



Precision Core Brium Constant Current Source Reference

This small, embeddable constant current source reference gives low drift accuracy, protection, and filtering to ensure that the device under test (or D.U.T.) such as semiconductors, diodes, LEDs, sensor excitation, IC, and other loads can be characterized or calibrated with high accuracy. The constant current source reference can have a variable equivalent load of up to 8 kilohms and a variable voltage input of 15 to 30 volts. By setting the voltage and load, 3 mA constant current will be achieved for characterization.

Benefits of the CCS

- Low current drift ($< \pm 0.03\%$) at one hour at 75 deg Fahrenheit
- 3 mA constant current
- Stable, repeatable current delivery
- 15-30 VDC input
- Short circuit protection
- Reverse voltage protection
- Overvoltage protection up to 45 VDC
- Settle time is 4 minutes
- ESD protection
- Small size
- Easy integration

The constant current source reference uses all voltage input dynamically (not a fixed voltage output). This is designed to deliver stable and reliable performance once it reaches thermal equilibrium, providing consistent output that engineers can depend on during extended operation. It restabilizes to consistent behavior even when the constant current source is moved by hand or temporarily disturbed by other means. This reduces long-term drift and minimizing the need for frequent recalibration. Its

repeatable performance ensures that the same conditions produce the same results, which is critical for validation, testing, and quality assurance processes. Over a few hours, the current output remains smooth and predictable, supporting applications that require continuous operation without instability or unexpected large variation. The constant current source gives low drift to (D.U.T.) such as semiconductors, diodes, LEDs, sensor excitation, IC and other loads.

Applications

- Silicon, Schottky, and Zener diode characterization
- Temperature coefficient measurements
- LED binning
- Temperature drift measurements
- Transistor junction testing
- RTD Excitation
- Sensor Excitation
- Semiconductor test fixtures
- Op-amp input bias current studies
- Precision reference evaluation
- Current mirror characterization
- Analog IC testing

ELECTRICAL CHARACTERISTICS

Absolute Maximum Ratings†

Operating Voltage.....	10-50 VDC
Junction Temperature.....	-40°C to +85°C
Storage Temperature.....	-40°C to +80°C

† **Notice:** Going above the limits listed in “Absolute Maximum Ratings” may cause permanent damage to the device. It is not recommended to be at or above “Absolute Maximum Ratings” for this device. Keeping device at or above maximum rating for extended periods of time may affect the device’s reliability.

DC ELECTRICAL CHARACTERISTICS

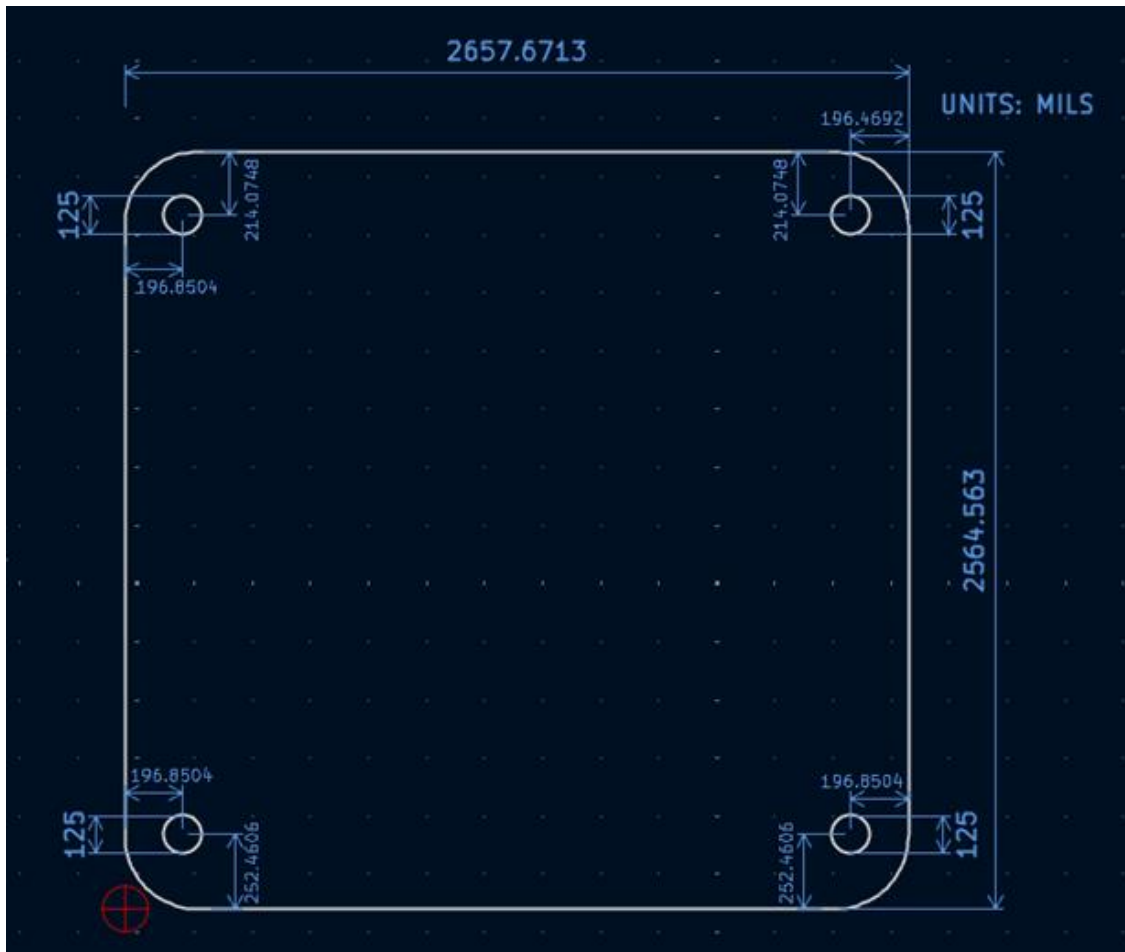
PARAMETER	CONDITIONS	MIN	TYP	MAX	UNITS
Voltage Supply Input	DC	15	25	30	VDC

TEMPERATURE SPECIFICATIONS

PARAMETER	CONDITIONS	MIN	TYP	MAX	UNITS
Junction Temperature		-30	25	75	°C
Maximum Junction Temperature		-40	-	85	°C
Storage Temperature		-35	-	75	°C

Dimensions of the Board

NOTICE: This is the dimensions of the Precision Core Brium Constant Current Source Reference in mils. Do not torque the four Philip head screws to much or will cause current drift on the printed circuit board.



To the best of our knowledge, the referenced product in this datasheet is RoHS compliant per the component manufacturers' documentation. Printed circuit board made in the U.S.A.

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APPENDIX: REVISION HISTORY

REV	DATE	DESCRIPTION	PAGE NUMBER
A	06/2026	INITIAL RELEASE	ALL
B	06/19/2026	ADDED TIME AND DEGREE FOR CURRENT DRIFT	1

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