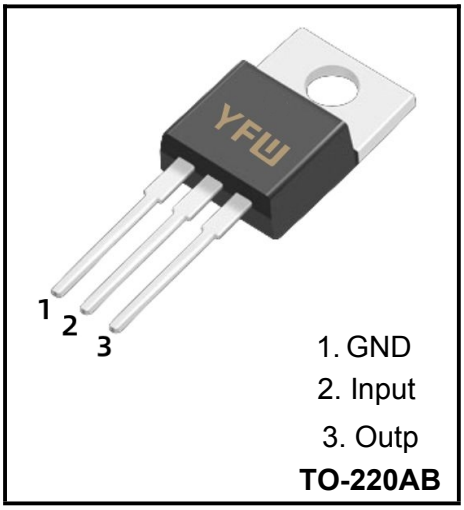
3-Terminal 1.5A Negative Voltage Regulator



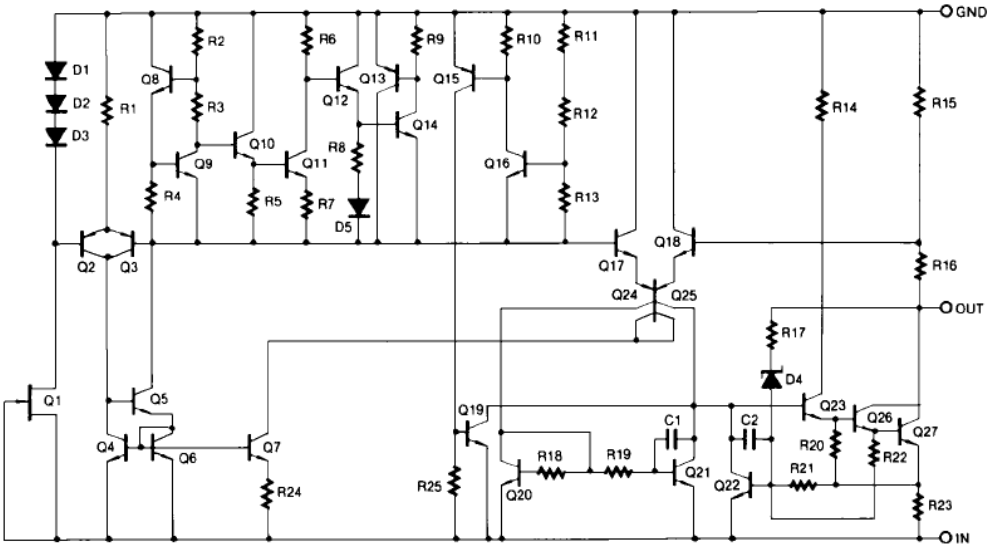
Features

- No external components required
- Output current in excess of 1.5A
- Internal thermal overload
- Internal short circuit current limiting
- Output transistor safe area compensation
- Output voltages of -5V

Description

The 7905 series of 3-Terminal medium currentnegative voltage regulators are monolithic integrated circuits designed as fixed voltage regulators. These regulators employ internal current limiting, thermal shutdown and safe area compensation making them essentially indestructible.

Internal Block Digram



Absolute Maximum Ratings

Parameter	Symbol	Value	Unit
Input voltage	V_{IN}	-30	V
Output voltage	V_O	-5	V
Operating Junction Temperature Range	T_j	-55 ~ 150	℃
Storage Temperature Range	T_{stg}	-65 ~ 150	℃

Electrical Characteristics (Ta = 25 °C)

(Refer to the test circuits, I_O=500mA, V_I=-10V, C_I = 2.2μF, C_O=1μF unless otherwise specified)

Parameter	Symbol	Conditions		Value			Unit
				Min	Typ	Max	
Output Voltage	V_O	Tj = 25°C		-4.8	-5.0	-5.2	V
		I_O= 5mA ~ 1A , P_O<15W V_I = -7V ~ -20V		-4.75	-5.0	-5.25	
Line Regulation (Note)	ΔV_O	Tj = 25°C	V_I = -7V ~ -25V			100	mV
			V_I = -8V ~ -12V			50	
Load Regulation (Note)	ΔV_O	Tj = 25°C	I_O= 5mA ~ 1.5A			100	mV
			I_O= 0.25A ~ 0.75A			50	
Quiescent Current	I_Q	Tj = 25°C				6.0	mA
Quiescent Current Change	ΔI_Q	I_O= 5mA ~ 1A				0.5	mA
		V_I = -8 ~ -25V				0.8	
Output Voltage Drift	$\Delta V/\Delta T$	I_O = 5mA			-0.4		mV/°C
Output Noise Voltage	V_N	f = 10Hz ~ 100KHz			40		μV
Ripple Rejection	RR	f = 120Hz, ΔV_I = 10V			60		dB
Dropout Voltage	V_D	T j =25°C, I_O = 1A			2		V
Short Circuit Current	I_{SC}	T j =25 , V_I= -35V			300		mA
Peak Current	I_{PK}	T j = 25°C			2.2		mA

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.

Test Circuit

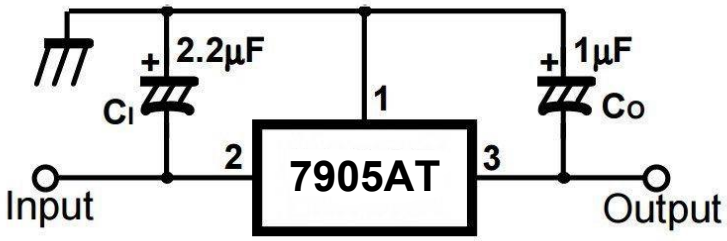


Figure1:Fixed Output Regulator

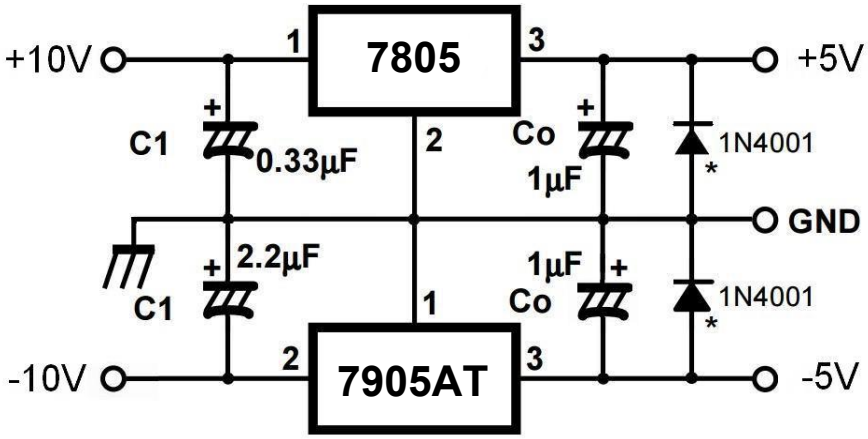
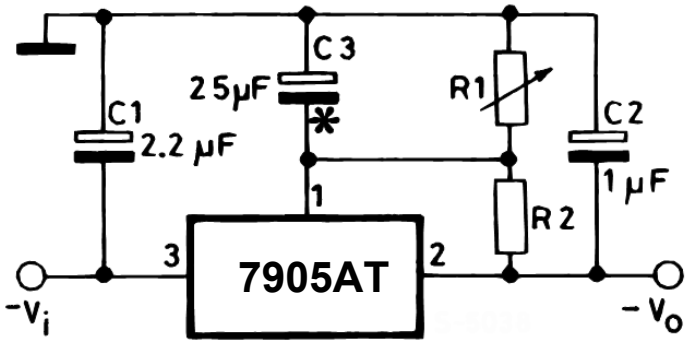


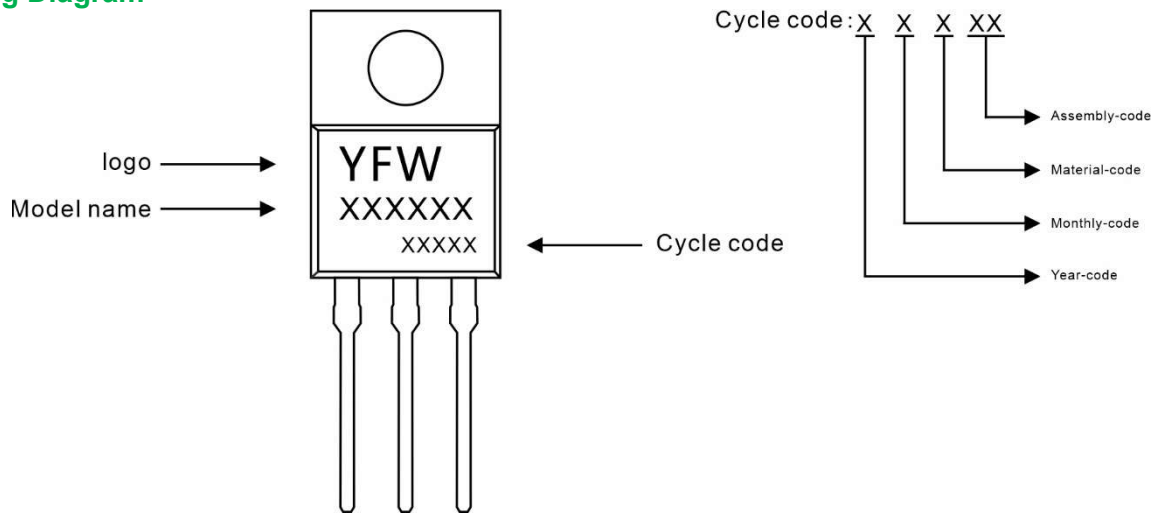
Figure2:Split Power Supply (±5V/1A)



$$V_O = 5\times \frac{R1+R2}{R2}$$

Figure3: Circuit for Increasing Output Voltage

Marking Diagram

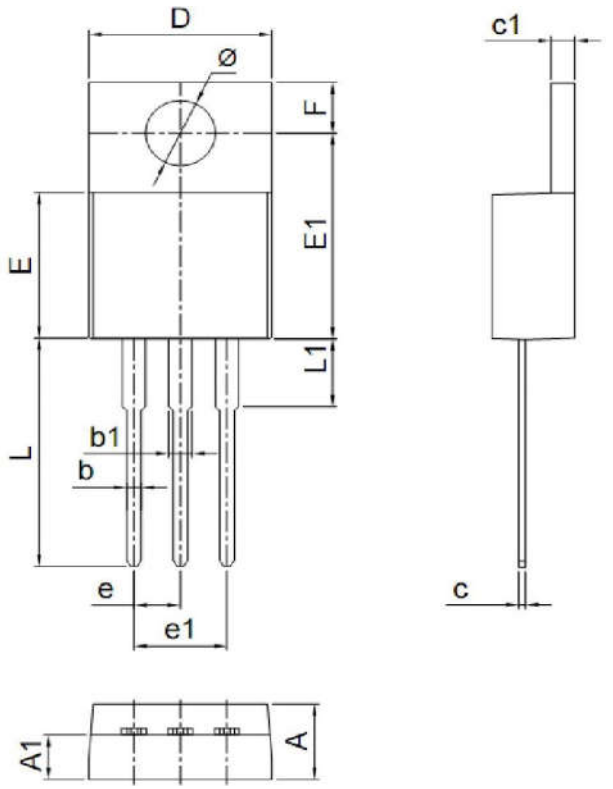


Ordering information

Model name	Package	Unit Weight	Base Quantity	Packing Quantity
7905AT	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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