

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))

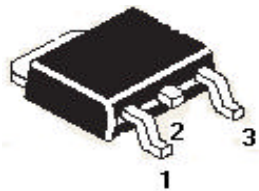
DESCRIPTION	SYMBOL	*TEST CONDITION	MIN	TYP	MAX	UNIT
Output Voltage	V_O	25°C	23		25	V
		$I_O=5\text{mA to } 1\text{A}$, $0^\circ\text{C to } 125^\circ\text{C}$ $V_I=27\text{V to } 38\text{V}$, $P \leq 15\text{W}$, $0^\circ\text{C to } 125^\circ\text{C}$	22.8		25.2	V
Line Regulation	R_{BGIN}	$V_I=27\text{V to } 38\text{V}$, 25°C			480	mV
		$V_I=30\text{ to } 36\text{V}$, 25°C			240	mV
Ripple Rejection	R_R	$V_I=28\text{V to } 38\text{V}$, $f=120\text{Hz}$, $0^\circ\text{ to } 125^\circ\text{C}$	50			dB
Load Regulation	R_{BGL}	$I_O=5\text{mA to } 1.5\text{A}$, 25°C			480	mV
		$I_O=250\text{mA to } 750\text{mA}$, 25°C			240	mV
Output Resistance	r_O	$f=1\text{KHz}$, $0^\circ\text{C to } 125^\circ\text{C}$		0.028		Ω
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°C		170		μV
Dropout Voltage	$V_{DIF}(\text{min})$	$I_O=1\text{A}$, 25°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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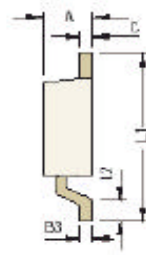
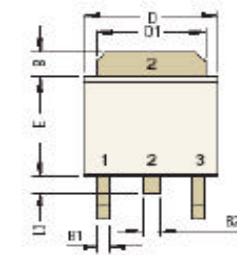
DESCRIPTION	SYMBOL	*TEST CONDITION	MIN	TYP	MAX	UNIT
Quiescent Current	I_Q	25°C			8.0	mA
Quiescent Current Change	ΔI_{QIN}	$V_I=27V$ to $38V$, 0°C to 125°C			1.0	mA
	ΔI_{QL}	$I_O=5mA$ to $1A$, 0°C to 125°C			0.5	mA
Short Circuit Output Current	I_{OS}	25°C		150		mA
Peak Output Current	I_{Omax}	25°C		2.1		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	

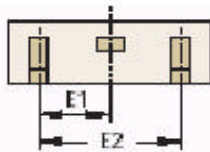
CL7824DT Rev120606E

Package TO-252 (DPAK)



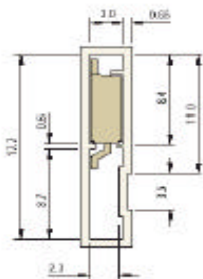
DIM	Min	max
A	2.20	2.40
B	1.30	1.50
B1	0.55	0.65
B2	0.75	0.85
B3	0.46	0.58
C	0.46	0.58
D	6.40	6.60
D1	5.20	5.40
E	5.40	5.60
E1	2.25	2.35
E2	4.50	4.70
L1	9.25	9.75
L2	0.50	
L3	0.90	1.10

All Dimensions are in mm



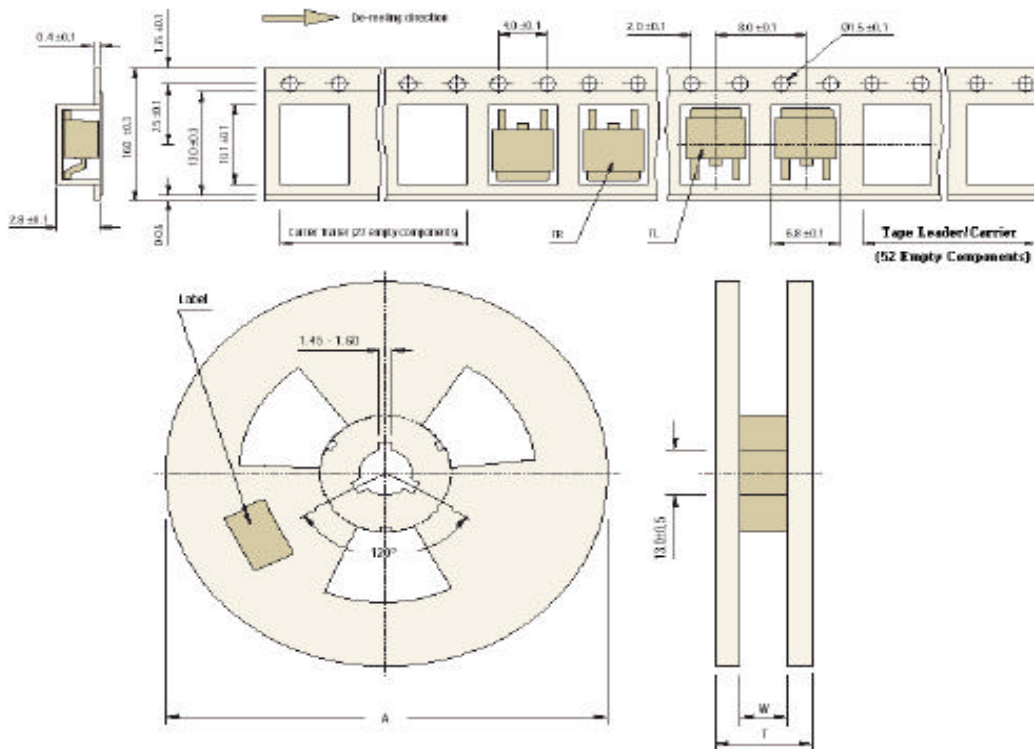
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TO-252 (DPAK) Tube Packing



Qty: 40 pcs/Tube

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 : 80 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

The product information and the selection guides facilitate selection of the CDIL's Semiconductor Device(s) best suited for application in your product(s) as per your requirement. It is recommended that you completely review our Data Sheet(s) so as to confirm that the Device(s) meet functionality parameters for your application. The information furnished in the Data Sheet and on the CDIL Web Site/CD are believed to be accurate and reliable. CDIL however, does not assume responsibility for inaccuracies or incomplete information. Furthermore, CDIL does not assume liability whatsoever, arising out of the application or use of any CDIL product; neither does it convey any license under its patent rights nor rights of others. These products are not designed for use in life saving/support appliances or systems. CDIL customers selling these products (either as individual Semiconductor Devices or incorporated in their end products), in any life saving/support appliances or systems or applications do so at their own risk and CDIL will not be responsible for any damages resulting from such sale(s).

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