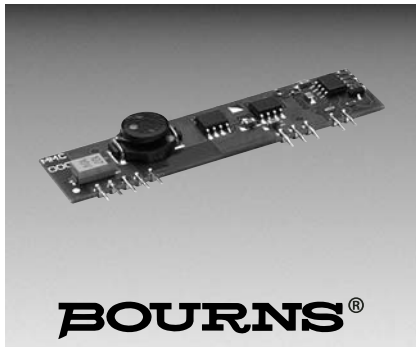




Features

- Low cost
- 10 amp output current
- 94 % efficiency
- Industry-standard pin-out
- Low 0.6 " profile
- Remote sense
- Trim function
- Short-circuit protection with auto-restart
- Fast transient response
- High-temperature operation
- 75 W/in³ power density
- Remote enable
- Output precharge capability
- Patents 5,770,940; 5,978,195; 6,127,814

SC10A DAC Series – Power Module

General Information

The SC10A DAC is a low-cost, 10 amp, non-isolated DC-DC converter with an amazingly small footprint. Designed for today's high power microprocessors, the SC15A accepts a 5 V input and a DAC controlled output from 1.25 V to 3.5 V.

Using Bourns proprietary V2™ architecture, the SC10A DAC provides ultrafast transient response, improved line and load regulation, and very high efficiency. It also incorporates short-circuit protection, Enable / Disable control, output voltage trim, and remote sense.

Input Specifications

Voltage
5 V input4.5 VDC Min.
5 VDC Nom.
5.5 VDC Max.
(4.75 Vin start-up)
3.3 V input3.0 VDC Min.
3.3 VDC Nom.
3.6 VDC Max.

Current10 A Nom.

Enable Voltage
High = On
.....2.4 VDC Min. (Source 500 mA)
Low = Off
.....-0.1 to 0.3 VDC (open = enable)

Inhibit Current0.1 mA Nom.

Output Specifications

Current0 to 10 A
Current Limit.....11 A Min.

Voltage Setpoint Accuracy.....±1 %Vnom
±2 %Vnom max.

Voltage Trim Range.....-10 to +10 %Vnom

Line Regulation±0.1 %Vnom

Load Regulation±0.3 % Vnom
(±0.5 % without remote sense)

Dynamic Response
0 to 100 % load
.....200 mV Nom. ($\Delta i/\Delta t = 3 \text{ A}/\mu\text{s}$)
17 μs Nom.

100 to 0 % load
.....200 mV Nom. ($\Delta i/\Delta t = 3 \text{ A}/\mu\text{s}$)
20 μs Nom.

Temperature Regulation
.....±0.02 %Vout/°C Max.

General Specifications

MBTF...2,000 kHrs Nom. (40 °C, 80 % load)
Operating Temperature0 to 100 °C
(-40 to +100 °C optional)
Storage Temperature.....-55 to +125 °C
Switching Frequency.....500 kHz Nom.

Standard Options

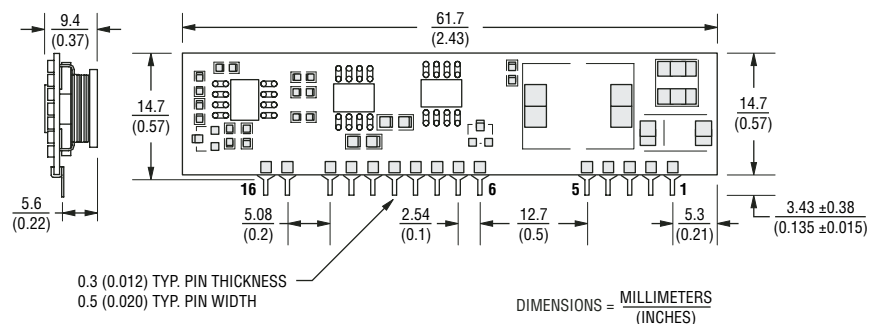
	Nominal Input (V)	Output Voltage (V)	Output Current (A)	Ripple Max. (mV pp)	Efficiency Typ. (%)
SC10A5SDAC	5	1.3 to 3.5	10	100	90
SC10A3SDAC	3.3				

Output Voltage Selection

VID4	VID3	VID2	VID1	VID0	Output	VID4	VID3	VID2	VID1	VID0	Output
0	1	1	1	1	1.30	1	1	1	1	1	2.00
0	1	1	1	0	1.35	1	1	1	1	0	2.10
0	1	1	0	1	1.40	1	1	1	0	1	2.20
0	1	1	0	0	1.45	1	1	1	0	0	2.30
0	1	0	1	1	1.50	1	1	0	1	1	2.40
0	1	0	1	0	1.55	1	1	0	1	0	2.50
0	1	0	0	1	1.60	1	1	0	0	1	2.60 ¹
0	1	0	0	0	1.65	1	1	0	0	0	2.70 ¹
0	0	1	1	1	1.70	1	0	1	1	1	2.80 ¹
0	0	1	1	0	1.75	1	0	1	1	0	2.90 ¹
0	0	1	0	1	1.80	1	0	1	0	1	3.00 ¹
0	0	1	0	0	1.85	1	0	1	0	0	3.10 ¹
0	0	0	1	1	1.90	1	0	0	1	1	3.20 ¹
0	0	0	1	0	1.95	1	0	0	1	0	3.30 ¹
0	0	0	0	1	2.00	1	0	0	0	1	3.40 ¹
0	0	0	0	0	2.05	1	0	0	0	0	3.50 ¹

1 - Not available in 3.3 Vin.

Product Dimensions



PIN DESCRIPTIONS:

1 – Vout	5 – Gnd	9 – VID3	13 – Vin
2 – Vout	6 – VID0	10 – VID4	14 – No Pin
3 – Sense	7 – VID1	11 – Gnd	15 – Trim
4 – Vout	8 – VID2	12 – Vin	16 – Enable

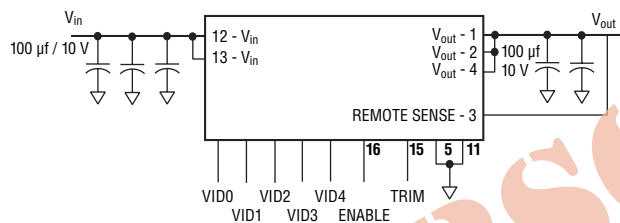
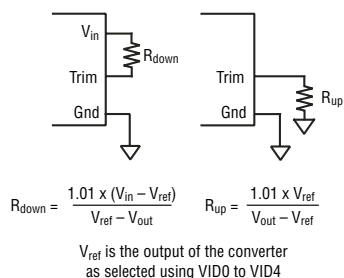
Specifications are subject to change without notice.

Customers should verify actual device performance in their specific applications.

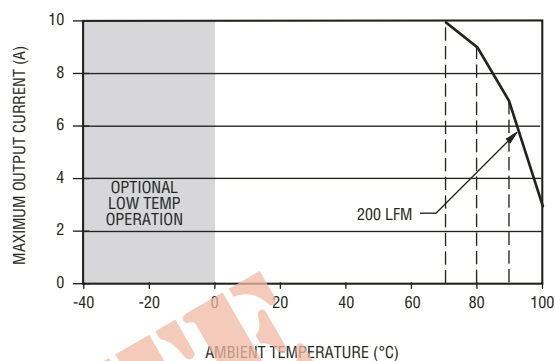
SC10A DAC Series – Power Module

BOURNS®

Product Schematic



Temperature Derating



How to Order

S C 10A - 5 S DAC -Z

Configuration _____

Internal Identifier _____

Current/Power (Amps) _____

Input Voltage (Volts) _____

Outputs _____

S = Single

Output Voltage _____

DAC = 5-pin DAC Controlled Output

Options _____

Z = Industrial Temperature Range (-40 °C Operation)



Reliable Electronic Solutions

Asia-Pacific: TEL +886- (0)2 25624117 • FAX +886- (0)2 25624116

Europe: TEL +41-41 768 5555 • FAX +41-41 768 5510

The Americas: TEL +1-951 781-5500 • FAX +1-951 781-5700

www.bourns.com