

2A SOURCE/SINK TERMINATION REGULATOR

PRELIMINARY DATA SHEET

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 power SOIC8 package as well as TO-252 package for better thermal capability.

- 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 and TO-252 package

APPLICATIONS

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

TYPICAL APPLICATION

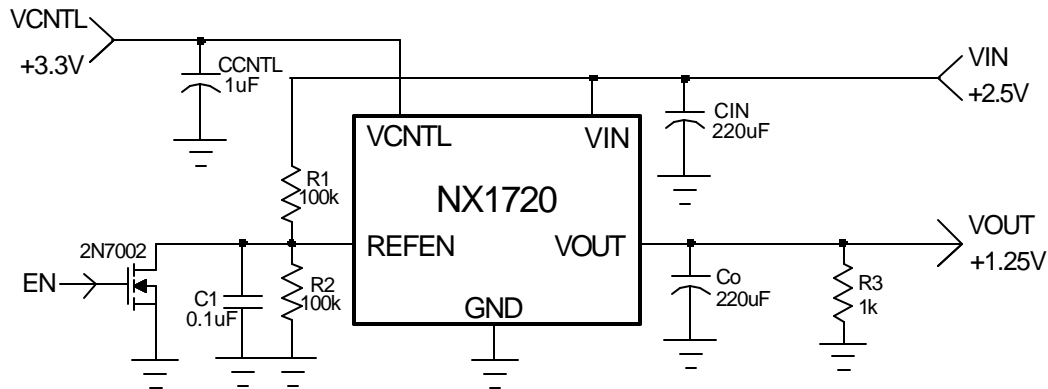


Figure1 - Typical application of 1720

ORDERING INFORMATION

Device	Temperature	Package
NX1720CSTR	0 to 70°C	SOIC-8L
NX1720CDTR	0 to 70°C	TO-252-5L

ABSOLUTE MAXIMUM RATINGS^(NOTE1)

Input Voltage	6.5V
Power Dissipation @ 25°C	
SOIC-8	0.625W
TO-252	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

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

ELECTRICAL SPECIFICATIONS

Unless otherwise specified, these specifications apply over $V_{IN}=2.5\text{V}$, $V_{CNTL}=3.3\text{V}$, $V_{REFEN}=1.25\text{V}$, $C_{OUT}=220\mu\text{F}$ (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}		2.1	3.1		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 Hysteresis	ΔT_{SD}			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.
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: Pin 5-8 internally fused.

NOTE3: Mounted on 1" square copper.