

## 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/in<sup>3</sup> 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 input .....4.5 VDC Min.  
5 VDC Nom.  
5.5 VDC Max.  
(4.75 Vin start-up)  
3.3 V input .....3.0 VDC Min.  
3.3 VDC Nom.  
3.6 VDC Max.

Current .....10 A Nom.

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

Inhibit Current .....0.1 mA Nom.

### Output Specifications

Current .....0 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  $\mu\text{s}$  Nom.

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

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

### General Specifications

MBTF...2,000 kHrs Nom. (40 °C, 80 % load)  
Operating Temperature .....0 to 100 °C  
(-40 to +100 °C optional)  
Storage Temperature.....-55 to +125 °C  
Switching Frequency.....500 kHz Nom.

### Standard Options

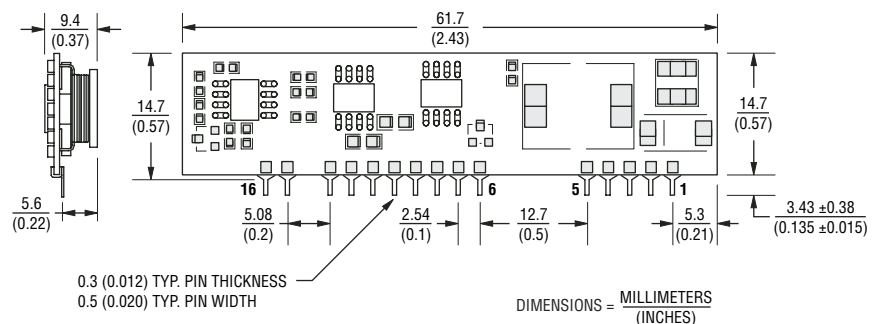
	Nominal Input (V)	Output Voltage (V)	Output Current (A)	Ripple Max. (mV pp)	Efficiency Typ. (%)
SC10A5SDAC	5	1.3 to 3.5	10	100	90
SC10A3SDAC	3.3				

### 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 <sup>1</sup>
0	1	0	0	0	1.65	1	1	0	0	0	2.70 <sup>1</sup>
0	0	1	1	1	1.70	1	0	1	1	1	2.80 <sup>1</sup>
0	0	1	1	0	1.75	1	0	1	1	0	2.90 <sup>1</sup>
0	0	1	0	1	1.80	1	0	1	0	1	3.00 <sup>1</sup>
0	0	1	0	0	1.85	1	0	1	0	0	3.10 <sup>1</sup>
0	0	0	1	1	1.90	1	0	0	1	1	3.20 <sup>1</sup>
0	0	0	1	0	1.95	1	0	0	1	0	3.30 <sup>1</sup>
0	0	0	0	1	2.00	1	0	0	0	1	3.40 <sup>1</sup>
0	0	0	0	0	2.05	1	0	0	0	0	3.50 <sup>1</sup>

1 - Not available in 3.3 Vin.

### Product Dimensions



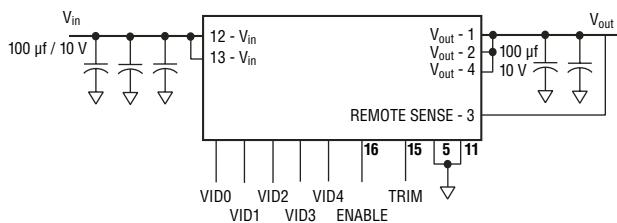
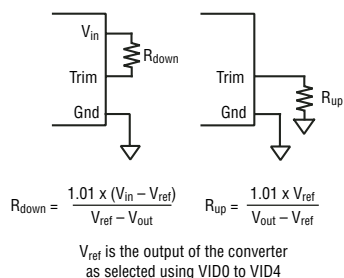
#### PIN DESCRIPTIONS:

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

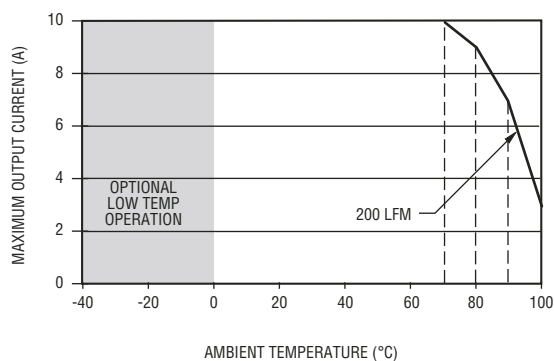
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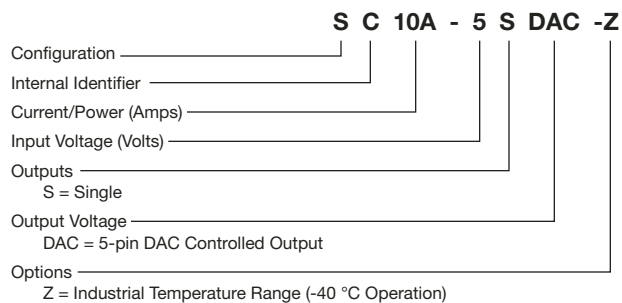
### Product Schematic



### Temperature Derating



### How to Order



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