

FEATURES:

- 3 pin SIP package
- Pin-out compatible with LM78XX Linear
- Efficiency up to 96%, Non isolated, no need for heatsink
- Customized Solutions Available
- UL94V-0 Package Material
- Short circuit protection
- UL Recognized
- RoHS Compliant

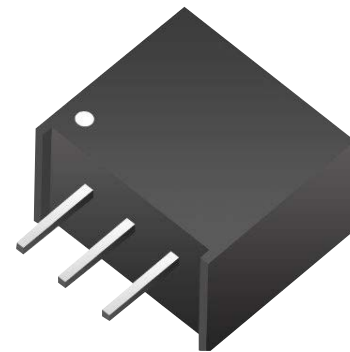


DC-DC Converter NL1-1A Series

Non-Isolated
Single Output
0.45" * 0.3" * 0.4"

Specifications typical at TA=25°C nominal input voltage and rated output current unless otherwise specified

| Part Number | Input Voltage Range | Output Voltage | Output Current | Efficiency | |
|-------------|---------------------|----------------|----------------|------------|------------|
| | Vdc | Vdc | mA | Min.Vin(%) | Max.Vin(%) |
| NL1-3P3-1A | 4.75~36 | 3.3 | 1000 | 90 | 78 |
| NL1-05-1A | 6.5~36 | 5 | 1000 | 92 | 85 |
| NL1-6P5-1A | 9.0~36 | 6.5 | 1000 | 93 | 88 |
| NL1-09-1A | 12~36 | 9 | 1000 | 95 | 90 |
| NL1-12-1A | 15~36 | 12 | 1000 | 95 | 92 |
| NL1-15-1A | 18~36 | 15 | 1000 | 96 | 94 |

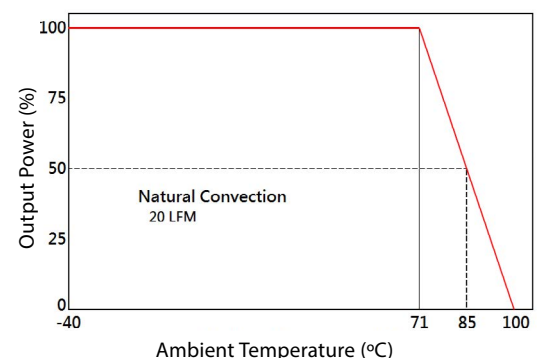


Output Specifications

| Parameters | Conditions | Min | Typ | Max | Units |
|---|--------------------------------|-----|-----|-----|-------|
| Voltage Tolerance | | | | ±2 | % |
| Short Circuit Protection | Hiccup, automatic recovery | | | | |
| Line Regulation | 1.2V to 1.5V | | | 0.3 | % |
| | 1.8V to 15V | | | 0.3 | % |
| Load Regulation | 1.2V to 1.5V (10% To 100% F.L) | | | 0.6 | % |
| | 1.8V to 15V (10% To 100% F.L) | | | 0.4 | % |
| Ripple & Noise (Without Output Capacitor) | 1.2V to 6.5V (BW=DC To 20MHz) | | | 50 | mVp-p |
| | 9V to 15V (BW=DC To 20MHz) | | | 75 | mVp-p |
| Transient Response Setting Time | 25% load step change | | 250 | | us |
| Capacitive Load | | | | 470 | uF |



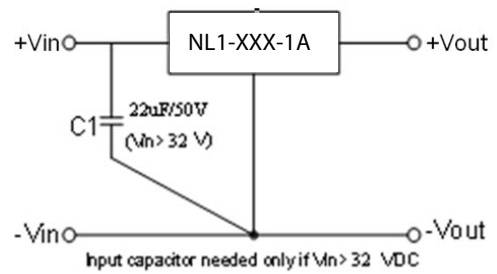
Temperature Derating Graph



General Specifications

| Parameters | Conditions | Min | Typ | Max | Units |
|-----------------------|---------------------------------|-----|----------------------|------|-------|
| Switching Frequency | | | 500 | | KHz |
| Operation Temperature | With derating | -40 | | +85 | °C |
| Storage Temperature | | -55 | | +125 | °C |
| Humidity | Non Condensing | | | 95 | % |
| Cooling | Natural Convection (20LFM) | | | | |
| Case Material | Non-Conductive Black Plastic | | | | |
| Weight | | | 2.0 | | g |
| Dimensions | | | 11.6x7.6x10.4 | | mm |
| MTBF (+25°C) | using MIL-HDBK 217F | | 5000x10 ³ | | hours |
| MTBF (+71°C) | using MIL-HDBK 217F | | 1000x10 ³ | | hours |

Application Examples

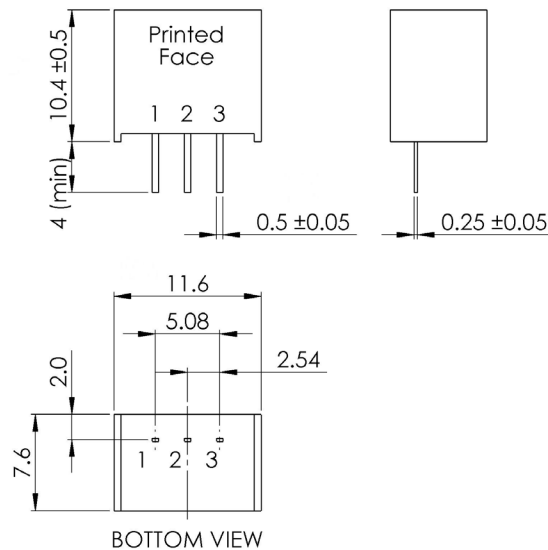


Part Number

$$\frac{NL1}{A} - \frac{XXX}{B} - \frac{1A}{C}$$

A: Series
B: Output Voltage
C: Output Current

Markings and Dimensions



UNIT: mm
Tolerance: XX.X ± 0.5, XX.XX ± 0.25,

PIN Connection

| PIN | 1 | 2 | 3 |
|----------|------|-----|-------|
| Function | +Vin | GND | +Vout |