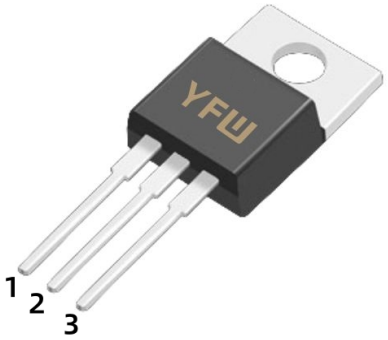
3-Terminal 1.5 A Positive Voltage Regulator



1. Input 2. GND 3. Output

TO-220AB

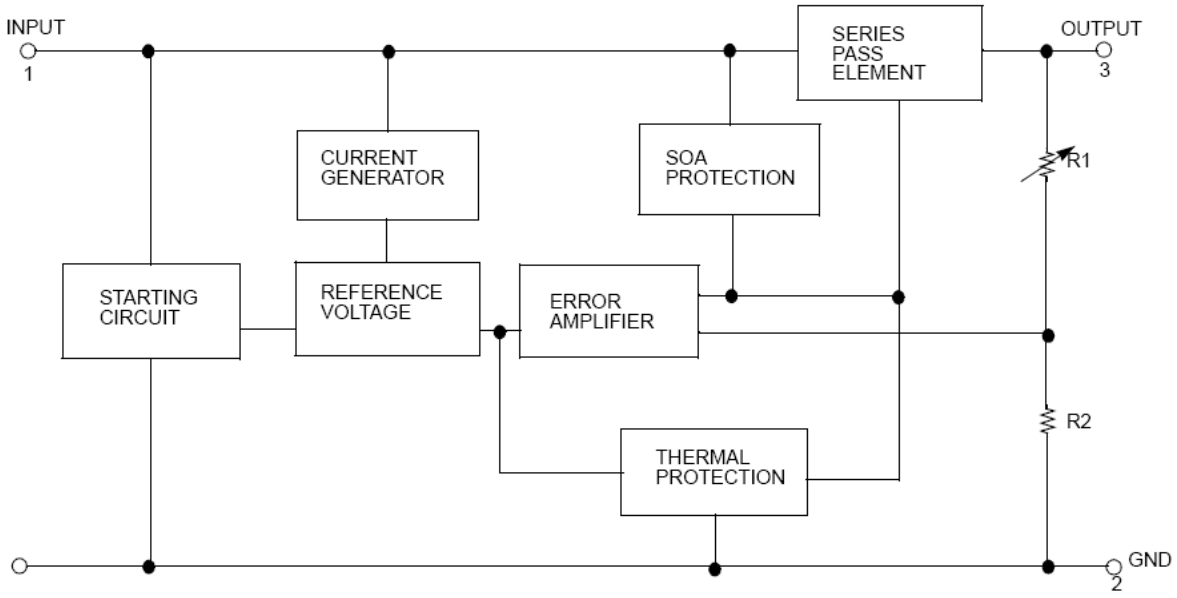
Description

The 7815 three-terminal positive regulators are available in the TO-220AB package with 24V fixed output voltages making it useful in a wide range of applications.

Features

- Output Current up to 1.5A
- Output Voltages of 24V
- Thermal Overload Protection Short Circuit Protection
- Output Transistor Safe Operating area (SOA)Protection

Internal Block Digram



Absolute Maximum Ratings

Parameter	Symbol	Value	Unit
Input Voltage	V_{IN}	40	V
Output Current	I_{OUT}	1.5	A
Thermal Resistance Junction-Case	$R_{\theta JC}$	5	°C/W
Thermal Resistance Junction-Air (Ta = +25°C)	$R_{\theta JA}$	65	°C/W
Operating Junction Temperature Range	T_{OPR}	0～150	°C
Storage Temperature Range	T_{STG}	-55～+150	°C

Electrical Characteristics

(Refer to the test circuits, 0 < T_j < +125°C, I_O=0.75A, V_I=33V, unless otherwise specified, C_I = 0.33μF, C_O=0.1μF)

Parameter	Symbol	Conditions		Min	Typ	Max	Unit
Output Voltage	V_O	T_j=25°C, I_O= 5mA～1A		23	24	25	V
		V_I=28V～38V, I_O= 5mA～1A, P_D≤15W		22.8	24	25.2	V
Line Regulation(Note)	ΔV_O	T_j=25°C I_O= 1.0A	V_I=27V～38V			240	mV
			V_I=30V~36V			120	
Load Regulation(Note)	ΔV_O	T_j=25°C	I_O= 5mA～1.5A			240	mV
			I_O= 0.25A～0.75A			120	
Quiescent Current	I_Q	T_j=25°C				6.0	mA
Quiescent Current Change	ΔI_Q	V_I=28V～38V				0.8	mA
		I_O=5mA～1.5A				0.5	
Output Noise Voltage	V_N	f=10HZ～100KHZ			40		μV/V_O
Output Voltage Drift	$\Delta V / \Delta T$	I_O = 5mA			3		mV/°C
Ripple Rejection	RR	V_I = 28V～ 38V, f = 120Hz			70		dB
Output resistance	R_O	f=1KHz			28		mΩ
Short Circuit Current	I_{SC}	V_I= 35V, T_j =25°C			0.75		A
Peak Current	I_{PK}	T_j =25°C			2.2		A
Dropout Voltage	V_D	I_O = 1A , T_j =25°C			2		V

Notes:

Load and line regulation are specified at constant junction temperature. Change in Vo due to heating effects must be taken into account separately. Pulse testing with low duty is used.

Typical Applications

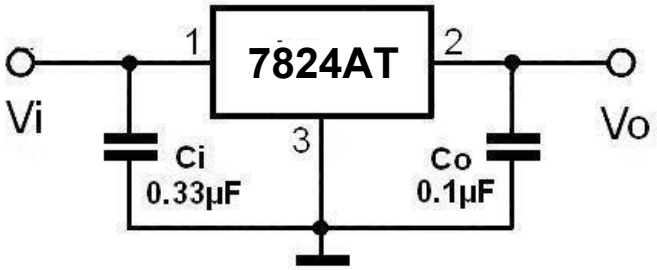


Figure 1. DC Parameters

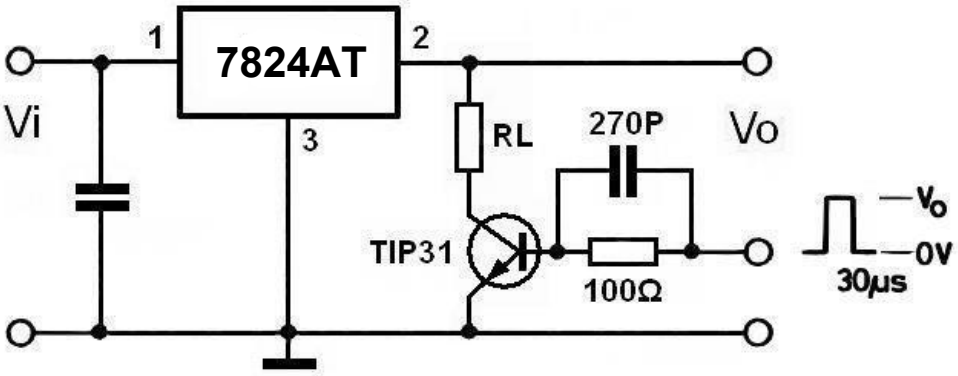


Figure 2. Load Regulation

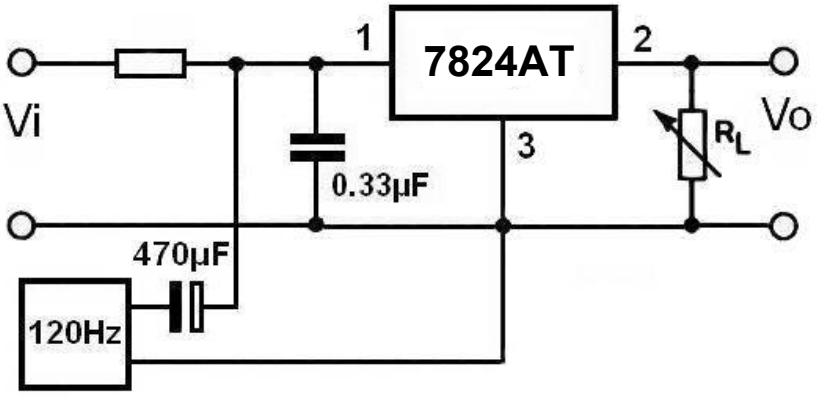
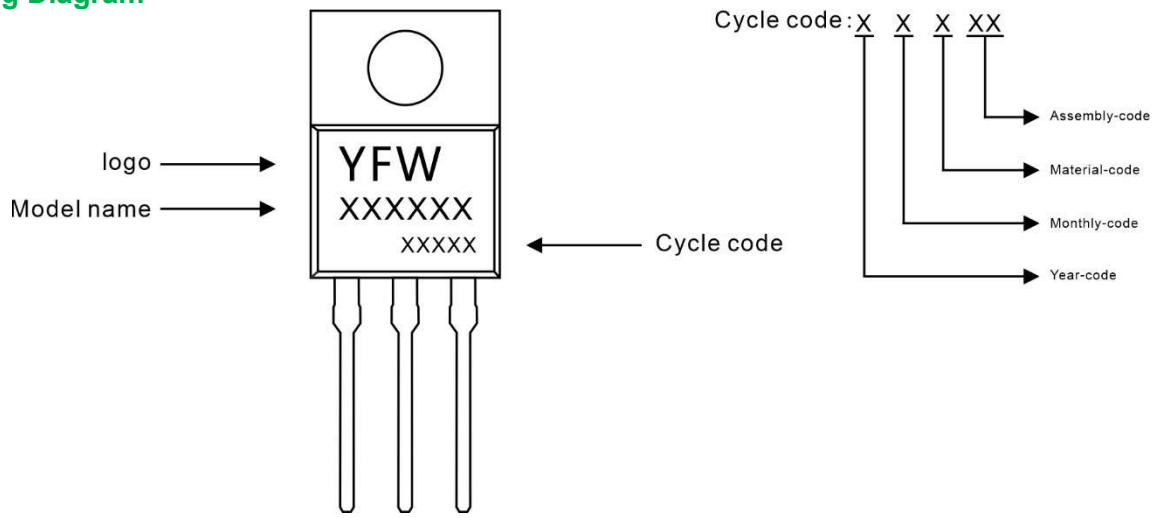


Figure 3. Ripple Rejection

Marking Diagram

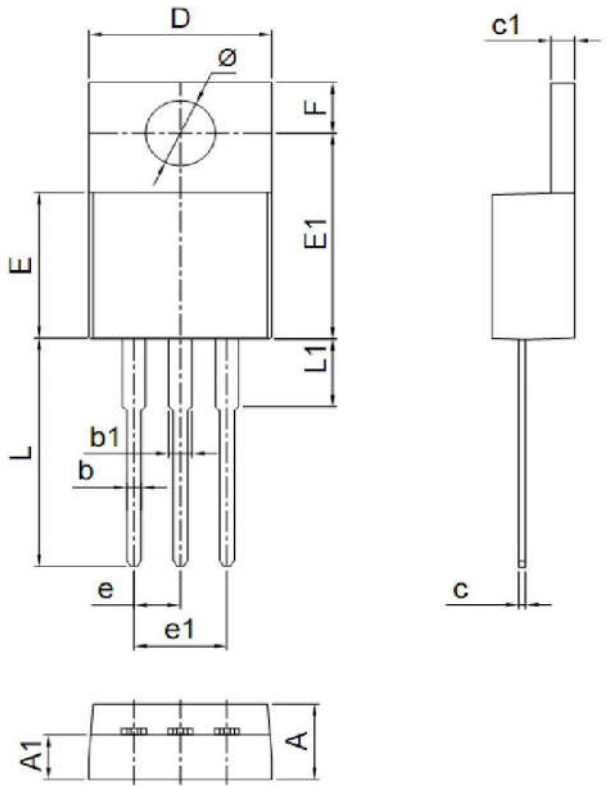


Ordering information

Model name	Package	Unit Weight	Base Quantity	Packing Quantity
7824AT	TO-220AB	0.07oz(1.96g)	50pcs/tube	1000PCS/Box 5000PCS/Carton

Package Dimensions

TO-220AB



Symbol	Millimeter		Inches	
	Min.	Max.	Min.	Max.
A	4.30	4.70	0.169	0.185
A1	2.52	2.82	0.099	0.111
b	0.71	0.91	0.028	0.036
b1	1.17	1.37	0.046	0.054
c	0.30	0.50	0.012	0.020
c1	1.17	1.37	0.046	0.054
D	9.90	10.20	0.390	0.402
E	8.50	8.90	0.335	0.350
E1	12.00	12.50	0.472	0.492
e	2.44	2.64	0.096	0.104
e1	4.88	5.28	0.192	0.208
F	2.60	2.80	0.102	0.110
L	13.20	13.80	0.520	0.543
L1	3.80	4.20	0.150	0.165
Φ	3.60	3.96	0.142	0.156

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