

- Non-Isolated Converter
- High Efficiency to 91%
- 1.5VDC to 3.3VDC Outputs
- On/Off Control Function
- Adjustable Output Voltage
- Small SIP Package Style

Unit measures 2.5"L x 0.55"W x 0.26"H



Model Number	Input Range	Output Voltage	Output Amps	Efficiency
OPN20-03S2P5	3.0-3.6VDC	2.5VDC	6A	86%
OPN20-03S2P1	3.0-3.6VDC	2.1VDC	6A	84%
OPN20-03S1P8	3.0-3.6VDC	1.8VDC	6A	82%
OPN20-03S1P5	3.0-3.6VDC	1.5VDC	6A	80%
OPN20-05S3P3	4.5-5.5VDC	3.3VDC	6A	89%
OPN20-05S2P5	4.5-5.5VDC	2.5VDC	6A	87%
OPN20-05S2P1	4.5-5.5VDC	2.1VDC	6A	85%
OPN20-05S1P8	4.5-5.5VDC	1.8VDC	6A	84%
OPN20-05S1P5	4.5-5.5VDC	1.5VDC	6A	82%

20W Wide Input, Non-Isolated Single Inline DC/DC Converters

OPN20 series

INPUT SPECIFICATIONS

Input Voltage, Nominal	3.3VDC(Note 2)	5VDC
Input Voltage Ranges	3.0 - 3.6VDC	4.5-5.5 VDC
Maximum Input Current	6A (Note 4)	
On/Off Control		
(Ref to -Input pin)	Open or 0V<VR<1V=ON	
3.3Vin	2.4V<Vr<6V=OFF	
5Vin	3.2V<Vr<6V	
Input Reflected Ripple	625mA rms	

OUTPUT SPECIFICATIONS

Voltage and Current	See Selection Chart	
Preset Accuracy	+/- 2.7% max.	
Rise Time	80% FL and Nom Vin	8mS, typ.
Min Load	None	
Load Regulation	(0% - FL)	+/- 0.5%
Line Regulation	+/- 0.5%	
Temperature Coefficient	+/-0.02%/DegC	
Ripple/Noise (Pk-Pk, typ),	20Mhz BW	100mV
Overvoltage Protection	Clamp, 130-150% *	
Short Circuit Protection	Continuous, self-recovering	
Transient Response Recovery		
Time (See Fig 1)		
Load step change	100%-0% or 0%-100%	
	1A/10uS Nominal Input	
	Peak Deviation	80mV
	Settling Time	200uSec
Max External Load Capacitance	10,000uF	
O/P Current Limit (Note 1)	Latching	
Voltage Adjust (See Fig 2)	+/-10%	

GENERAL SPECIFICATIONS

Input-Output Isolation	None
In/Out Capacitance	1000 pF
Efficiency (Note 5)	See Selection Chart
Switching Frequency	500Khz, typ.
Dimensions (See Fig 3.)	2.5" x 0.55" x 0.26" (63.5 x 14.0 x 6.6mm)
Weight	0.3oz (8.5g)
MTBF (Note 3)	2.064x10-6th Hrs

ENVIRONMENTAL SPECIFICATIONS

Oper. Temp. Range (See Fig 4)	-40 to +85 DegC(FL)
Storage Temperature Range	-55 to +105 DegC *
Thermal Shock	Mil Std 810D
Over Temp Protection	+125DegC
MTBF	1,000,000 Hrs
	Mil Std 217, 25C
Shock/Vibration	To MIL-STD 810C

EMC SPECIFICATIONS

Conducted Emissions	EN55022, Level A
Radiated Emissions	EN55022, Level A
Conducted Immunity	EN61000-4-6, Criteria 2

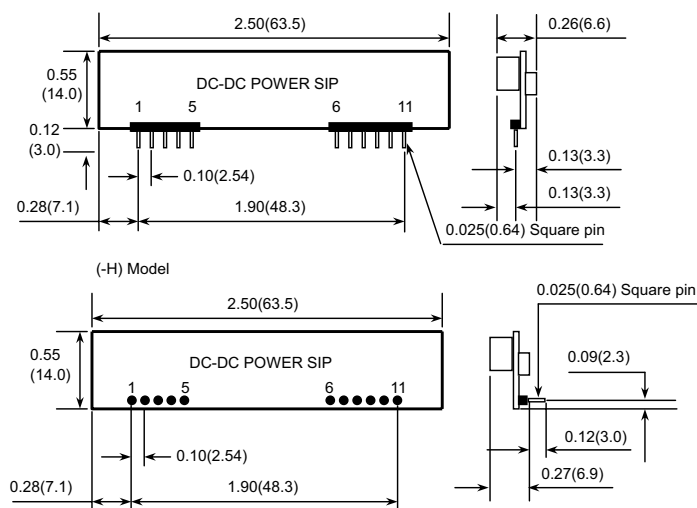
NOTES

1. Starting the Product into a Short Circuit Mode will damage the device.
2. In order to meet all specifications for the 3.3Vin models, an external capacitor is needed on the input. The capacitor is SANYO OS-CON,SA-Series, 68uF/10V.
3. BELLCORE TR-NWT-000332. Case 1: 50% Stress, Temperature at 40DegC. (Ground fixed and controlled environment)
4. Maximum value at nominal input voltage and full load.
5. Minimum value at nominal input voltage and full load.

All specifications are typical at nominal input, full load, and 25DegC unless otherwise noted

* These are stress ratings. Exposure of the devices to any of these conditions may adversely affect long term reliability. Proper operation under conditions other than the standard operating conditions is neither warranted nor implied.

MECHANICAL DIMENSIONS AND CURVE

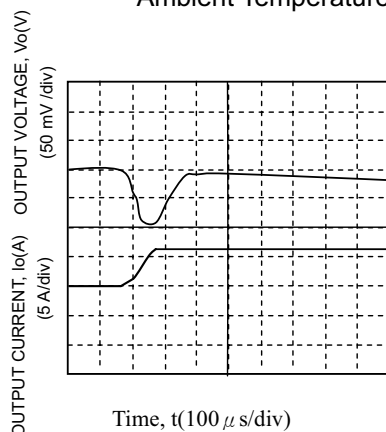
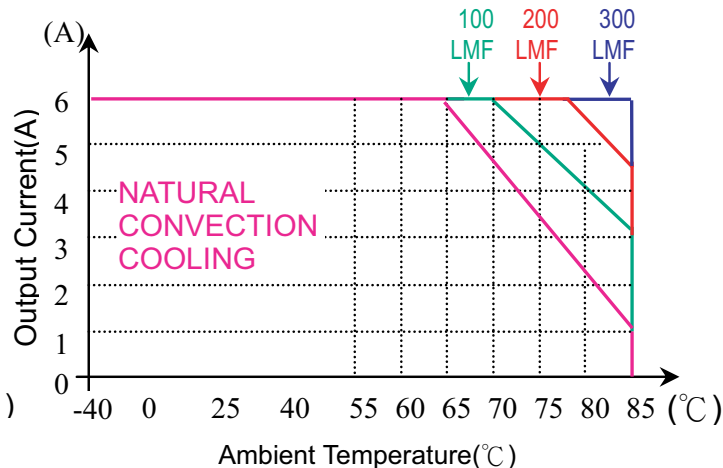
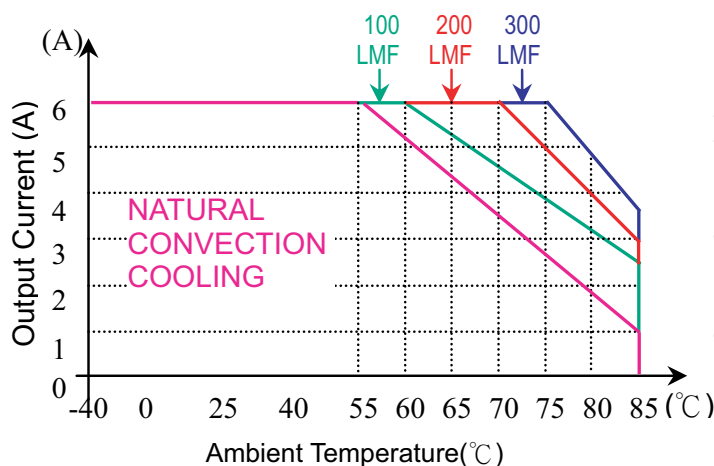


Pin#	Define
1	+OUTPUT
2	+OUTPUT
3	Sense (option) or no pin
4	+OUTPUT
5	GND
6	GND
7	+INPUT
8	+INPUT
9	Power OK (option) or no pin
10	TRIM
11	REMOTE ON-OFF

Dimensions are Inches (mm)
Pin pitch tolerance ± 0.014 (0.35)

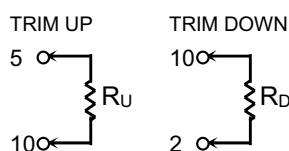
OPN20-03S2P5 Derating Curve

OPN20-05S3P3 Derating Curve



EXTERNAL OUTPUT TRIMMING

Output can be trimmed by using the method below.



Typical Transient Response to Step Load Change from 0% to 100% of I_o , max at Room Temperature and 5V Input
(Waveform Averaged to Eliminate Ripple Component.)