

MC7800, MC7800A, MC7800AE, NCV7800



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1.0 A Positive Voltage Regulators

These voltage regulators are monolithic integrated circuits designed as fixed-voltage regulators for a wide variety of applications including local, on-card regulation. These regulators employ internal current limiting, thermal shutdown, and safe-area compensation. With adequate heatsinking they can deliver output currents in excess of 1.0 A. Although designed primarily as a fixed voltage regulator, these devices can be used with external components to obtain adjustable voltages and currents.

Features

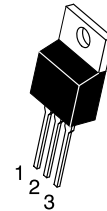
- Output Current in Excess of 1.0 A
- No External Components Required
- Internal Thermal Overload Protection
- Internal Short Circuit Current Limiting
- Output Transistor Safe-Area Compensation
- Output Voltage Offered in 1.5%, 2% and 4% Tolerance
- Available in Surface Mount D²PAK-3, DPAK-3 and Standard 3-Lead Transistor Packages
- NCV Prefix for Automotive and Other Applications Requiring Site and Control Changes
- Pb-Free Packages are Available

MAXIMUM RATINGS (T_A = 25°C, unless otherwise noted)

Rating	Symbol	Value			Unit
		369C	221A	936	
Input Voltage (5.0 – 18 V) (24 V)	V _I	35 40			Vdc
Power Dissipation	P _D	Internally Limited			W
Thermal Resistance, Junction-to-Ambient	R _{θJA}	92	65	Figure 15	°C/W
Thermal Resistance, Junction-to-Case	R _{θJC}	5.0	5.0	5.0	°C/W
Storage Junction Temperature Range	T _{stg}	–65 to +150			°C
Operating Junction Temperature	T _J	+150			°C

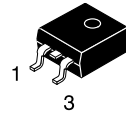
Stresses exceeding Maximum Ratings may damage the device. Maximum Ratings are stress ratings only. Functional operation above the Recommended Operating Conditions is not implied. Extended exposure to stresses above the Recommended Operating Conditions may affect device reliability.

*This device series contains ESD protection and exceeds the following tests:
Human Body Model 2000 V per MIL_STD_883, Method 3015.
Machine Model Method 200 V.



TO-220-3
T SUFFIX
CASE 221AB

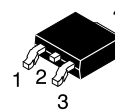
Heatsink surface
connected to Pin 2.



Pin 1. Input
2. Ground
3. Output

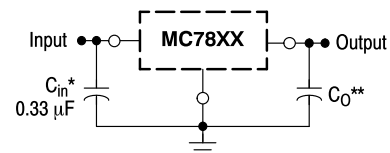
D²PAK-3
D2T SUFFIX
CASE 936

Heatsink surface (shown as terminal 4 in case outline drawing) is connected to Pin 2.



DPAK-3
DT SUFFIX
CASE 369C

STANDARD APPLICATION



A common ground is required between the input and the output voltages. The input voltage must remain typically 2.0 V above the output voltage even during the low point on the input ripple voltage.

XX, These two digits of the type number indicate nominal voltage.

* C_{in} is required if regulator is located an appreciable distance from power supply filter.

** C_O is not needed for stability; however, it does improve transient response. Values of less than 0.1 μF could cause instability.

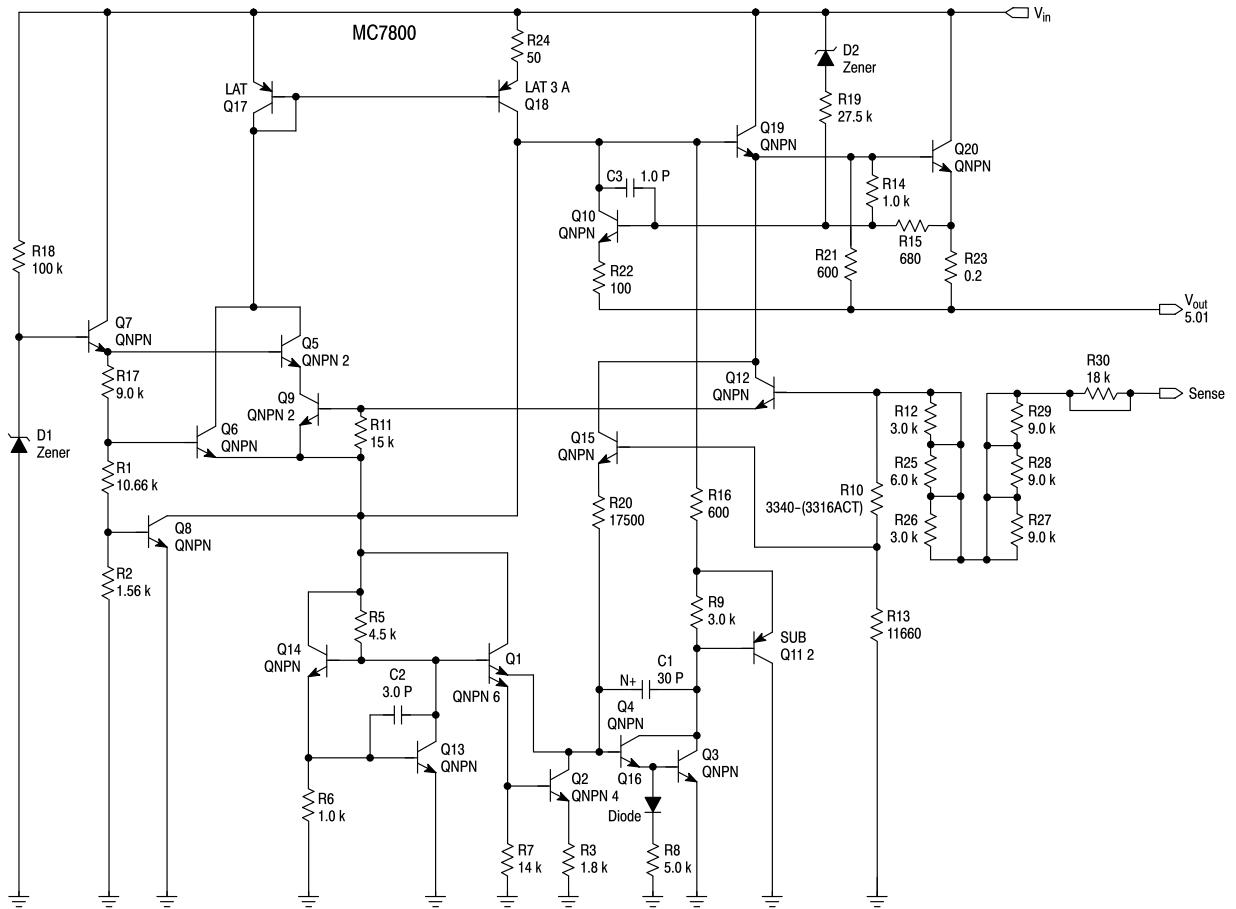
ORDERING INFORMATION

See detailed ordering and shipping information in the package dimensions section on page 23 of this data sheet.

DEVICE MARKING INFORMATION

See general marking information in the device marking section on page 30 of this data sheet.

MC7800, MC7800A, MC7800AE, NCV7800



This device contains 22 active transistors.

Figure 1. Representative Schematic Diagram

MC7900 Series

1.0 A Negative Voltage Regulators

The MC7900 series of fixed output negative voltage regulators are intended as complements to the popular MC7800 series devices. These negative regulators are available in the same seven-voltage options as the MC7800 devices. In addition, one extra voltage option commonly employed in MECL systems is also available in the negative MC7900 series.

Available in fixed output voltage options from -5.0 V to -24 V , these regulators employ current limiting, thermal shutdown, and safe-area compensation – making them remarkably rugged under most operating conditions. With adequate heatsinking they can deliver output currents in excess of 1.0 A.

- No External Components Required
- Internal Thermal Overload Protection
- Internal Short Circuit Current Limiting
- Output Transistor Safe-Area Compensation
- Available in 2% Voltage Tolerance (See Ordering Information)
- Pb-Free Package May be Available. The G-Suffix Denotes a Pb-Free Lead Finish

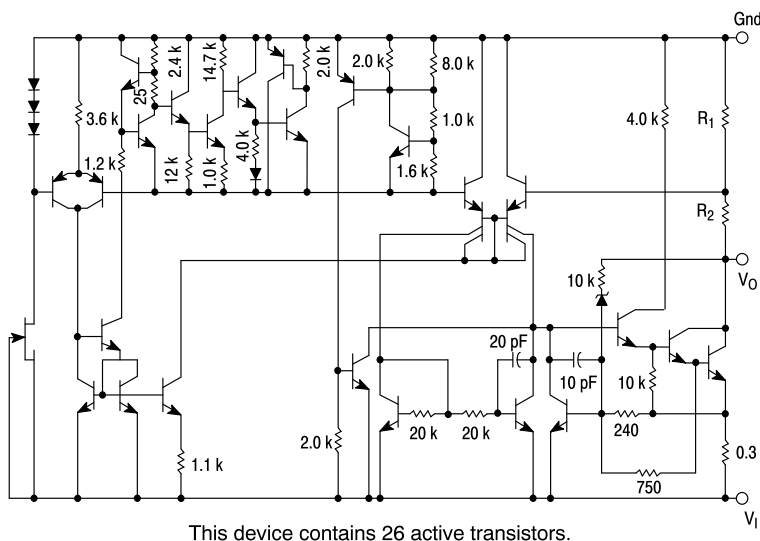


Figure 1. Representative Schematic Diagram

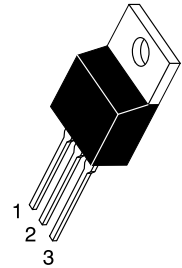


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TO-220
T SUFFIX
CASE 221AB

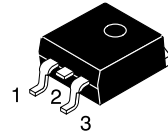
Heatsink surface
connected to Pin 2.



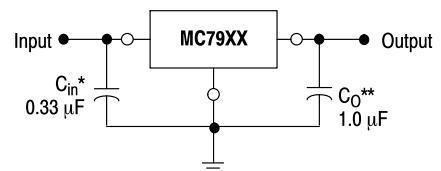
Pin 1. Ground
2. Input
3. Output

D²PAK
D2T SUFFIX
CASE 936

Heatsink surface (shown as terminal 4 in
case outline drawing) is connected to Pin 2.



STANDARD APPLICATION



A common ground is required between the input and the output voltages. The input voltage must remain typically 2.0 V above more negative even during the high point of the input ripple voltage.

XX, These two digits of the type number indicate nominal voltage.

* C_{in} is required if regulator is located an appreciable distance from power supply filter.

** C_O improve stability and transient response.

ORDERING INFORMATION

See detailed ordering and shipping information in the package dimensions section on page 11 of this data sheet.

DEVICE MARKING INFORMATION

See general marking information in the device marking section on page 14 of this data sheet.

MC7900 Series

MAXIMUM RATINGS ($T_A = +25^\circ\text{C}$, unless otherwise noted.)

Rating	Symbol	Value	Unit
Input Voltage ($-5.0\text{ V} \geq V_O \geq -18\text{ V}$) (24 V)	V_I	-35 -40	Vdc
Power Dissipation Case 221A $T_A = +25^\circ\text{C}$ Thermal Resistance, Junction-to-Ambient Thermal Resistance, Junction-to-Case Case 936 (D ² PAK) $T_A = +25^\circ\text{C}$ Thermal Resistance, Junction-to-Ambient Thermal Resistance, Junction-to-Case	P_D θ_{JA} θ_{JC} P_D θ_{JA} θ_{JC}	Internally Limited 65 5.0 Internally Limited 70 5.0	W $^\circ\text{C}/\text{W}$ $^\circ\text{C}/\text{W}$ W $^\circ\text{C}/\text{W}$ $^\circ\text{C}/\text{W}$
Storage Junction Temperature Range	T_{stg}	-65 to +150	$^\circ\text{C}$
Junction Temperature	T_J	+150	$^\circ\text{C}$

Stresses exceeding Maximum Ratings may damage the device. Maximum Ratings are stress ratings only. Functional operation above the Recommended Operating Conditions is not implied. Extended exposure to stresses above the Recommended Operating Conditions may affect device reliability.

*This device series contains ESD protection and exceeds the following tests:

Human Body Model 2000 V per MIL_STD_883, Method 3015
Machine Model Method 200 V

MC7905B, MC7905C

ELECTRICAL CHARACTERISTICS ($V_I = -10\text{ V}$, $I_O = 500\text{ mA}$, $T_{low}^* < T_J < +125^\circ\text{C}$, unless otherwise noted.)

Characteristics	Symbol	Min	Typ	Max	Unit
Output Voltage ($T_J = +25^\circ\text{C}$)	V_O	-4.8	-5.0	-5.2	Vdc
Line Regulation (Note 1) ($T_J = +25^\circ\text{C}$, $I_O = 100\text{ mA}$) $-7.0\text{ Vdc} \geq V_I \geq -25\text{ Vdc}$ $-8.0\text{ Vdc} \geq V_I \geq -12\text{ Vdc}$ ($T_J = +25^\circ\text{C}$, $I_O = 500\text{ mA}$) $-7.0\text{ Vdc} \geq V_I \geq -25\text{ Vdc}$ $-8.0\text{ Vdc} \geq V_I \geq -12\text{ Vdc}$	Reg_{line}	-	7.0 2.0	50 25	mV
Load Regulation, $T_J = +25^\circ\text{C}$ (Note 1) $5.0\text{ mA} \leq I_O \leq 1.5\text{ A}$ $250\text{ mA} \leq I_O \leq 750\text{ mA}$	Reg_{load}	-	11 4.0	100 50	mV
Output Voltage $-7.0\text{ Vdc} \geq V_I \geq -20\text{ Vdc}$, $5.0\text{ mA} \leq I_O \leq 1.0\text{ A}$, $P \leq 15\text{ W}$	V_O	-4.75	-	-5.25	Vdc
Input Bias Current ($T_J = +25^\circ\text{C}$)	I_{IB}	-	4.3	8.0	mA
Input Bias Current Change $-7.0\text{ Vdc} \geq V_I \geq -25\text{ Vdc}$ $5.0\text{ mA} \leq I_O \leq 1.5\text{ A}$	ΔI_{IB}	-	-	1.3 0.5	mA
Output Noise Voltage ($T_A = +25^\circ\text{C}$, $10\text{ Hz} \leq f \leq 100\text{ kHz}$)	V_n	-	40	-	μV
Ripple Rejection ($I_O = 20\text{ mA}$, $f = 120\text{ Hz}$)	RR	-	70	-	dB
Dropout Voltage $I_O = 1.0\text{ A}$, $T_J = +25^\circ\text{C}$	$V_I - V_O$	-	1.3	-	Vdc
Average Temperature Coefficient of Output Voltage $I_O = 5.0\text{ mA}$, $T_{low}^* \leq T_J \leq +125^\circ\text{C}$	$\Delta V_O / \Delta T$	-	-1.0	-	$\text{mV}/^\circ\text{C}$

1. Load and line regulation are specified at constant junction temperature. Changes in V_O due to heating effects must be taken into account separately. Pulse testing with low duty cycle is used.

* $T_{low} = -40^\circ\text{C}$ for MC7905B and $T_{low} = 0^\circ\text{C}$ for MC7905C.

NCP1117, NCV1117

1.0 A Low-Dropout Positive Fixed and Adjustable Voltage Regulators

The NCP1117 series are low dropout positive voltage regulators that are capable of providing an output current that is in excess of 1.0 A with a maximum dropout voltage of 1.2 V at 800 mA over temperature. This series contains nine fixed output voltages of 1.5 V, 1.8 V, 1.9 V, 2.0 V, 2.5 V, 2.85 V, 3.3 V, 5.0 V, and 12 V that have no minimum load requirement to maintain regulation. Also included is an adjustable output version that can be programmed from 1.25 V to 18.8 V with two external resistors. On chip trimming adjusts the reference/output voltage to within $\pm 1.0\%$ accuracy. Internal protection features consist of output current limiting, safe operating area compensation, and thermal shutdown. The NCP1117 series can operate with up to 20 V input. Devices are available in SOT-223 and DPAK packages.

Features

- Output Current in Excess of 1.0 A
- 1.2 V Maximum Dropout Voltage at 800 mA Over Temperature
- Fixed Output Voltages of 1.5 V, 1.8 V, 1.9 V, 2.0 V, 2.5 V, 2.85 V, 3.3 V, 5.0 V, and 12 V
- Adjustable Output Voltage Option
- No Minimum Load Requirement for Fixed Voltage Output Devices
- Reference/Output Voltage Trimmed to $\pm 1.0\%$
- Current Limit, Safe Operating and Thermal Shutdown Protection
- Operation to 20 V Input
- NCV Prefix for Automotive and Other Applications Requiring Site and Control Changes
- Pb-Free Packages are Available

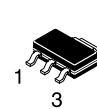
Applications

- Consumer and Industrial Equipment Point of Regulation
- Active SCSI Termination for 2.85 V Version
- Switching Power Supply Post Regulation
- Hard Drive Controllers
- Battery Chargers



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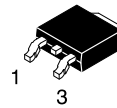


SOT-223
ST SUFFIX
CASE 318H

(Top View)

Pin: 1. Adjust/Ground
2. Output
3. Input

Heatsink tab is connected to Pin 2.



DPAK
DT SUFFIX
CASE 369C

(Top View)

ORDERING INFORMATION

See detailed ordering and shipping information in the package dimensions section on pages 12 and 12 of this data sheet.

DEVICE MARKING INFORMATION

See general marking information in the device marking section on page 15 of this data sheet.

TYPICAL APPLICATIONS

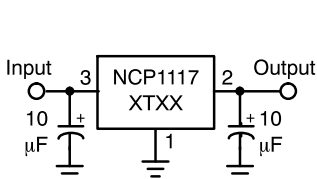


Figure 1. Fixed Output Regulator

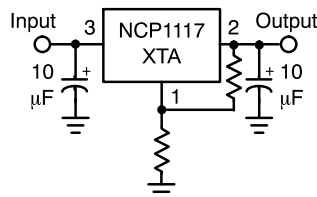


Figure 2. Adjustable Output Regulator

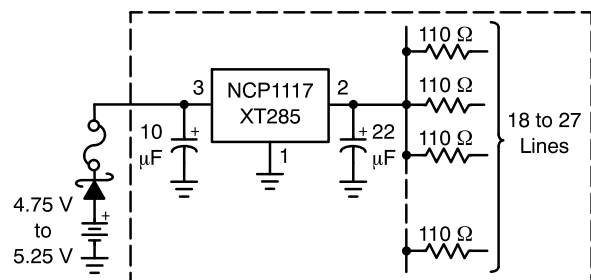


Figure 3. Active SCSI Bus Terminator

NCP1117, NCV1117

MAXIMUM RATINGS

Rating	Symbol	Value	Unit
Input Voltage (Note 1)	V_{in}	20	V
Output Short Circuit Duration (Notes 2 and 3)	–	Infinite	–
Power Dissipation and Thermal Characteristics			
Case 318H (SOT–223)			
Power Dissipation (Note 2)	P_D	Internally Limited	W
Thermal Resistance, Junction–to–Ambient, Minimum Size Pad	$R_{\theta JA}$	160	°C/W
Thermal Resistance, Junction–to–Case	$R_{\theta JC}$	15	°C/W
Case 369A (DPAK)			
Power Dissipation (Note 2)	P_D	Internally Limited	W
Thermal Resistance, Junction–to–Ambient, Minimum Size Pad	$R_{\theta JA}$	67	°C/W
Thermal Resistance, Junction–to–Case	$R_{\theta JC}$	6.0	°C/W
Maximum Die Junction Temperature Range	T_J	–55 to 150	°C
Storage Temperature Range	T_{stg}	–65 to 150	°C
Operating Ambient Temperature Range	T_A	0 to +125 –40 to +125	°C

Stresses exceeding Maximum Ratings may damage the device. Maximum Ratings are stress ratings only. Functional operation above the Recommended Operating Conditions is not implied. Extended exposure to stresses above the Recommended Operating Conditions may affect device reliability.

- This device series contains ESD protection and exceeds the following tests:
Human Body Model (HBM), Class 2, 2000 V
Machine Model (MM), Class B, 200 V
Charge Device Model (CDM), Class IV, 2000 V.
- Internal thermal shutdown protection limits the die temperature to approximately 175°C. Proper heatsinking is required to prevent activation. The maximum package power dissipation is:

$$P_D = \frac{T_{J(max)} - T_A}{R_{\theta JA}}$$
- The regulator output current must not exceed 1.0 A with V_{in} greater than 12 V.

NCP4586

150 mA, Low Noise, Low Dropout Regulator

The NCP4586 is a CMOS 150 mA low dropout linear with low noise, high ripple rejection, low dropout, high output voltage accuracy and low supply current. The device is available in three configurations: enable high, enable low and enable high plus auto-discharge. Small packages allow mounting on high density PCBs. This is an excellent general purpose regulator, well suited to many applications.

Features

- Operating Input Voltage Range: 1.7 V to 6.5 V
- Output Voltage Range: 1.2 to 5.0 V (available in 0.1 V steps)
- Very Low Dropout: 320 mV Typ. at 150 mA
- $\pm 1\%$ Output Voltage Accuracy ($V_{OUT} > 2\text{ V}$, $T_J = 25^\circ\text{C}$)
- High PSRR: 80 dB at 1 kHz
- Current Fold Back Protection
- Stable with a 0.47 μF Ceramic Capacitors
- Available in 1.0 x 1.0 UDFN, SC-82AB and SOT23-5 Package
- These are Pb-Free Devices

Typical Applications

- Battery Powered Equipment
- Portable Communication Equipment
- Cameras, MP3 Players and Camcorder
- High Stability Voltage Reference

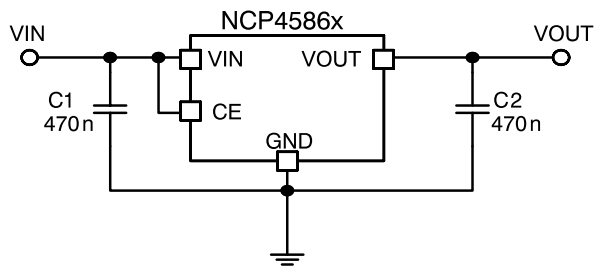


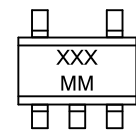
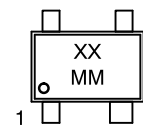
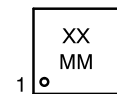
Figure 1. Typical Application Schematic



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MARKING DIAGRAMS



XX, XXX = Specific Product Code
MM = Lot Number

ORDERING INFORMATION

See detailed ordering and shipping information in the package dimensions section on page 15 of this data sheet.

NCP4586

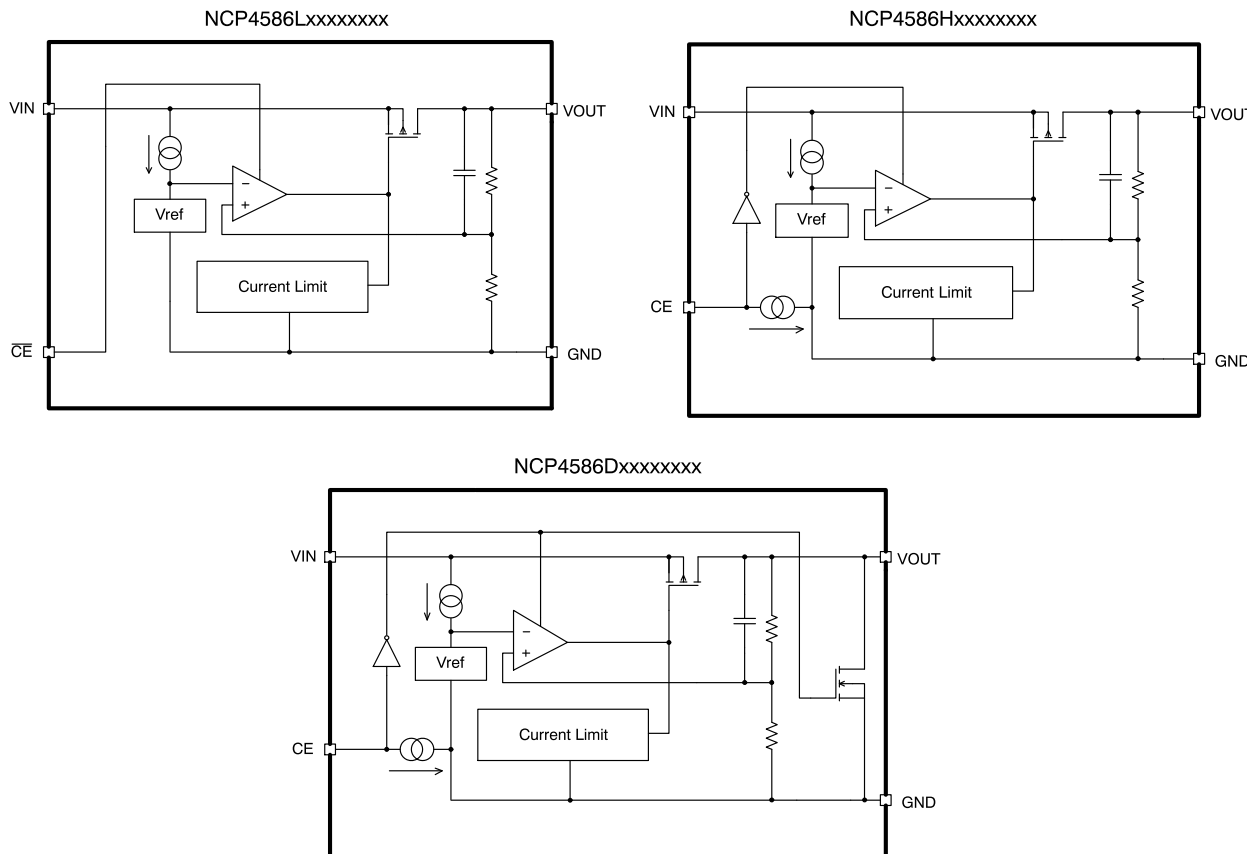


Figure 2. Simplified Schematic Block Diagram

PIN FUNCTION DESCRIPTION

Pin No. UDFN4	Pin No. SC82-AB	Pin No. SOT23-5	Pin Name	Description
4	4	1	VIN	Input pin
2	2	2	GND	Ground
3	1	3	\overline{CE}/CE	Chip enable pin ("L" active / "H" active)
1	3	5	VOUT	Output pin
-	-	4	NC	No connection

NCP565/NCV565

1.5 A Low Dropout Linear Regulator

The NCP565/NCV565 low dropout linear regulator will provide 1.5 A at a fixed output voltage or an adjustable voltage down to 0.9 V. The fast loop response and low dropout voltage make this regulator ideal for applications where low voltage and good load transient response are important. Device protection includes current limit, short circuit protection, and thermal shutdown.

Features

- Ultra Fast Transient Response ($< 1.0 \mu\text{s}$)
- Low Ground Current (1.5 mA at $I_{\text{load}} = 1.5 \text{ A}$)
- Low Dropout Voltage (0.9 V at $I_{\text{load}} = 1.5 \text{ A}$)
- Low Noise (28 μVrms)
- 0.9 V Reference Voltage
- Adjustable Output Voltage from 7.7 V down to 0.9 V
- 1.2 V, 1.5 V, 2.8 V, 3.0 V, 3.3 V Fixed Output Versions. Other Fixed Voltages Available on Request
- Current Limit Protection (3.3 A Typ)
- Thermal Shutdown Protection (160°C)
- NCV Prefix for Automotive and Other Applications Requiring Site and Change Controls
- Pb-Free Packages are Available

Typical Applications

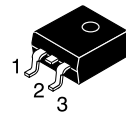
- Servers
- ASIC Power Supplies
- Post Regulation for Power Supplies
- Constant Current Source



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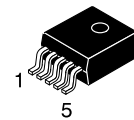
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MARKING DIAGRAMS



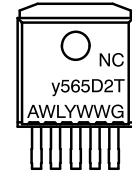
**D²PAK 3
CASE 936
FIXED**

Tab = Ground
Pin 1. V_{in}
2. Ground
3. V_{out}



**D²PAK 5
CASE 936A
ADJUSTABLE**

Tab = Ground
Pin 1. N.C.
2. V_{in}
3. Ground
4. V_{out}
5. Adj

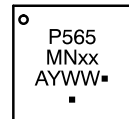


xx = 12 or 33
y = P or V
A = Assembly Location
WL = Wafer Lot
Y = Year
WW = Work Week
G = Pb-Free



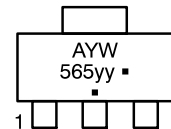
**DFN6, 3x3.3
CASE 506AX**

xx = Voltage Rating
AJ = Adjustable
12 = 1.2 V 30 = 3.0V
15 = 1.5 V 33 = 3.3 V
28 = 2.8 V



**SOT-223
CASE 318E**

yy = Voltage Rating
12 = 1.2 V
A = Assembly Location
Y = Year
W = Work Week
▪ = Pb-Free Package



Tab = V_{out}
Pin 1. Ground
2. V_{out}
3. V_{in}

(Note: Microdot may be in either location)

ORDERING INFORMATION

See detailed ordering and shipping information in the package dimensions section on page 13 of this data sheet.

NCP565/NCV565

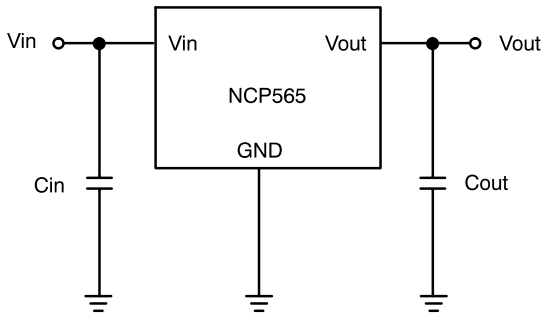


Figure 1. Typical Application Schematic, Fixed Output

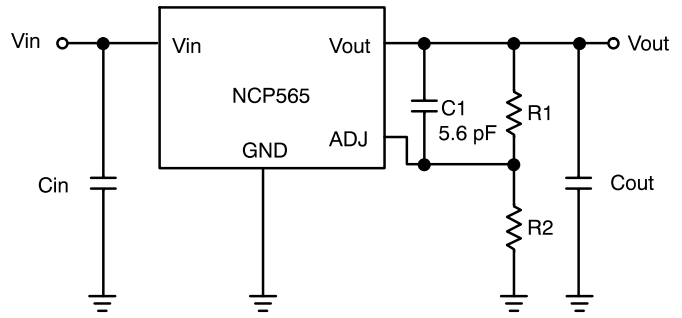


Figure 2. Typical Application Schematic, Adjustable Output

PIN DESCRIPTION

D ² PAK 5	D ² PAK 3	DFN6		SOT-223	Symbol	Description
Pin No. Adj. Version	Pin No. Fixed Version	Pin No. Adj. Version	Pin No. Fixed Version	Pin No. Fixed Version		
1	–	1, 2	1, 2, 5	–	N.C.	–
2	1	3	3	3	V _{in}	Positive Power Supply Input Voltage
3, Tab	2, Tab	6	6	1	Ground	Power Supply Ground
4	3	4	4	2, Tab	V _{out}	Regulated Output Voltage
5	–	5	–	–	Adj	This pin is to be connected to the sense resistors on the output. The linear regulator will attempt to maintain 0.9 V between this pin and ground. Refer to the Application Information section for output voltage setting.

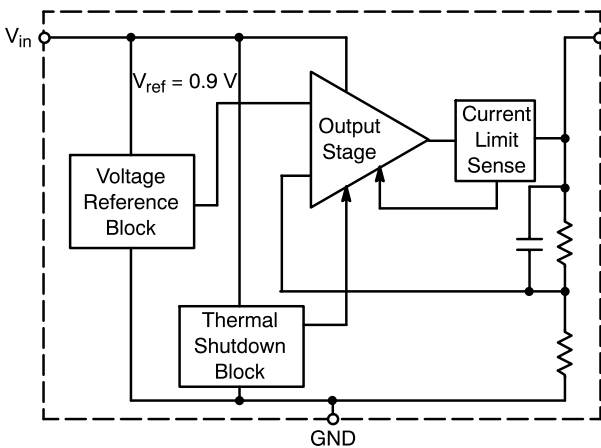


Figure 3. Block Diagram, Fixed Output

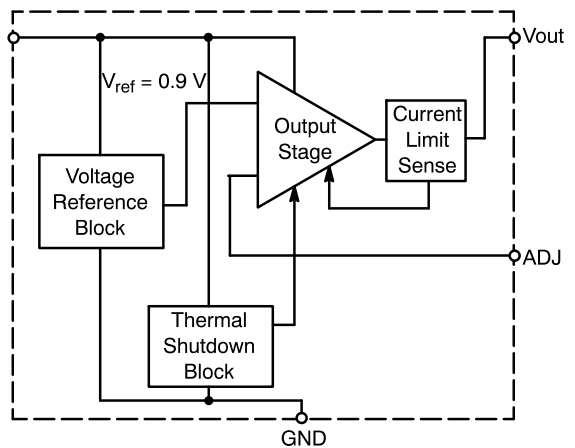


Figure 4. Block Diagram, Adjustable Output

NCP630

3.0 A Fast Linear Voltage Regulators

The NCP630 is a low dropout positive voltage regulator that is capable of providing a guaranteed output current of 3.0 A with a maximum dropout voltage of 1.25 V at 3.0 A over temperature. The fast turn on time allows step changes in loads commonly found in low voltage microprocessor applications. The NCP630 is currently offered as an adjustable output version that can be programmed down to 1.2 V with two external resistors and as a fixed output version at 3.47 V. On chip trimming adjusts the reference/output voltage to within $\pm 1.5\%$ accuracy. Internal protection features consist of output current limiting and thermal shutdown. NCP630 is available in D²PAK package.

Features

- Output Current of 3.0 A
- 1.25 V Maximum Dropout Voltage at 3.0 A Over Temperature
- Voltage on Shutdown Pin is TTL Compatible
- Reference/Output Voltage Trimmed to $\pm 1.5\%$
- Current Limit Protection
- Thermal Shutdown Protection
- -40°C to 125°C Junction Temperature Range
- Pb-Free Packages are Available

Applications

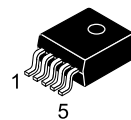
- Microprocessor Power Supplies
- DSP Power Supplies
- SMPS Post Regulation
- Battery Chargers



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MARKING DIAGRAM



**D²PAK
D2T SUFFIX
CASE 936A**



NCP630A

Tab = Ground
Pin 1. Shutdown
2. V_{in}
3. Ground
4. V_{out}
5. Adj

NCP630G

Tab = Ground
Pin 1. Shutdown
2. V_{in}
3. Ground
4. V_{out}
5. Sense

x = Specific Device Code
A = Assembly Location
WL = Wafer Lot
Y = Year
WW = Work Week
G = Pb-Free Package

ORDERING INFORMATION

See detailed ordering and shipping information in the package dimensions section on page 9 of this data sheet.

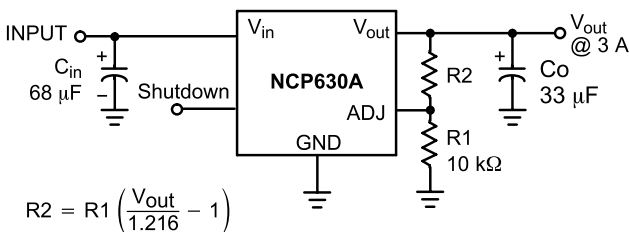


Figure 1. Typical Application Circuit for NCP630A

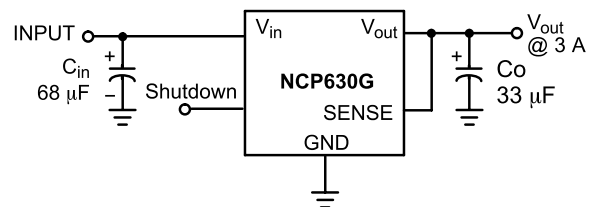


Figure 2. Typical Application Circuit for NCP630G

NCP630

MAXIMUM RATINGS

Rating	Symbol	Value	Unit
Input Voltage (Note 1)	V_{in}	12	V
Shutdown Voltage	Shutdown	-0.3 to $V_{in} + 0.3$	V
Output Voltage	V_{out}	-0.3 to $V_{in} + 0.3$	V
Output Short Circuit Duration (Note 2)	-	Infinite	-
Power Dissipation and Thermal Characteristics Case 936F (D ² PAK) Power Dissipation (Note 2) Thermal Resistance, Junction-to-Ambient Thermal Resistance, Junction-to-Case	P_D $R_{\theta JA}$ $R_{\theta JC}$	Internally Limited 45 5.0	W °C/W °C/W
Operating Junction Temperature Range	T_J	-40 to 125	°C
Storage Temperature Range	T_{stg}	-55 to 150	°C
Lead Soldering Temperature @ 260°C	T_{solder}	10	sec

Maximum ratings are those values beyond which device damage can occur. Maximum ratings applied to the device are individual stress limit values (not normal operating conditions) and are not valid simultaneously. If these limits are exceeded, device functional operation is not implied, damage may occur and reliability may be affected.

1. This device series contains ESD protection and exceeds the following tests:

Human Body Model JESD 22-A114-B

Machine Model JESD 22-A115-A

2. The maximum package power dissipation is:

$$P_D = \frac{T_{J(max)} - T_A}{R_{\theta JA}}$$

PIN FUNCTION DESCRIPTION

Pin No.	NCP630A	NCP630G	Description
1	Shutdown	Shutdown	This input is used to place the NCP630 into shutdown mode. The NCP630 is active when a voltage greater than 2.0 V is applied. The NCP630 will be placed into a shutdown mode when a voltage less than 0.8 V is applied. If left unused then connect the pin high.
2	V_{in}	V_{in}	Positive power supply input voltage
3, Tab	Ground	Ground	Power supply ground
4	V_{out}	V_{out}	Regulated output voltage
5	Adj	-	This pin is to be Connected to the R_{sense} resistors on the output. It maintains 1.216 V between itself and ground. Refer to Figure 1 for equation.
5	-	Sense	This pin is to be connected near the load for better regulation.

TL783C, TL783Y HIGH-VOLTAGE ADJUSTABLE REGULATOR

SLVS036C – SEPTEMBER 1981 – REVISED APRIL 1997

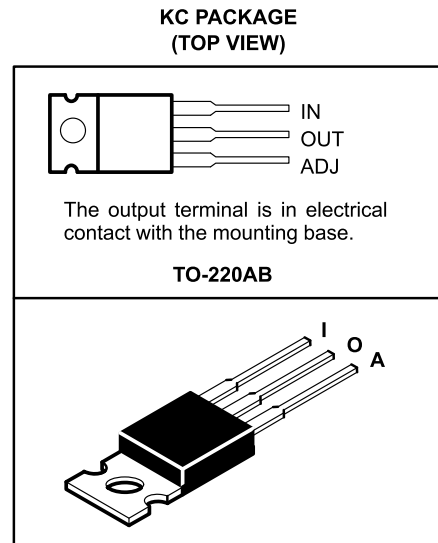
- Output Adjustable From 1.25 V to 125 V When Used With an External Resistor Divider
- 700-mA Output Current
- Full Short-Circuit, Safe-Operating-Area, and Thermal Shutdown Protection
- 0.001%/V Typical Input Voltage Regulation
- 0.15% Typical Output Voltage Regulation
- 76-dB Typical Ripple Rejection
- Standard TO-220AB Package

description

The TL783C is an adjustable three-terminal high-voltage regulator with an output range of 1.25 V to 125 V and a DMOS output transistor capable of sourcing more than 700 mA. It is designed for use in high-voltage applications where standard bipolar regulators cannot be used. Excellent performance specifications, superior to those of most bipolar regulators, are achieved through circuit design and advanced layout techniques.

As a state-of-the-art regulator, the TL783C combines standard bipolar circuitry with high-voltage double-diffused MOS transistors on one chip to yield a device capable of withstanding voltages far higher than standard bipolar integrated circuits. Because of its lack of secondary breakdown and thermal runaway characteristics usually associated with bipolar outputs, the TL783C maintains full overload protection while operating at up to 125 V from input to output. Other features of the device include current limiting, safe-operating-area (SOA) protection, and thermal shutdown. Even if ADJ is inadvertently disconnected, the protection circuitry remains functional.

Only two external resistors are required to program the output voltage. An input bypass capacitor is necessary only when the regulator is situated far from the input filter. An output capacitor, although not required, improves transient response and protection from instantaneous output short circuits. Excellent ripple rejection can be achieved without a bypass capacitor at the adjustment terminal.



AVAILABLE OPTIONS

T _J	PACKAGED DEVICE	CHIP FORM (Y)
	HEAT-SINK MOUNTED (3-PIN) (KC)	
0°C to 125°C	TL783CKC	TL783Y

PRODUCTION DATA information is current as of publication date. Products conform to specifications per the terms of Texas Instruments standard warranty. Production processing does not necessarily include testing of all parameters.

 **TEXAS
INSTRUMENTS**

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UTC LM79XX LINEAR INTEGRATED CIRCUIT

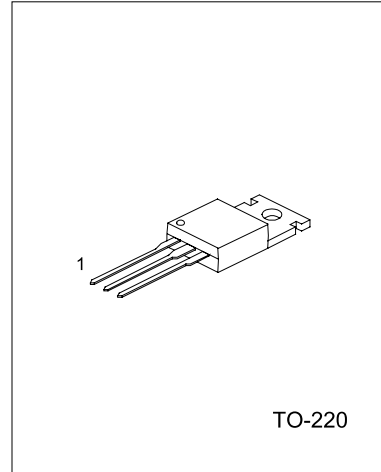
3 TERMINAL 1A NEGATIVE VOLTAGE REGULATOR

DESCRIPTION

The UTC LM79XX series of three-terminal negative regulators are available in TO-220 package and with several fixed output voltage, making them useful in a wide range of application. Each type employs internal current limiting, thermal shut-down and safe area protection, making it essentially indestructible.

FEATURES

- *Output current up to 1A
- *-5V;-6V;-8V;-12V;-15V;-18V;-24V output voltage available
- *Thermal overload protection
- *Short circuit protection



TO-220

1:GND 2:Input 3:Output

BLOCK DIAGRAM

