NEXSEM

NX1730

3A SOURCE/SINK TERMINATION REGULATOR

PRELIMINARY DATA SHEET

DESCRIPTION

NX1730 is a 3A source and sink Low Dropout Regulator designed for DDRI and DDRII 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.

FEATURES

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

APPLICATIONS

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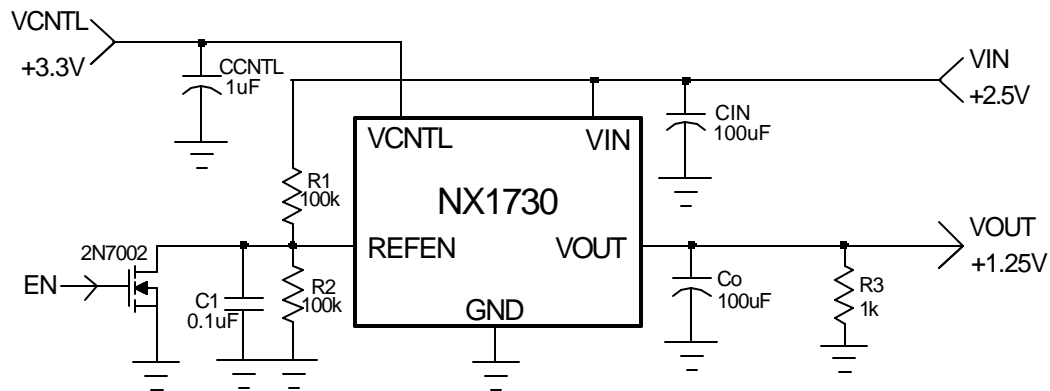
TYPICAL APPLICATION

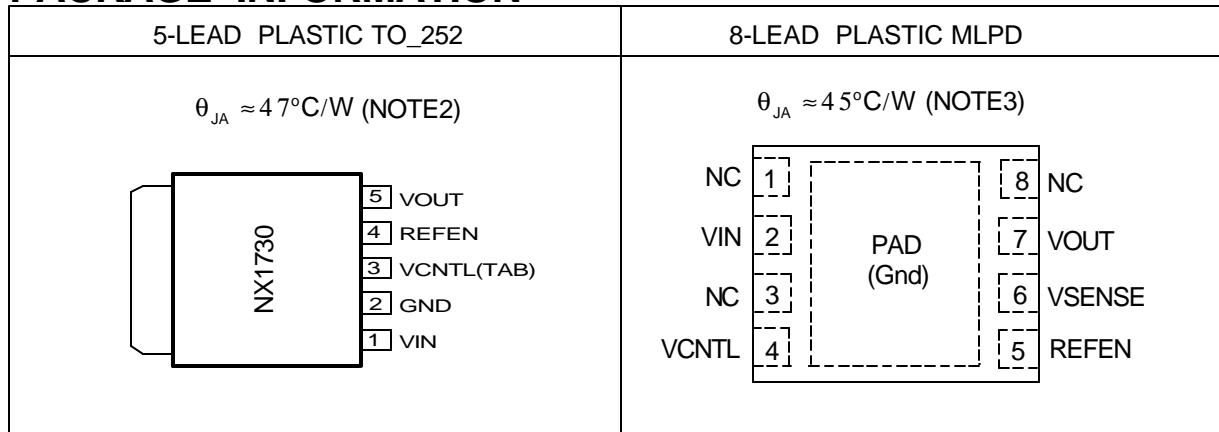Figure1 - Typical application of NX1730

ORDERING INFORMATION

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

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
$\theta_{JA} \approx 47°C/W$ (NOTE2)	$\theta_{JA} \approx 45°C/W$ (NOTE3)

5-LEAD PLASTIC TO_252 (NX1730):
- 5 VOUT
- 4 REFEN
- 3 VCNTL(TAB)
- 2 GND
- 1 VIN

8-LEAD PLASTIC MLPD (PAD (Gnd)):
- NC 1 — 8 NC
- VIN 2 — 7 VOUT
- NC 3 — 6 VSENSE
- VCNTL 4 — 5 REFEN

ELECTRICAL SPECIFICATIONS

Unless otherwise specified, these specifications apply over V_{IN}=2.5V, V_{CNTL}=3.3V, V_{REFEN}=1.25V, C_{OUT}=10uF(ceramic), and T_A = 25°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}>=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=180ohm		90		μA
Short Circuit Protection						
Current Limit	I_{LIMIT}		3.1	4		A
Over Temperature Protection Thermal Shutdown Temperature	T_{SD}	3.3V<=V_{CNTL}<=5V		150		°C
Thermal Shutdown Temperature	delta_T_{SD}	3.3V<=V_{CNTL}<=5V		35		°C
Shutdown Function Shutdown Threshold Trigger		Ouput=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.