POWER

SIL60C2
Dual Row Pins; 60 Amps

**Data Sheet**

Total Power:	240 Watts
Input Voltage:	4.5 - 13.8 Vdc
# of Outputs:	Single

SPECIAL FEATURES

- Two bit VID adjustable output voltage
- Phase shedding for power saving during light loads
- High power density desgin means reduced board space requirement
- Power good output signal
- Operating ambient temperature up to +70 °C with suitable derating and forced air cooling
- Remote ON/OFF (active high)
- 0 A minimum load
- Input under-voltage lockout
- EU directive 2002/95/EC compliant for RoHS

SAFETY

- Designed to meet EN60950 when used in end use equipment

RoHS 6/6 COMPLIANT
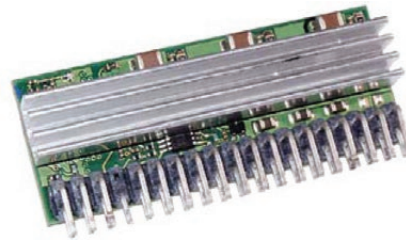
Electrical Specifications

Input		
Input voltage range		4.5 - 13.8 Vdc
Input current (max.)	Minimum load Remote ON/OFF	65 mA 20 mA
Input current (max.)		20.0 A @ Io max.
Start-up time	Power up Remote ON/OFF	<20 ms <20 ms
Output		
Output voltage	See Note 5	0.8 - 4.0 V
Output setpoint accuracy	with VID	1.0%
Line regulation	Low line to high line	±0.3%
Load regulation	Full load to min. load	±0.2%
Load line		0.225 µΩ
Min/Max load		0 A/60 A
Overshoot	At turn-on	2% max.
Ripple and noise 5 Hz to 20 MHz		<40 mV Vin = 12 V, Vout = 1.5 V
Transient	Deviation (dependent on output capacitance)	20 µs recovery to within regulation band
General		
Efficiency	Vi = 12 V, Vo = 1.5V, Iout = 60 A	89%
Switching frequency	Fixed/ph	300 kHz
Material flammability		UL94V-0
Weight		TBD
MTBF	12 V @ 40 °C, 100% load Bellcore 332	>5,000,000 hours

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Environmental Specifications

Thermal performance	Operating ambient temperature Non-operating ambient temperature	-0 °C to +70 °C -40 °C to +125 °C
Protection		
Over temperature protection	Hiccup, non-latching	
Short-circuit	Hiccup, non-latching	
Overvoltage protection	Latching	
Recommended System Capacitance		
Input	Ceramic	3x22 µF
Output		1,500 µF

Ordering Information

Model Number [3,5]	Output Power (Max.)	Input Voltage	Output Voltage	Output Current (Min.)	Output Current (Max.)	Efficiency (Typical)	Regulation		Orientation
							Line	Load	
SIL60C2-00SADJ-VDJ	240 W	4.5 - 13.8 Vdc	0.8 - 4.0 V	0 A	60 A	89%	±0.3%	±0.5%	Vertical

Part Number System with Options

Product Family	Rated Output Current	Performance	Generation	Input Voltage	Output Voltage	Mounting Option	Pins	RoHS Compliance
SIL	60	C	2 -	00	SADJ -	X	D	J
SIL = Single In Line	60 = 60 Amp	C = Cost Optimized	2 = Increased current density	00 = 4.5-13.8 V	Single Adjustable Output	V = Vertical H = Horizontal	D = Dual row	J = Pb free (RoHS 6/6 compliant)

Setting Output Voltage

Default output voltage is set with the 2 bit VID as follows:

Vid1	Vid0	Vout
1	1	0.8 V
1	0	1.0 V
0	1	1.2 V
0	0	1.4 V

The output voltage may be optionally adjusted with a resistor placed in the series with the sense line, from 0.8 V to 4.0 V.

To trim the output voltage, place a resistor in series with pin 6 (RS+). The formula for calculating the value of this resistor is:

$$R_{trim} = 2000 \times \left(\frac{V_{out} - VID\_SET}{VID\_SET} \right)$$

When trimming output voltage, always choose the nearest VID Vout setting.

Notes:

1. Measured as per recommended system capacitance.

2. di/dt = 10 A/ µs, Vin = Nom, Tc = 25 °C, load change = 0.50 Io max. and vice versa.

3. External fusing is recommended.

4. Measured with external filter.

5. Uses external resistor from trim pin to (-) trim pin.

6. Airflow dependent, 300 LFM minimum required.

7. No capacitor needed for ripple current capability.

8. No capacitor needed for stability.

9. NOTICE: Some models do not support all options. Please contact your local Artesyn Embedded Technologies representative or use the on-line model number search tool at http://www. artesyn.com/power to find a suitable alternative.

Mechanical Drawings
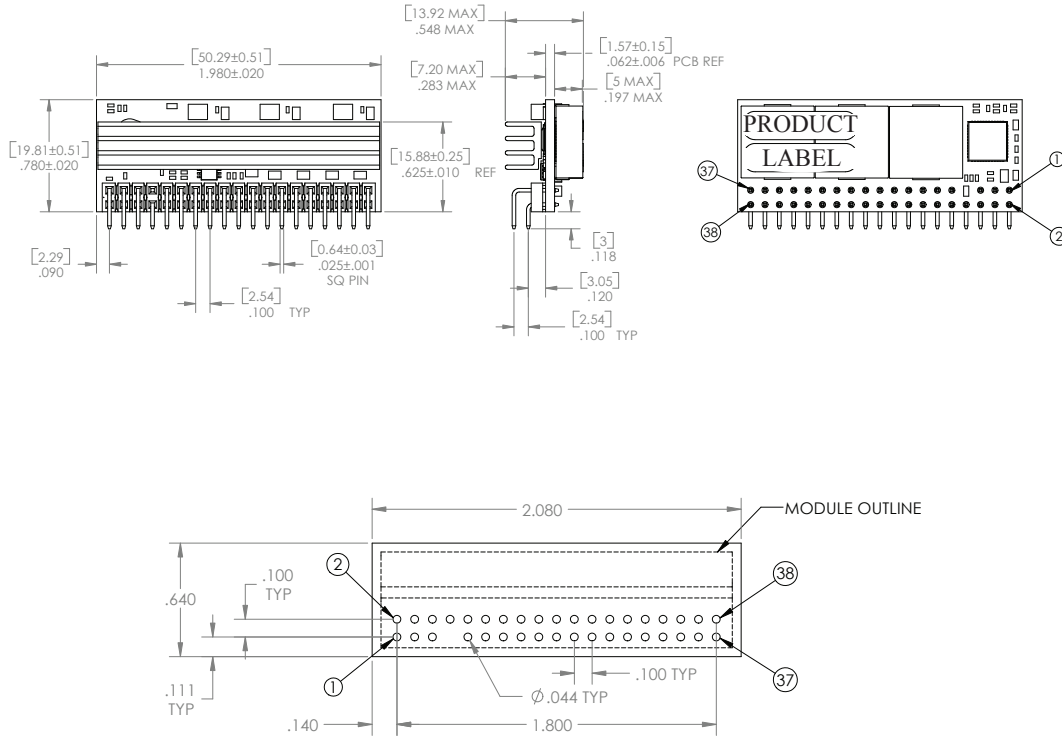
Pin Assignments							
Pin	Function	Pin	Function	Pin	Function
1	VID0	14	Vin	27	Vout
2	Viout*	15	Ground	28	Vout
3	VID1	16	Ground	29	Ground
4	Power Good	17	Vout	30	Ground
5	RS-	18	Vout	31	Ground
6	RS+	19	Vout	32	Ground
7	Open	20	Vout	33	Vout
8	Enable	21	Ground	34	Vout
9	Ground	22	Ground	35	Vout
10	Ground	23	Ground	36	Vout
11	Vin	24	Ground	37	Ground
12	Vin	25	Vout	38	Ground
13	Vin	26	Vout		

*Vout is a current monitoring pin. 31 mV / A, ±15% tolerance.

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