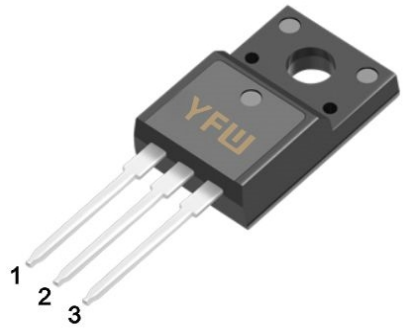
3-Terminal 1.0A Positive Voltage Regulator



1. Input 2. GND 3. Output

TO-220F

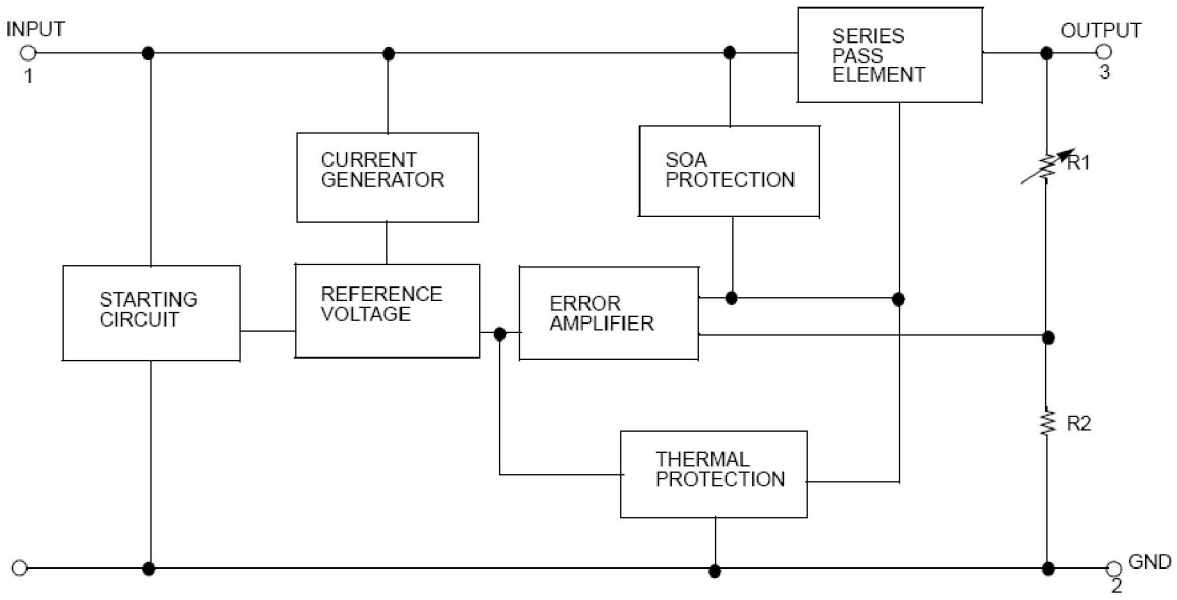
Description

The 78M24 3-terminal positive regulators are available in the TO-220F package with several fixed output voltages making it useful in a wide range of applications.

Features

- Output Current up to 1.0A
- Output Voltages of 24V
- Thermal Overload Protection Short Circuit Protection
- Output Transistor Safe Operating area (SOA)Protection

Internal Block Digram



Absolute Maximum Rating

Parameter	Symbol	Value	Unit
Input Voltage	V_{IN}	40	V
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}	-20～+150	°C
Storage Temperature Range	T_{STG}	-55～+150	°C

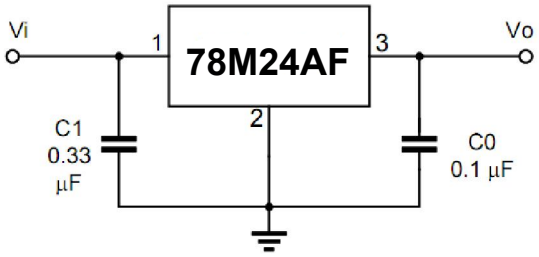
Electrical Characteristics

(Refer to the test circuits, 0 < T_J < +125°C, I_O= 0.5A, 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～1.0A	23.04	24.0	24.96	V
		V_I =27V～38V, I_O= 5mA～1.0A, P_D≤15W	22.80	24.0	25.20	V
Line Regulation(Note)	ΔV_O	V_I = 27V～38V, T_j =25°C			240	mV
		V_I = 27V～38V , I_O = 1A, T_j =25°C			240	
Load Regulation(Note)	ΔV_O	T_j =25°C, I_O= 5mA～1.0A			240	mV
		T_j =25°C, I_O= 0.25A～0.75A			120	
Quiescent Current	I_Q	T_j =25°C			8.0	mA
Quiescent Current Change	ΔI_Q	V_I = 28V～38V			1.0	mA
		I_O=5mA～1.0A			0.5	
Output Noise Voltage	V_N	f =10HZ～100KHZ		170		μV
Output Voltage Drift	$\Delta V / \Delta T$	I_O = 5mA		-2.8		mV/°C
Ripple Rejection	RR	V_I = 28V～38V, f = 120Hz, T_j =25°C		66		dB
Short Circuit Current	I_{SC}	V_I= 35V, T_j =25°C		250		mA
Peak Current	I_{PK}	T_j =25°C		1.6		A
Dropout Voltage	V_D	T_j =25°C		2.0		V

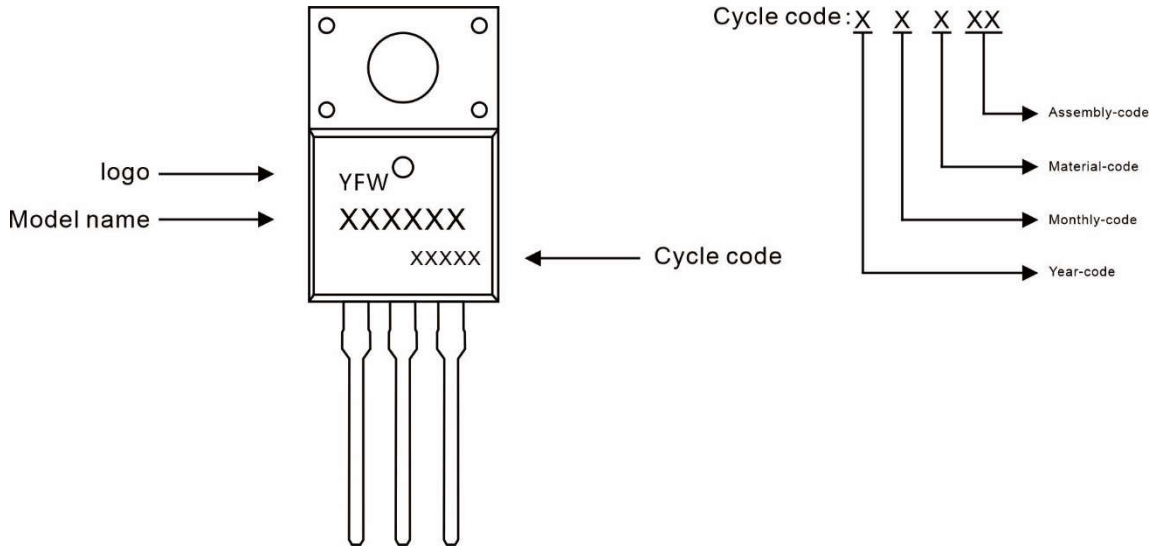
Notes: Load and line regulation are specified at constant junction temperature. Change in Vo due to heating effects must be taken into account separately. Pulse testing with low duty is used.

Applications Circuit



Note : Bypass capacitors are recommended for optimum stability and transient response and

Marking Diagram

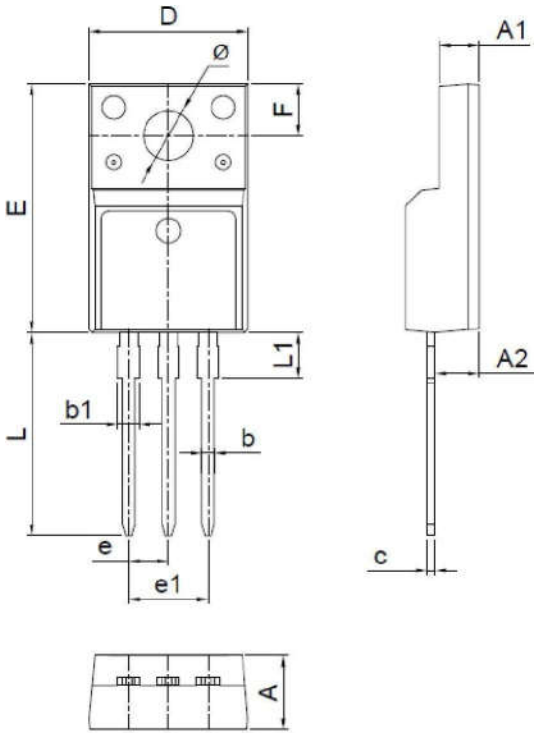


Ordering information

Model name	Package	Unit Weight	Base Quantity	Packing Quantity
78M24AF	TO-220F	0.06oz(1.74g)	50pcs/tube	1000PCS/Box 5000PCS/Carton

Package Dimensions

TO-220F



Symbol	Millimeter		Inches	
	Min.	Max.	Min.	Max.
A	4.50	4.90	0.177	0.193
A1	2.34	2.74	0.092	0.108
A2	2.66	2.86	0.105	0.113
b	0.75	0.85	0.030	0.033
b1	1.24	1.44	0.049	0.057
c	0.40	0.60	0.016	0.024
D	10.00	10.32	0.394	0.406
E	15.75	16.05	0.620	0.632
e	2.44	2.64	0.096	0.104
e1	4.88	5.28	0.192	0.208
F	3.10	3.5	0.122	0.138
L	13.50	13.90	0.531	0.547
L1	2.90	3.30	0.114	0.130
Φ	3.10	3.30	0.122	0.130

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