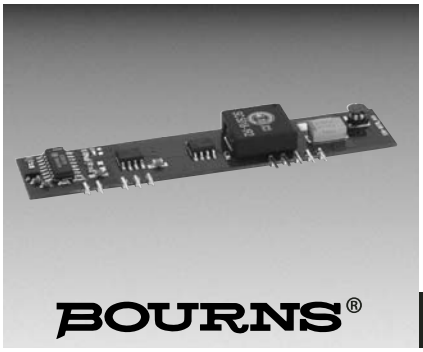


BOURNS®

Features

- Low cost
- 15 amp output current
- 90 % efficiency
- Industry-standard pin-out
- Low 0.6 ˝ profile
- Non-isolated output
- Remote sense
- Trim function
- Enable / disable
- Short-circuit protection with auto-restart
- Fast transient response
- High-temperature operation
- Output precharge capability
- Patents 5,770,940; 5,978,195 & 6,127,814

SC15A DAC Series – Power Module

General Information

The SC15A DAC is a low-cost, 15 amp, non-isolated DC-DC converter with an amazingly small footprint of only 0.8 in^2. Designed for today's high power microprocessors, the SC15A accepts either 5 V or 3.3 V inputs and offers DAC controlled outputs from 1.25 V to 3.5 V.

Using Bourns proprietary V²™ architecture, the SC15A 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 .....15 A Max.

Enable Voltage
- High = Disable.....2.4 VDC Min.
  (Source 500 mA)
- Low = Enable .....0.4 VDC max.

Enable/Disable Current .....1 mA Nom.

Output Specifications

Current .....15 A Max.

Voltage Setpoint Accuracy
.....±2 %Vnom Max.

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

Line Regulation .....±0.1 %Vnom

Load Regulation.....±0.3 % Vnom

Current Limit.....18 A Min.
21 A Nom.
30 A Max.

Dynamic Response
- 0 to 15 A load
  .....200 mV Nom. (Δi/Δt = 3 A/µs)
  19 µs Nom.
- 15 to 0 A load
  .....200 mV Nom. (Δi/Δt = 3 A/µs)
  19 µs Nom.

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

General Specifications

MBTF .....1,000 kHrs Nom.
(Bellcore TR332, 25 °C)

Operating Temperature.....-25 to +85 °C
(-40 to +85 °C optional)

Storage Temperature.....-40 to +125 °C

Switching Frequency .....200 kHz Min.
300 kHz Nom.
400 kHz Max.

Standard Options

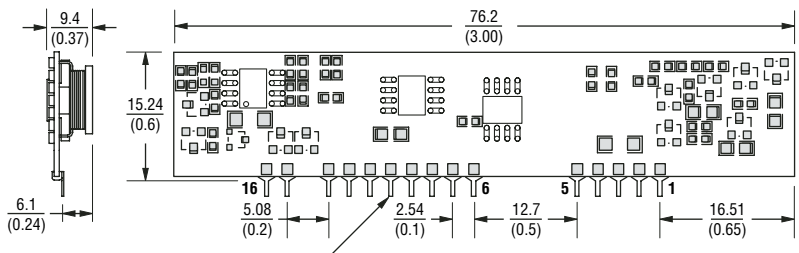
	Nominal Input (V)	Output Voltage (V)	Output Current (A)	Short-circuit Current Typ. (A)	Noise Max. (mV pp)	Efficiency Typ. (%)
SC15A-5SDAC	5	1.3 to 3.5	15	22	100	90
SC15A-3SDAC	3.3	1.3 to 2.5				

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



0.3 (0.012) TYP. PIN THICKNESS
0.5 (0.020) TYP. PIN WIDTH
3.43 (0.135) TYP. PIN LENGTH BELOW SHOULDER

DIMENSIONS = MILLIMETERS / (INCHES)

PIN DESCRIPTIONS:

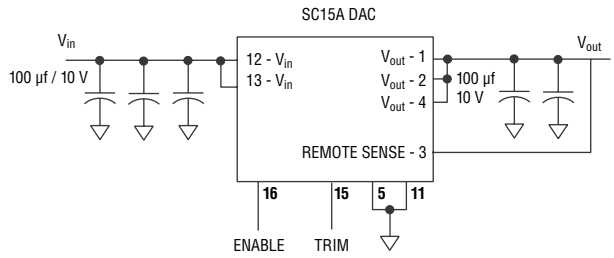
1 – Vout	**5** – Gnd	**9** – VID3	**13** – Vin
2 – Vout	**6** – VID0	**10** – VID4	**14** – No Pin
3 – Sense	**7** – VID1	**11** – Gnd	**15** – Trim
4 – Vout	**8** – VID2	**12** – Vin	**16** – Enable

TOLERANCES = (.xx) = ± .25 / (.01)

(.xxx) = ± .13 / (.005)

Specifications are subject to change without notice.
Customers should verify actual device performance in their specific applications.

Product Schematic



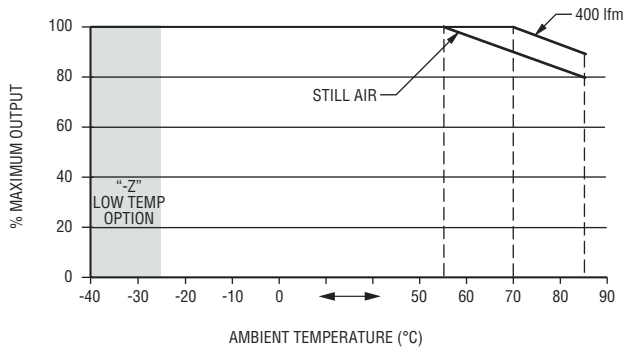
How to Order

S C 15A - 5 S DAC -Z

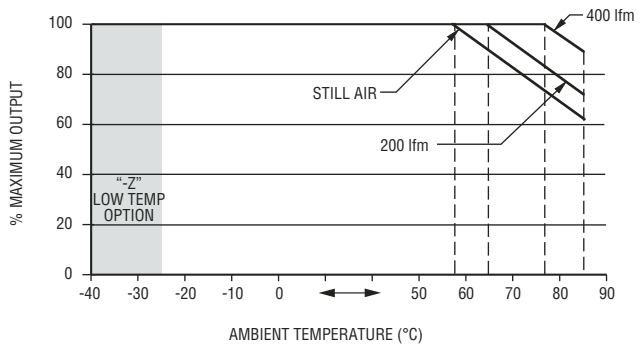
- Configuration
- Internal Identifier
- Current/Power (Amps)
- Input Voltage (Volts)
- Outputs
  - S = Single
- Output Voltage (V)
  - DAC = 5-pin DAC Controlled Output
- Options
  - Z = Industrial Temperature Range (-40 °C Operation)

Temperature Derating

SC15A-5Sxx



SC15A-3Sxx



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