

**2A SOURCE/SINK TERMINATION REGULATOR**

PRELIMINARY DATA SHEET

**Pb Free Product****DESCRIPTION**

NX1720 is a 2A 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. NX1720 can be disabled by pulling down the Reference Pin below 0.2V using external small signal transistor or a MOSFET.

The NX1720 can also be used as an adjustable output voltage regulator using an external reference.

NX1720 is available in TO-252 package, standard SOIC8 package as well as SOIC8 with exposed pad package.

- Independent Power Sequencing
- Support DDR I (1.25V VTT) and DDR II (0.9V VTT)
- 2A Source and Sink current capability
- Shut down by pulling RefEN pin low
- Current Limit
- Thermal Shut down
- SOIC8, SOICP8 and 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

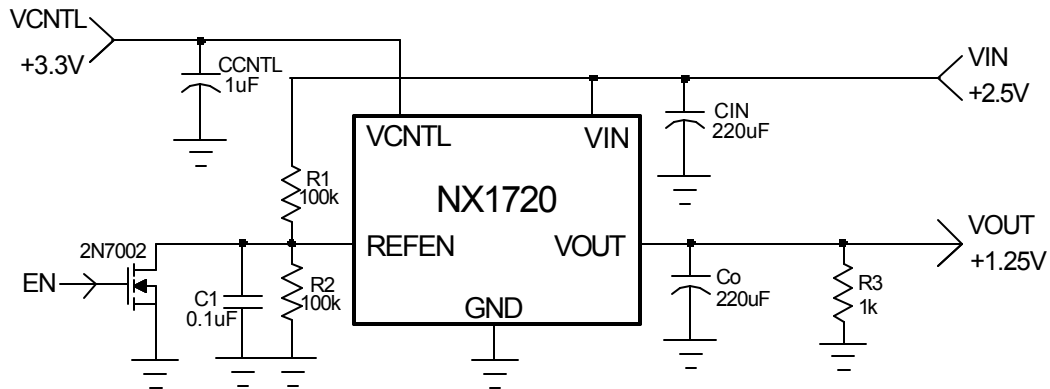
**TYPICAL APPLICATION**

Figure1 - Typical application of 1720

**ORDERING INFORMATION**

Device	Temperature	Package	Pb-Free
NX1720CS1TR	0 to 70°C	SOIC - 8L	Yes
NX1720CS2TR	0 to 70°C	SOICP - 8L	Yes
NX1720CDTR	0 to 70°C	TO-252 - 5L	Yes

## ABSOLUTE MAXIMUM RATINGS<sup>(NOTE1)</sup>

Input Voltage .....	6.5V
Power Dissipation .....	Internally Limited
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

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.

## PACKAGE INFORMATION

8-LEAD PLASTIC SOIC	8-LEAD PLASTIC SOICP
$\theta_{JA} \approx 96^{\circ}\text{C/W}$ (NOTE2) 	$\theta_{JA} \approx 55^{\circ}\text{C/W}$ 
5-LEAD PLASTIC TO_252	
$\theta_{JA} \approx 47^{\circ}\text{C/W}$ (NOTE3) 	

NOTE2: Pin 5-8 internally fused.

NOTE3: Mounted on 1" square copper.

## ELECTRICAL SPECIFICATIONS

Unless otherwise specified, these specifications apply over  $V_{IN}=2.5V$ ,  $V_{CNTL}=3.3V$ ,  $V_{REFEN}=1.25V$ ,  $C_{OUT}=220\mu F$ (ceramic), and  $T_A = 25^\circ C$ .

PARAMETER	SYM	Test Condition	Min	TYP	MAX	Units
Output Offset Voltage	$V_{OS}$	IOUT=0A	-20	0	20	mV
Load Regulation	$\Delta V_{LOAD}$	$I_L$ :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	$I_{SHDN}$	$V_{REFEN} < 0.2V, R_L = 180\Omega$		90		$\mu A$
<b>Short Circuit Protection</b>						
Current Limit	$I_{LIMIT}$		2.1	3.1		A
<b>Over Temperature Protection</b>						
Thermal Shutdown Temperature	$T_{SD}$	$3.3V \leq V_{CNTL} \leq 5V$		150		$^\circ C$
Thermal Shutdown Hysteresis	$\Delta T_{SD}$			35		$^\circ C$
<b>Shutdown Function</b>						
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.
VOUT	Output voltage.
VCNTL	Gate drive voltage.