



## LM7805CT - LM7812CT- LM7824CT

### Positive Voltage Regulators

#### GENERAL DESCRIPTION

This series of fixed-voltage integrated-circuit voltage regulators is designed for a wide range of applications. These applications include on-card regulation for elimination of noise and distribution problems associated with single-point regulation. Each of these regulators can deliver up to 1.5A of output current. The internal current-limiting and thermal-shutdown features of these regulators essentially make them immune to overload. In addition to use as fixed-voltage regulators, these devices can be used with external components to obtain adjustable output voltages and currents, and also can be used as the power-pass element in precision regulators. Compliance to RoHS.

#### FEATURES

- 3-Terminal Regulators
- Output Current up to 1.5A
- Internal Thermal-Overload Protection
- Output Transistor Safe-Area Compensation
- With TO220 package

#### ABSOLUTE MAXIMUM RATINGS

Symbol	Ratings	Value	Unit
V <sub>I</sub>	Input Voltage DC	V <sub>o</sub> = 5 V to 18V	35
		V <sub>o</sub> = 20 V & 24V	40
I <sub>o</sub>	Output Current	Internally Limited	
P <sub>D</sub>	Power Dissipation	Internally Limited	
T <sub>OP</sub>	Operating Junction Temperature	0° to 150	°C
T <sub>STG</sub>	Storage Temperature	-55° to 150	°C

#### THERMAL DATA

Symbol	Ratings	Value	Unit
R <sub>thJC</sub>	From Junction to Case Thermal Resistance	5	°C/W
R <sub>thJA</sub>	From Junction to Free-Air Thermal Resistance	50	



## LM7805CT - LM7812CT- LM7824CT

### ELECTRICAL CHARACTERISTICS OF LM7805CT

$T_C = 25^\circ\text{C}$

Symbol	Ratings	Test Condition(s)	Min	Typ	Max	Unit
$V_O$	Output Voltage	$V_i = 20\text{ V}; I_o = 500\text{ mA}$	4.75	5	5.25	V
$\Delta V_V$	Line Regulation	$8\text{ V} \leq V_i \leq 20\text{ V}; I_o = 500\text{ mA}$	-	-	100	mV
$\Delta V_I$	Load Regulation	$V_i = 14\text{ V}; 5\text{ mA} \leq I_o \leq 1\text{ A}$	-	-	100	mV
$I_B$	Quiescent Current	$V_i = 14\text{ V}; I_o = 1\text{ A}$	-	-	8	mA
$\Delta I_{B1}$	Quiescent Current Change	$V_i = 14\text{ V}; 5\text{ mA} \leq I_o \leq 1\text{ A}$	-	-	1.43	$\mu\text{A}$
$\Delta I_{B2}$	Quiescent Current Change	$8\text{ V} \leq V_i \leq 20\text{ V}; I_o = 500\text{ mA}$	-	-	0.45	$\mu\text{A}$

### ELECTRICAL CHARACTERISTICS OF LM7812CT

$T_C = 25^\circ\text{C}$

Symbol	Ratings	Test Condition(s)	Min	Typ	Max	Unit
$V_O$	Output Voltage	$V_i = 19\text{ V}; I_o = 500\text{ mA}$	11.75	12	12.25	V
$\Delta V_V$	Line Regulation	$14.8\text{ V} \leq V_i \leq 30\text{ V}$ $I_o = 500\text{ mA}$	-	-	120	mV
$\Delta V_I$	Load Regulation	$V_i = 19\text{ V}; 5\text{ mA} \leq I_o \leq 1\text{ A}$	-	-	100	mV
$I_B$	Quiescent Current	$V_i = 19\text{ V}; I_o = 1\text{ A}$	-	-	6	mA
$\Delta I_{B1}$	Quiescent Current Change	$V_i = 19\text{ V}; 5\text{ mA} \leq I_o \leq 1\text{ A}$	-	-	0.5	$\mu\text{A}$
$\Delta I_{B2}$	Quiescent Current Change	$15\text{ V} \leq V_i \leq 30\text{ V}$ $I_o = 500\text{ mA}$	-	-	0.8	$\mu\text{A}$

### ELECTRICAL CHARACTERISTICS OF LM7824CT

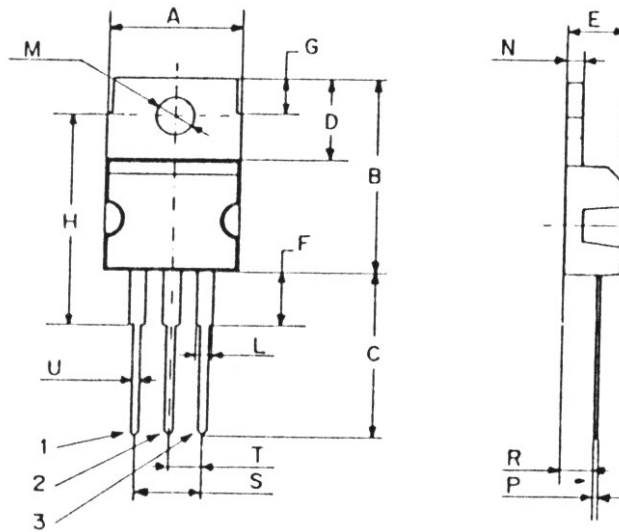
$T_C = 25^\circ\text{C}$

Symbol	Ratings	Test Condition(s)	Min	Typ	Max	Unit
$V_O$	Output Voltage	$V_i = 33\text{ V}; I_o = 1\text{ A}$	23.5	24	24.5	V
$\Delta V_V$	Line Regulation	$26.7\text{ V} \leq V_i \leq 38\text{ V}$ $I_o = 1\text{ A}$	-	-	240	mV
$\Delta V_I$	Load Regulation	$5\text{ mA} \leq I_o \leq 1.5\text{ A}$	-	-	100	mV
$I_B$	Quiescent Current		-	-	6	mA
$\Delta I_{B1}$	Quiescent Current Change	$V_i = 33\text{ V}; 5\text{ mA} \leq I_o \leq 1\text{ A}$	-	-	0.5	$\mu\text{A}$
$\Delta I_{B2}$	Quiescent Current Change	$27.3\text{ V} \leq V_i \leq 38\text{ V}; I_o = 1\text{ A}$	-	-	0.8	$\mu\text{A}$

## LM7805CT - LM7812CT- LM7824CT

### MECHANICAL DATA CASE TO-220

DIMENSIONS (mm)		
	Min.	Max.
A	9,90	10,30
B	15,65	15,90
C	13,20	13,40
D	6,45	6,65
E	4,30	4,50
F	2,70	3,15
G	2,60	3,00
H	15,75	17,15
L	1,15	1,40
M	3,50	3,70
N	-	1,37
P	0,46	0,55
R	2,50	2,70
S	4,98	5,08
T	2,49	2,54
U	0,70	0,90



Pin 1 :	Input
Pin 2 :	Ground
Pin 3 :	Output

Revised September 2012

Information furnished is believed to be accurate and reliable. However, Comset Semiconductors assumes no responsibility for the consequences of use of such information nor for any infringement of patents or other rights of third parties which may result from its use. Data are subject to change without notice. Comset Semiconductors makes no warranty, representation or guarantee regarding the suitability of its products for any particular purpose, nor does Comset Semiconductors assume any liability arising out of the application or use of any product and specifically disclaims any and all liability, including without limitation consequential or incidental damages. Comset Semiconductors' products are not authorized for use as critical components in life support devices or systems.