

TO-252/TO-251 Plastic-Encapsulate Voltage Regulators

L7824 Three-terminal positive voltage regulator

FEATURES:

※ Maximum output current

IOM: 1.5A

※ Output voltage

VO: 24V

※ Continuous total dissipation

PD: 1.25W

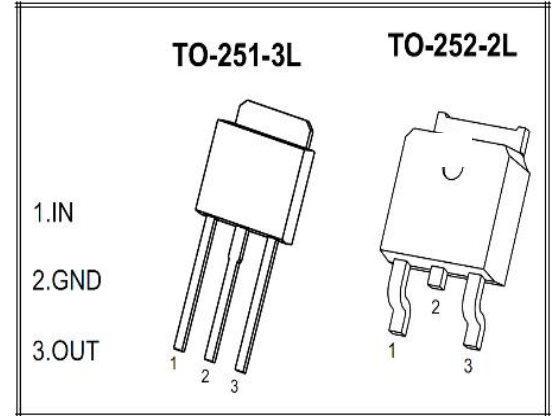
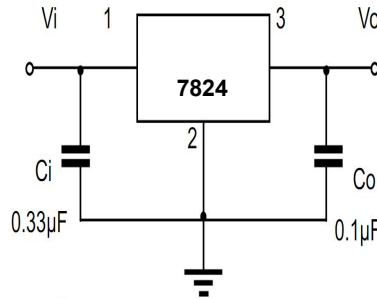
MARKING:

7824

D / U ****

logo (D→252) / (U→251) ****→Date

TYPICAL APPLICATION:



Absolute Maximum ratings (Operating temperature range applies unless otherwise specified)

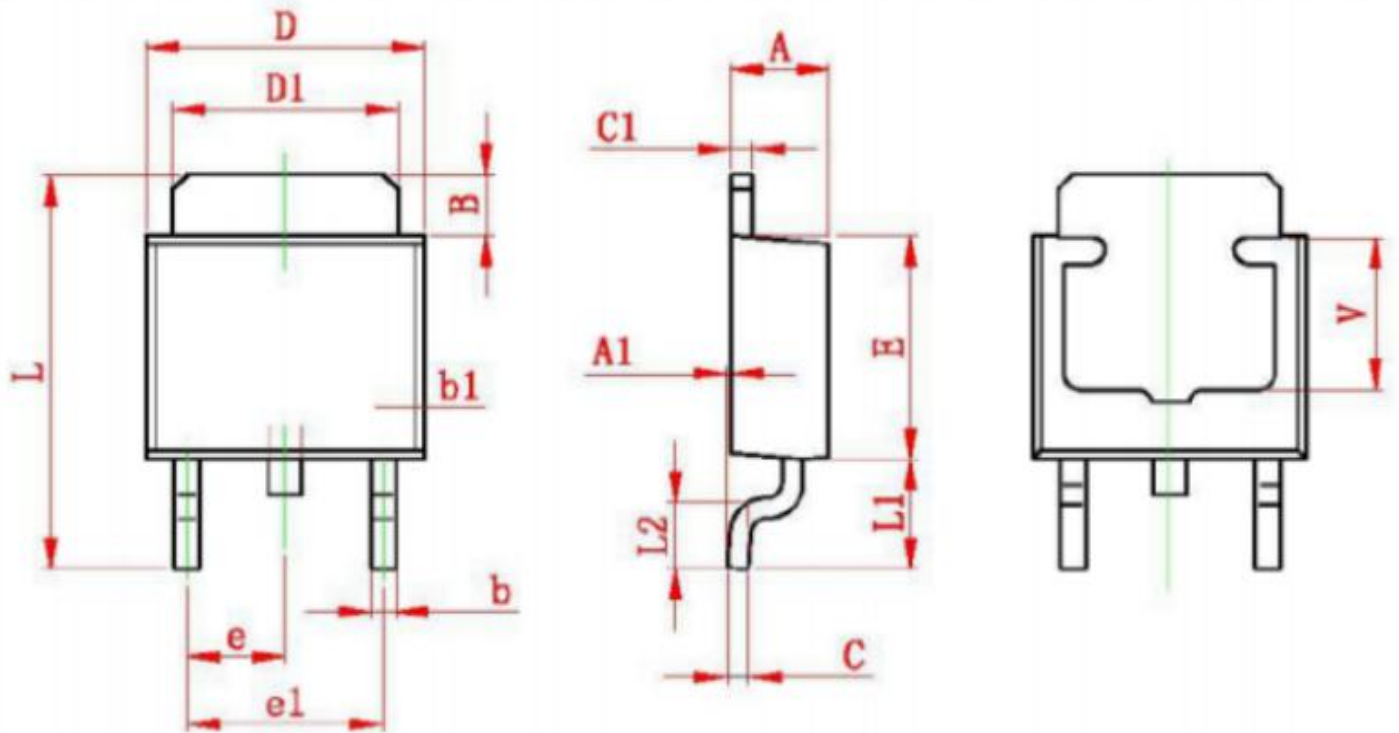
Parameter	Symbol	Value	Unit
Input Voltage	V_i	40	V
Thermal Resistance From Junction to air	$R_{\theta JA}$	80	$^{\circ}C/W$
Operating Junction Temperature Range	TOPR	-25~+125	$^{\circ}C$
Storage Temperature Range	TSTG	-55~+150	$^{\circ}C$

Electrical Characteristics At Specified Virtual Junction Temperature
($V_i=33V$, $I_o=350mA$, $C_i=0.33\mu F$, $C_o=0.1\mu F$. Unless Otherwise Specified)

Parameter	Symbol	Test Condition	Min	Typ	Max	Unit
Output voltage	V_o	25 $^{\circ}C$	23.04	24	24.96	V
		27.5V $\leq V_i \leq 38V$, $I_o=5mA-1A$	-25~+125	22.8	24	25.2
Load Regulation	ΔV_o	$I_o=5mA-1.5A$, $V_i=33V$	25 $^{\circ}C$	45	480	mV
		$I_o=250mA-750mA$, $V_i=33V$	25 $^{\circ}C$	30	240	mV
Line Regulation	ΔV_o	27.5V $\leq V_i \leq 38V$, $I_o=250mA$	25 $^{\circ}C$	25	480	mV
		28V $\leq V_i \leq 38V$, $I_o=250mA$	25 $^{\circ}C$	13	240	mV
Quiescent Current	I_q	25 $^{\circ}C$		4.8	8	mA
Quiescent Current Change	ΔI_q	27.5V $\leq V_i \leq 38V$, $I_o=250mA$	-25~+125		1	mA
	ΔI_q	5mA $\leq I_o \leq 1A$, $V_i=33V$	-25~+125		0.5	mA
Output Noise Voltage	V_N	10Hz $\leq f \leq 100KHz$	25 $^{\circ}C$	170	200	$\mu V/V_o$
Output voltage drift	$\Delta V_o / \Delta T$	$I_o=5mA$	-25-125 $^{\circ}C$	-1		mV/ $^{\circ}C$
Ripple Rejection	R_r	27.5V $\leq V_i \leq 38V$, $f=120Hz$, $I_o=300mA$	-25~+125	55	80	dB
Dropout Voltage	V_d	$I_o=1A$	25 $^{\circ}C$	2	2.5	V
Output resistance	R_o	$f=1KHz$	25 $^{\circ}C$	20		m Ω
Short Circuit Current	I_{sc}	$V_i=33V$	25 $^{\circ}C$	300		mA
Peak Current	I_{PK}	25 $^{\circ}C$		2.2		A

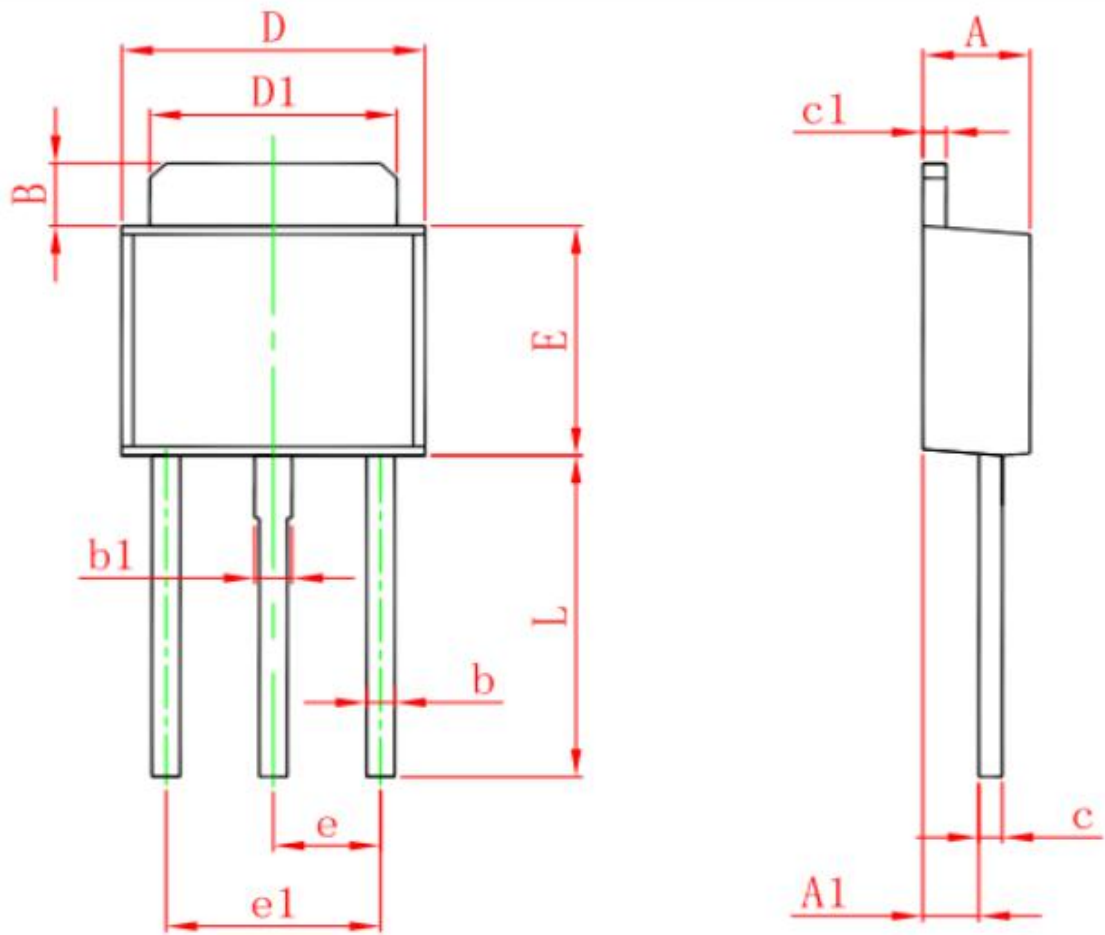
Note : Bypass Capacitors are Recommended For Optimum Stability and Transient Response and Should be located as Close as Possible to the Regulators

Package Dimensions:



Symbol	Dimensions In Millimeters		Dimensions In Inches	
	Min	Max	Min	Max
A	2.200	2.400	0.087	0.094
A1	0.000	0.127	0.000	0.005
B	1.350	1.650	0.053	0.065
b	0.500	0.700	0.020	0.028
b1	0.700	0.900	0.028	0.035
c	0.430	0.580	0.017	0.023
c1	0.430	0.580	0.017	0.023
D	6.350	6.650	0.250	0.262
D1	5.200	5.400	0.205	0.213
E	5.400	5.700	0.213	0.224
e	2.300 TYP		0.091 TYP	
e1	4.500	4.700	0.177	0.185
L	9.500	9.900	0.374	0.390
L1	2.550	2.900	0.100	0.114
L2	1.400	1.780	0.055	0.070
V	3.80 REF		0.150 REF	

Package Dimensions:



Symbol	Dimensions In Millimeters		Dimensions In Inches	
	Min.	Max.	Min.	Max.
A	2.200	2.400	0.087	0.094
A1	1.050	1.350	0.042	0.054
B	1.350	1.650	0.053	0.065
b	0.500	0.700	0.020	0.028
b1	0.700	0.900	0.028	0.035
c	0.430	0.580	0.017	0.023
c1	0.430	0.580	0.017	0.023
D	6.350	6.650	0.250	0.262
D1	5.200	5.400	0.205	0.213
E	5.400	5.700	0.213	0.224
e	2.300 TYP.		0.091 TYP.	
e1	4.500	4.700	0.177	0.185
L	7.500	7.900	0.295	0.311