include trickle charge, TC tracking output, and auto-disconnect. The charge is packaged in a 3×2.5×0.5-inch copper case that can dissipate more than 10W. When higher power or higher operating temperatures are needed, the charger can be fitted with an aluminum heat sink.



Typical Block Diagram

Electrical Specifications

Unless otherwise specified, all parameters are given under typical +25°C with nominal input voltage and under full output load conditions.

INPUT SPECIFICATIONS

PARAMETER	CONDITION / NOTE	MIN	TYP	MAX	UNIT
Input Voltage Range		28	36	48	Vdc
Input Current, No Load	V_{IN} = 36V				mA
Input Current, Full Load	V_{IN} = 36V, V_O = 24V@5A				A
Input Reflected Ripple					mA_{PP}
Off State Input Current					mA
Remote On/Off Control	Reference to GND, Open = ON, Short = OFF				
Turn On Delay	Including Soft Start				mS
Input Overvoltage Shutdown					Vdc

OUTPUT SPECIFICATIONS

PARAMETER	CONDITION / NOTE	MIN	TYP	MAX	UNIT
Output Voltage Range	V_{IN} □ 28V		24		Vdc
Line Regulation					% of V_{OUT}
Load Regulation					% of V_{OUT}
Ripple and Noise					mV
Temperature Coefficient					%
Transient Response					µS
Thermal Shutdown	Case temperature				°C
Recovery from Thermal Shutdown	Case temperature				°C
Short Circuit Current					A

GENERAL SPECIFICATIONS

PARAMETER	CONDITION / NOTE	MIN	TYP	MAX	UNIT
Efficiency	V_{IN} = 36V, V_O = 24V@5A		*TBD*		
Switching Frequency	Fixed		200		Hz
Isolation	None				
Thermal Resistance	Internally dissipated		*TBD*		°C/W
MTBF	per MIL-HNBK-217F (Ground benign, +25°C)		*TBD*		hours

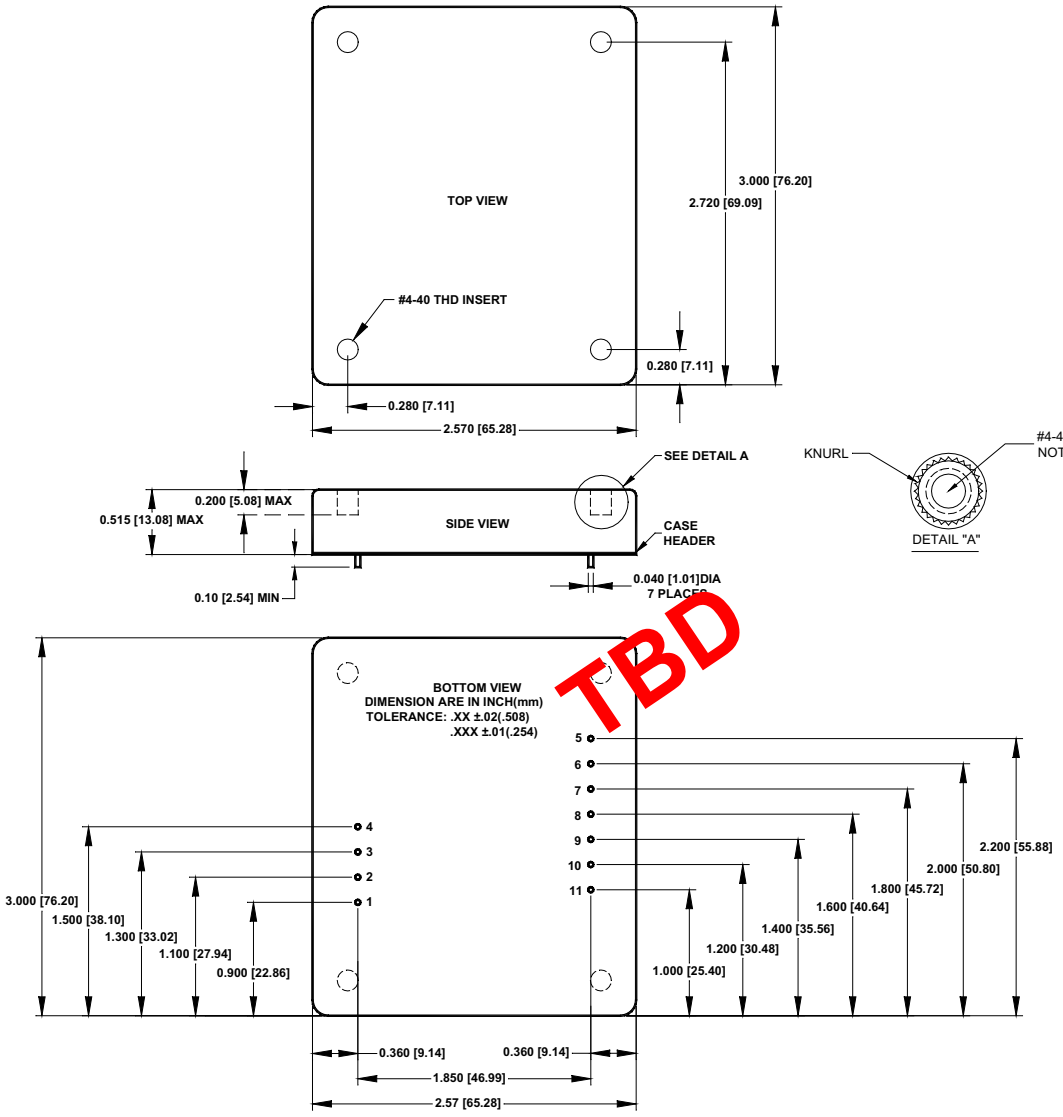
ENVIRONMENTAL SPECIFICATIONS

PARAMETER	CONDITION / NOTE	MIN	TYP	MAX	UNIT
Humidity	Non-condensing				%
Storage Temperature		-60		+125	°C
Operating Temperature, Commercial		-25		+60	°C

PHYSICAL CHARACTERISTICS

PARAMETER	CONDITION / NOTE	MIN	TYP	MAX	UNIT
Dimensions (L×W×H)	3.00×2.50×0.50 in. (76.20×63.50×12.70mm)				
Weight	oz. (g)				
Case Material	Coated copper				
Header	FR-4, non-conductive				
Potting	Thermally conductive				
Case Connection	$-V_{IN}$				

MECHANICAL SPECIFICATIONS



Pin	Function