NCP1601A, NCP1601B

C ac F d F c
D c C ca
C d c V a M d
P Fac C c
C

The NCP1601 is a controller designed for Power Factor Correction (PFC) boost circuits. The device operates in fixed−frequency Discontinuous Conduction Mode (DCM) and variable−frequency Critical Conduction Mode (CRM) and takes advantages from both operating modes. DCM limits the maximum switching frequency. It simplifies the front−ended EMI filter design. CRM limits the maximum currents of the boost stage diode, MOSFET and inductor. It reduces the costs and improves the reliability of the circuit. This device substantially exhibits unity power factor while operating in DCM and CRM. The NCP1601 minimizes the required number of external components. It incorporates high safety protection features that make the NCP1601 suitable for robust and compact PFC stages.

Features

- Near−Unity Power Factor in DCM or CRM
- Voltage−Mode Operation
- Low Startup and Shutdown Current Consumption
- Programmable Switching Frequency for DCM
- Synchronization Capability
- Overvoltage Protection (107% of Nominal Output Level)
- Undervoltage Protection or Shutdown (8% of Nominal Output Level)
- Programmable Overcurrent Protection
- Thermal Shutdown with Hysteresis (95/140°C)
- Two V


OBS
THIS
PLEA
RE

ELECTRICAL CHARACTERISTICS (For typical values T_J = 25°C. For min/max values, T_J = −40°C to +125°C, V_{CC} = 15 V, $V_{control}$ = 100 nF, Ramp = 100 pF, Osc = 220 pF unless otherwise specified)

CharacteristicV	

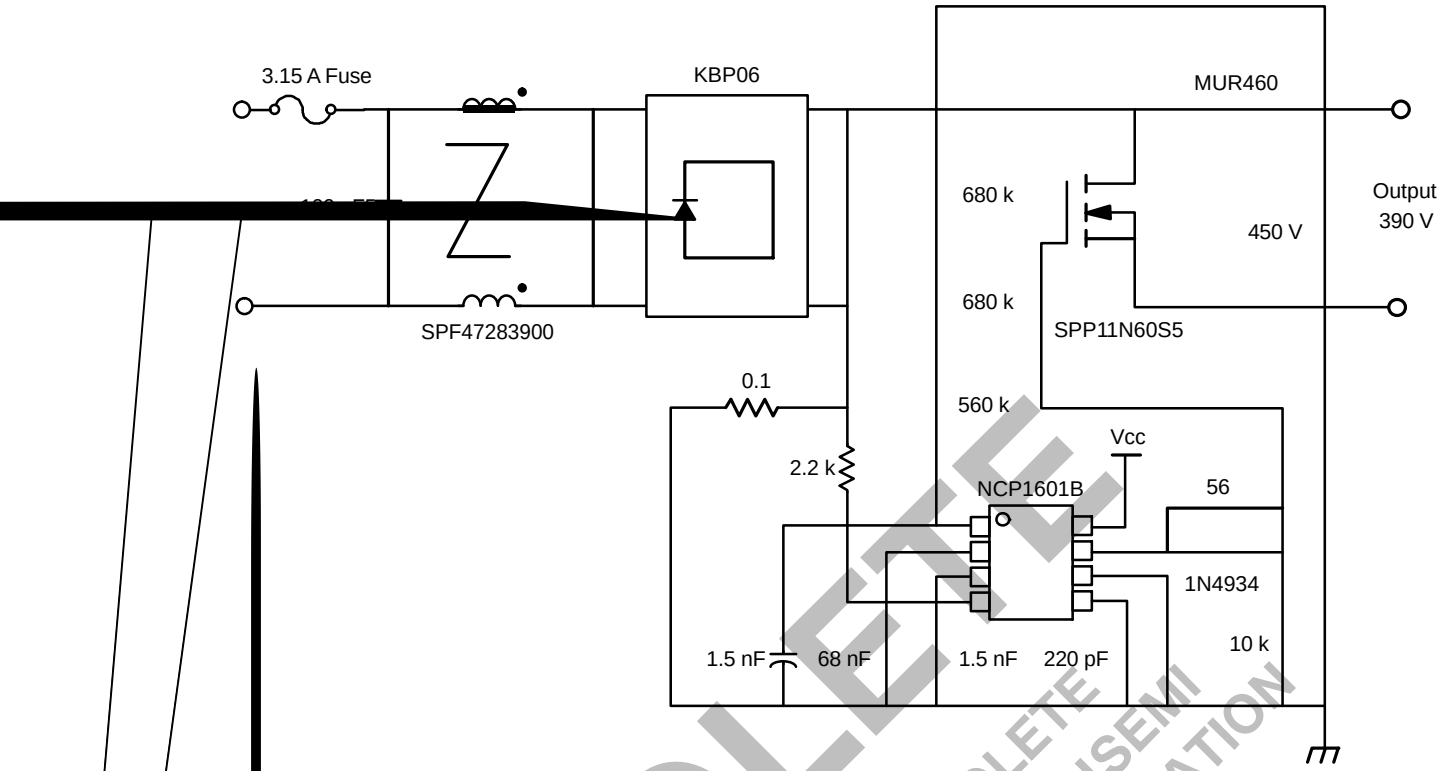
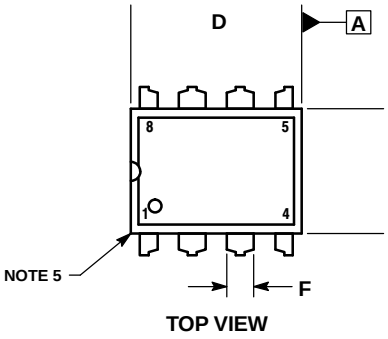


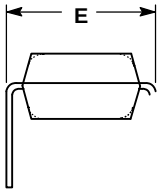
Figure 40. 130 W Power Factor Correction Circuit

PACKAGE DIMENSIONS

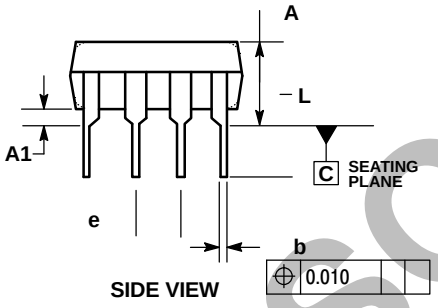
8 LEAD PDIP
CASE 626−05
ISSUE M



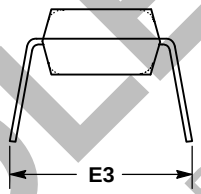
TOP VIEW



END VIEW
NOTE 3



SIDE VIEW



END VIEW

NOTES:
1. DIMENSIONING AND TOLERANCING PER ASME Y14.5M, 1994.
2. CONTROLLING DIMENSION: INCHES.
3. DIMENSION E IS MEASURED WITH THE LEADS RE-

	INCHES			MILLIMETERS		
DIM	MIN	NOM	MAX	MIN	NOM	MAX
A	----	----	0.210	----	----	5.33
A1	0.015	----	----	0.38	----	----
b	0.014	0.018	0.022	0.35	0.46	0.56
C	0.008	0.010	0.014	0.20	0.25	0.36
D	0.355	0.365	0.400	9.02	9.27	10.02
D1	0.005	----	----	0.13	----	----
E	0.300	0.310	0.325	7.62	7.87	8.26

e	0.100 BSC			2.54 BSC		
L	0.115	0.130	0.150	2.92	3.30	3.81