

**Product specification** 

LM7824J

## **3-Terminal 1A Positive Voltage Regulator**

## GENERAL DESCRIPTION

The LM7824 series of three terminal positive regulators are available in the TO-220 package and with several fixed output voltages, making them useful in a wide range of applications. Each type employs internal current limiting, thermal shut down and safe operating area protection, making it essentially indestructible. If adequate heat sinking is provided, they can deliver over 1A output current. Although designed primarily as fixed voltage regulators, these devices can be used with external components to obtain adjustable voltages and currents.

## ABSOLUTE MAXIMUM RATINGS ( Ta = 25 $^{\circ}$ C)

Parameter	Symbol	Тур	Unit
Input Voltage	Vı	40	V
Output Voltage	Vo	24.0	V
Peak Current	I <sub>PK</sub>	2.2	A
Operating Temperature Range	T <sub>OPR</sub>	0~125	°C
Storage Temperature Rang	T <sub>STG</sub>	-65~150	°C

## ELECTRICAL CHARACTERISTICS (Ta = 25 °C)

(Refer to test circuit, Io = 500mA, Vi = 33V, Ci= 0.33uF, Co=0.1uF unless otherwise specified)

Parameter	Symbol	Test Conditions	Min	Тур	Max	Unit	
Output Voltage	Vo	V <sub>1</sub> = 14.5V to 30V	23.28	24.0	24.72	V	
Line Regulation (Note1)	Regline	$V_1 = 27V \text{ to } 38V$		17	480	mV	
	Regime	$V_1 = 30V \text{ to } 36V$		6.0	240		
Load Regulation (Note1)	Regload	I <sub>o</sub> = 5.0mA to1.5A		15	480	- mV	
	Tegload	I <sub>o</sub> =250mA to 750mA	_	5	240		
Quiescent Current	I <sub>Q</sub>	T <sub>J</sub> =+25 °C		5.2	8	mA	
Ripple Rejection	RR	$f = 120Hz, V_0 = 28V \text{ to } 38V$	50	67		dB	
Dropout Voltage	V <sub>Drop</sub>	I <sub>o</sub> = 1A, T <sub>J</sub> =+25 °C	_	2		V	
Output Resistance	r <sub>o</sub>	f = 1KHz	_	0.028		Ω	
Short Circuit Current	I <sub>sc</sub>	V <sub>1</sub> = 35V, T <sub>A</sub> =+25 °C	_	230		mA	
Peak Current	I <sub>PK</sub>	T <sub>J</sub> =+25 °C		2.2		A	