

### 3-TERMINAL POSITIVE VOLTAGE REGULATOR

CL7824DT



Pin: 1 Input  
2 Ground  
3 Output

TO-252 (DPAK)  
Plastic Package

Fixed Voltage Monolithic Integrated Circuit Voltage Regulators is Designed for a Wide Range of Applications

#### ABSOLUTE MAXIMUM RATINGS

DESCRIPTION	SYMBOL	VALUE	UNIT
Input Voltage	$V_{IN}$	40	V
Power Dissipation at $T_a=25^\circ\text{C}$	$P_D$	2.0	W
Power Dissipation at $T_c=25^\circ\text{C}$	$P_D$	15	W
Operating Free Air, Case or Virtual Junction Temperature Range	$T_j$	0 to 150	$^\circ\text{C}$
Storage Temperature Range	$T_{stg}$	- 65 to +150	$^\circ\text{C}$
Lead Temperature 1.6mm (1/16 inch) from Case for 10 seconds	$T_L$	260	$^\circ\text{C}$

#### Recommended Operating Conditions

DESCRIPTION	SYMBOL	MIN	TYP	MAX	UNIT
Input Voltage	$V_I$	27		38	V
Output Current	$I_O$			1.5	A
Operating Junction Temperature	$T_j$	0		125	$^\circ\text{C}$

#### ELECTRICAL CHARACTERISTICS

(At Specified Virtual Junction Temperature,  $V_I=33\text{V}$ ,  $I_O=500\text{mA}$ , (unless specified otherwise))

DESCRIPTION	SYMBOL	*TEST CONDITION	MIN	TYP	MAX	UNIT
Output Voltage	$V_O$	$25^\circ\text{C}$	23		25	V
		$I_O=5\text{mA to } 1\text{A}$ , $0^\circ\text{C to } 125^\circ\text{C}$ $V_I=27\text{V to } 38\text{V}$ , $P \leq 15\text{W}$ , $0^\circ\text{C to } 125^\circ\text{C}$	22.8		25.2	V
Line Regulation	$R_{BGIN}$	$V_I=27\text{V to } 38\text{V}$ , $25^\circ\text{C}$			480	mV
		$V_I=30\text{ to } 36\text{V}$ , $25^\circ\text{C}$			240	mV
Ripple Rejection	$R_{RR}$	$V_I=28\text{V to } 38\text{V}$ , $f=120\text{Hz}$ , $0^\circ\text{ to } 125^\circ\text{C}$	50			dB
Load Regulation	$R_{BGL}$	$I_O=5\text{mA to } 1.5\text{A}$ , $25^\circ\text{C}$			480	mV
		$I_O=250\text{mA to } 750\text{mA}$ , $25^\circ\text{C}$			240	mV
Output Resistance	$r_O$	$f=1\text{KHz}$ , $0^\circ\text{C to } 125^\circ\text{C}$		0.028		$\Omega$
Temperature Coefficient of Output Voltage	$\Delta V_O/\Delta T$	$I_O=5\text{mA}$ , $0^\circ\text{C to } 125^\circ\text{C}$		- 1.5		$\text{mV}/^\circ\text{C}$
Output Noise Voltage	$V_{NO}$	$f=10\text{Hz to } 100\text{KHz}$ , $25^\circ\text{C}$		170		$\mu\text{V}$
Dropout Voltage	$V_{DIF}(\text{min})$	$I_O=1\text{A}$ , $25^\circ\text{C}$		2.0		V

\*Pulse testing techniques are used to maintain the junction temperature as close to the ambient temperature as possible. Thermal effects must be taken into account separately.

\*\*This specification applies only for dc power dissipation permitted by absolute maximum rating.

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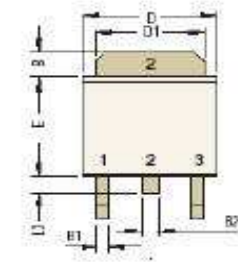
DESCRIPTION	SYMBOL	*TEST CONDITION	MIN	TYP	MAX	UNIT
Quiescent Current	$I_Q$	25°C			8.0	mA
Quiescent Current Change	$\Delta I_{QIN}$	$V_I=27V$ to 38V, 0°C to 125°C			1.0	mA
	$\Delta I_{QL}$	$I_O=5mA$ to 1A, 0°C to 125°C			0.5	mA
Short Circuit Output Current	$I_{OS}$	25°C		150		mA
Peak Output Current	$I_{Omax}$	25°C		2.1		A

\*Pulse testing techniques are used to maintain the junction temperature as close to the ambient temperature as possible. Thermal effects must be taken into account separately.

MARKING	CL 7824DT XY MX
XY= Date Code	

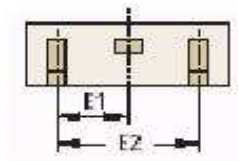
CL7824DT Rev120606E

Package TO-252 (DPAK)



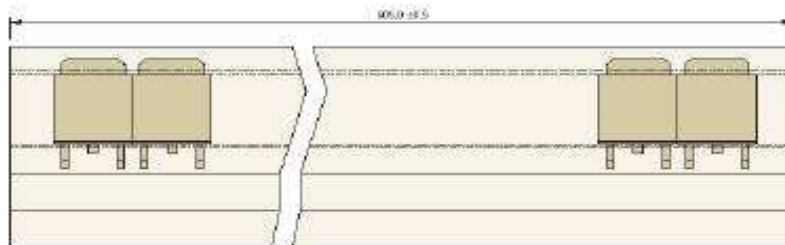
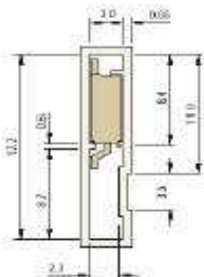
DIM	Min	max
A	2.20	2.40
B	1.30	1.50
B1	0.55	0.65
B2	0.75	0.85
B3	0.46	0.58
C	0.46	0.58
D	6.40	6.60
D1	5.20	5.40
E	5.40	5.80
E1	2.25	2.35
E2	4.50	4.70
L1	9.25	9.75
L2	0.50	
L3	0.90	1.10

All Dimensions are in mm

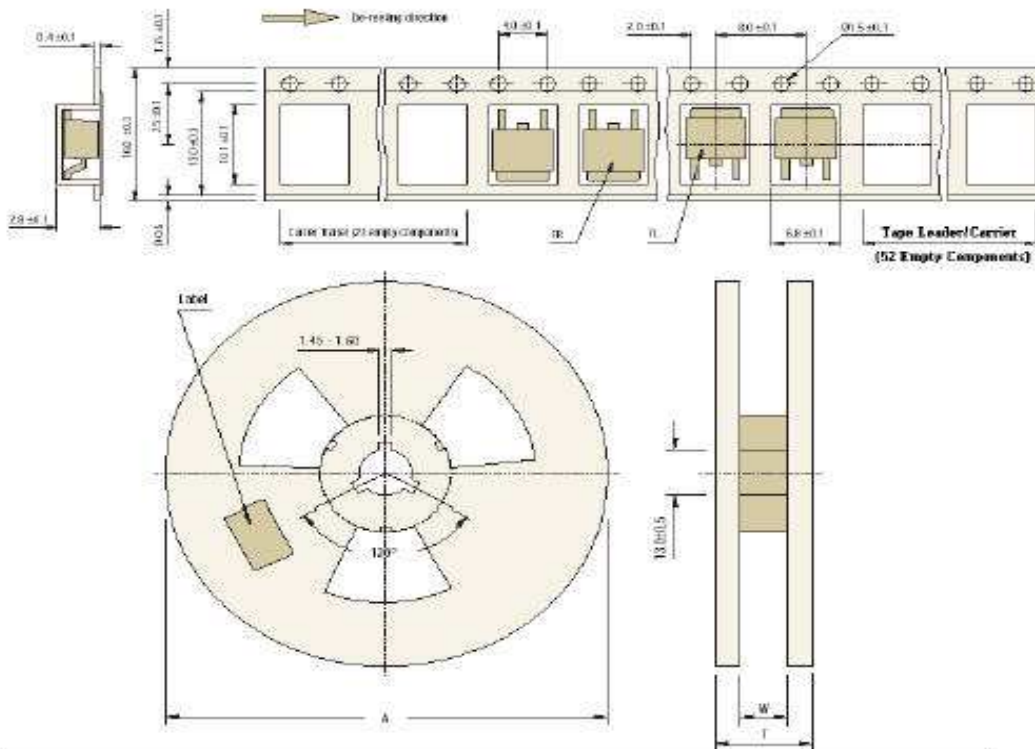


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TO-252 (DPAK) Tube Packing



TO-252 (DPAK) Tape and Reel Specification



Reel Specifications					
Package	Tape Width	Reel Dia. A - Max	Devices Per Reel and MOQ	Inside Thickness W	Reel Thickness T - max
TO-252 (DPAK)	16	330	2,500	17.5 ± 1.5	24.0

All Dimensions are in mm

Packaging Information

Package/ Case Type	Packaging Type	Std. Packing Qty
TO-252 (DPAK)	Tube	1,600
TO-252 (DPAK)	T&R	2,500

T & R: Tape and Reel  
Tube : 60 pcs/Tube

**Component Disposal Instructions**

1. CDIL Semiconductor Devices are RoHS compliant, customers are requested to please dispose as per prevailing Environmental Legislation of their Country.
2. In Europe, please dispose as per EU Directive 2002/96/EC on Waste Electrical and Electronic Equipment (WEEE).

**Disclaimer**

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