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 whit 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_I	Input Voltage DC	V_o = 5 V to 18V	35	V
		V_o = 20 V & 24V	40	
I_o	Output Current		Internally Limited	
P_D	Power Dissipation		Internally Limited	
T_{OP}	Operating Junction Temperature		0°to 150	℃
T_{STG}	Storage Temperature		-55°to 150	℃

THERMAL DATA

Symbol	Ratings	Value	Unit
R_{thJC}	From Junction to Case Thermal Resistance	5	℃/W
R_{thJA}	From Junction to Free-Air Thermal Resistance	50	

LM7805CT - LM7812CT- LM7824CT

ELECTRICAL CHARACTERISTICS OF LM7805CT

T_C = 25℃

Symbol	Ratings	Test Condition(s)	Min	Typ	Max	Unit
V_O	Output Voltage	V_i = 20 V; I_O = 500 mA	4.75	5	5.25	V
ΔV_V	Line Regulation	8 V ≤ V_i ≤ 20 V; I_O = 500 mA	-	-	100	mV
ΔV_I	Load Regulation	V_i = 14 V; 5 mA ≤ I_O ≤ 1 A	-	-	100	mV
I_B	Quiescent Current	V_i- = 14 V; I_O = 1 A	-	-	8	mA
ΔI_{B1}	Quiescent Current Change	V_i = 14 V; 5 mA ≤ I_O ≤ 1 A	-	-	1.43	µA
ΔI_{B2}	Quiescent Current Change	8 V ≤ V_i ≤ 20 V; I_O = 500 mA	-	-	0.45	µA

ELECTRICAL CHARACTERISTICS OF LM7812CT

T_C = 25℃

Symbol	Ratings	Test Condition(s)	Min	Typ	Max	Unit
V_O	Output Voltage	V_i = 19 V; I_O = 500 mA	11.75	12	12.25	V
ΔV_V	Line Regulation	14.8 V ≤ V_i ≤ 30 V I_O = 500 mA	-	-	120	mV
ΔV_I	Load Regulation	V_i = 19 V; 5 mA ≤ I_O ≤ 1 A	-	-	100	mV
I_B	Quiescent Current	V_i- = 19 V; I_O = 1 A	-	-	6	mA
ΔI_{B1}	Quiescent Current Change	V_i = 19 V; 5 mA ≤ I_O ≤ 1 A	-	-	0.5	µA
ΔI_{B2}	Quiescent Current Change	15 V ≤ V_i ≤ 30 V I_O = 500 mA	-	-	0.8	µA

ELECTRICAL CHARACTERISTICS OF LM7824CT

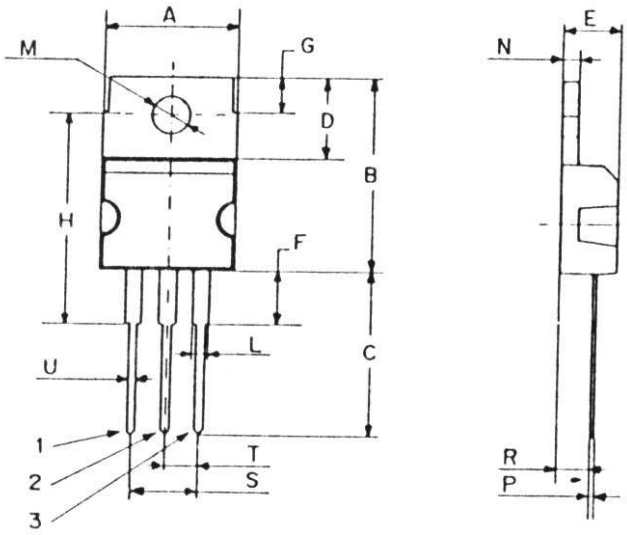
T_C = 25℃

Symbol	Ratings	Test Condition(s)	Min	Typ	Max	Unit
V_O	Output Voltage	V_i = 33 V; I_O = 1 A	23..5	24	24.5	V
ΔV_V	Line Regulation	26.7 V ≤ V_i ≤ 38 V I_O = 1 A	-	-	240	mV
ΔV_I	Load Regulation	5 mA ≤ I_O ≤ 1.5 A	-	-	100	mV
I_B	Quiescent Current		-	-	6	mA
ΔI_{B1}	Quiescent Current Change	V_i = 33 V; 5 mA ≤ I_O ≤ 1 A	-	-	0.5	µA
ΔI_{B2}	Quiescent Current Change	27.3 V ≤ V_i ≤ 38 V; I_O = 1 A	-	-	0.8	µA

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