

3A SOURCE/SINK TERMINATION REGULATOR

PRELIMINARY DATA SHEET

Pb Free Product**DESCRIPTION**

NX1730 is a 3A source and sink Low Dropout Regulator designed for DDR I and DDR II termination application. Current limit circuitry in both sink and source side plus internal thermal shutdown protects the device under short circuit condition. NX1730 can be disabled by pulling down the Reference Pin below 0.2V using external small signal transistor or a MOSFET.

The NX1730 can also be used as an adjustable output voltage regulator using an external reference.

NX1730 is available in TO-252 package for low cost yet excellent thermal capability.

- Independent power sequencing
- Support DDR I (1.25V VTT) and DDR II (0.9V VTT)
- 3A Source and Sink current capability
- Shut down by pulling REFEN pin low
- Current Limit
- Thermal Shut down
- TO-252 package
- Pb-free and RoHS compliant

FEATURES**APPLICATIONS**

- DDR Memory Termination Supply
- Desktop Motherboard or Notebook applications
- Graphic Card
- Set Top Box
- Active Terminal Bus Termination

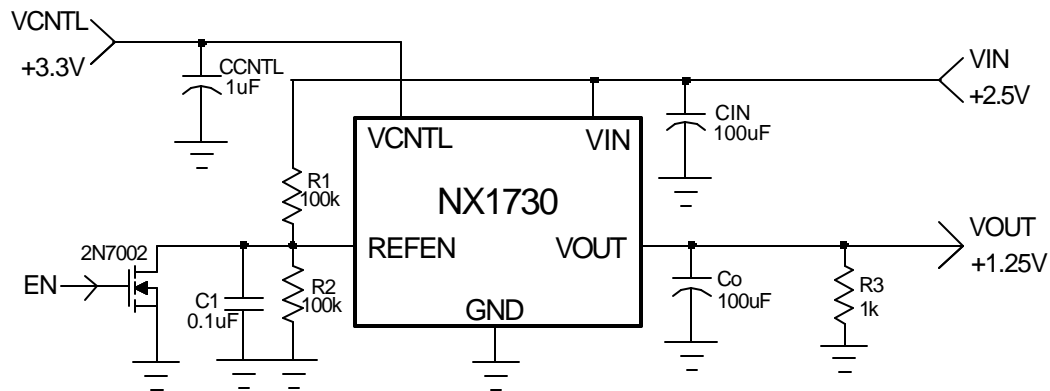
TYPICAL APPLICATION

Figure1 - Typical application of NX1730

ORDERING INFORMATION

| Device | Temperature | Package | Pb-Free |
|------------|-------------|-----------|---------|
| NX1730CDTR | 0 to 70°C | TO-252-5L | Yes |
| NX1730CMTR | 0 to 70°C | MLPD-8L | Yes |

ABSOLUTE MAXIMUM RATINGS(NOTE1)

| | |
|--|----------------|
| Input Voltage | 6.5V |
| Power Dissipation @ 25°C | |
| TO_252/MLPD_8L | 1.471W |
| ESD Susceptibility | 2kV |
| Lead Temperature(Soldering,10sec.) | 260°C |
| Storage Temperature Range | -65°C to 150°C |
| Operating Junction Temperature Range | -40°C to 125°C |

PACKAGE INFORMATION

| 5-LEAD PLASTIC TO_252 | 8-LEAD PLASTIC MLPD |
|--|--|
| $\theta_{JA} \approx 47^{\circ}\text{C/W}$ (NOTE2) | $\theta_{JA} \approx 45^{\circ}\text{C/W}$ (NOTE3) |
| | |

ELECTRICAL SPECIFICATIONS

Unless otherwise specified, these specifications apply over $V_{IN}=2.5\text{V}$, $V_{CNTL}=3.3\text{V}$, $V_{REFEN}=1.25\text{V}$, $C_{OUT}=10\mu\text{F}$ (ceramic), and $T_A = 25^{\circ}\text{C}$.

| PARAMETER | SYM | Test Condition | Min | TYP | MAX | Units |
|------------------------------------|-------------------|---|-----|---------|-----|--------------------|
| Output Offset Voltage | V_{OS} | $I_{OUT}=0\text{A}$ | -20 | 0 | 20 | mV |
| Load Regulation | ΔV_{LOAD} | I_L : From 0A to 2A I_L : From 0A to -2A | -20 | 0 | 20 | mV |
| Input Voltage Range(DDRI/II) | V_{IN} | Keep $V_{CNTL} \geq V_{IN}$ on operation power on and power off sequences | 1.7 | 2.5/1.8 | | V |
| | V_{CNTL} | | 3 | 3.3/5 | 6 | |
| Operating Current of VCNTL | I_{CNTL} | No Load | | 0.5 | | mA |
| Current In Shutdown Mode | I_{SHDN} | $V_{REFEN} < 0.2\text{V}$, $R_L = 180\text{ohm}$ | | 90 | | μA |
| Short Circuit Protection | | | | | | |
| Current Limit | I_{LIMIT} | | 3.1 | 4 | | A |
| Over Temperature Protection | | | | | | |
| Thermal Shutdown Temperature | T_{SD} | $3.3\text{V} \leq V_{CNTL} \leq 5\text{V}$ | | 150 | | $^{\circ}\text{C}$ |
| Thermal Shutdown Temperature | ΔT_{SD} | $3.3\text{V} \leq V_{CNTL} \leq 5\text{V}$ | | 35 | | $^{\circ}\text{C}$ |
| Shutdown Function | | | | | | |
| Shutdown Threshold Trigger | | Output=High | 0.6 | | | V |
| | | Output=Low | | | 0.2 | |

PIN DESCRIPTIONS

| Symbol | Pin Description |
|--------|---|
| VIN | Regulator's power supply voltage. |
| GND | Ground. |
| REFEN | Reference voltage input and Regulator's enable. |
| VOUT | Output voltage. |
| VCNTL | Gate drive voltage. |

NOTE1: Stresses above those listed in "ABSOLUTE MAXIMUM RATINGS", may cause permanent damage to the device. This is a stress only rating and operation of the device at these or any other conditions above those indicated in the operational sections of this specification is not implied.

NOTE2: Mounted on a 1" square copper.

NOTE3: PAD is GND.