

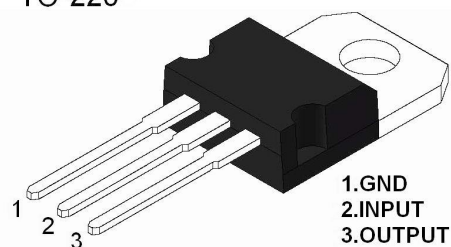
Description

The L7915CV-DG-CN series of 3-Terminal medium current negative 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.

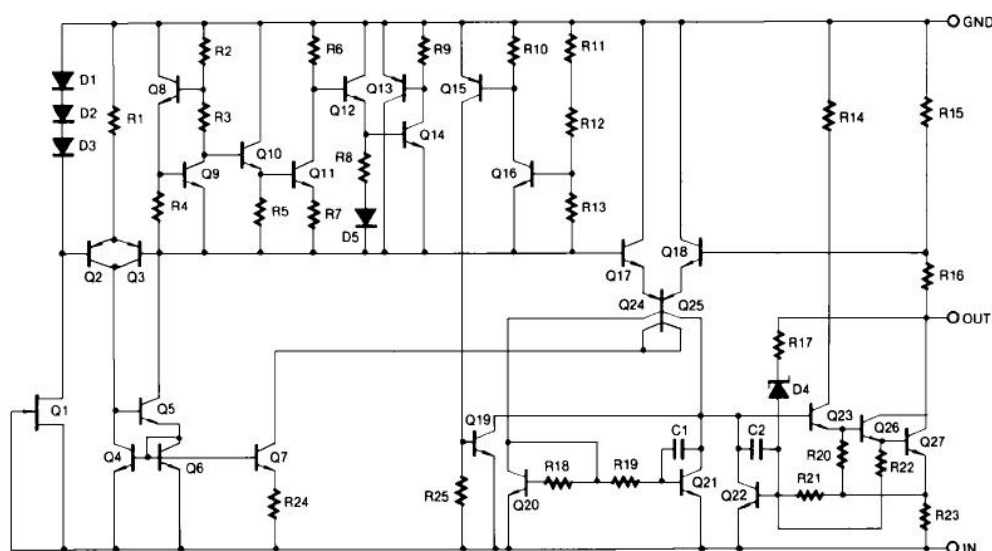
Features

- 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 -15V

TO-220



Internal Block Diagram



Absolute Maximum Ratings

Parameter	Symbol	Value	Unit
Input voltage	V_{IN}	-30	V
Output voltage	V_O	-15	V
Operating Junction Temperature Range	T_j	-55 ~ 150	°C
Storage Temperature Range	T_{stg}	-65 ~ 150	°C

Electrical Characteristics ($T_a = 25\text{ }^{\circ}\text{C}$)

(Refer to the test circuits, $I_o=0.75\text{A}$, $V_I=-23\text{V}$, $C_I = 2.2\mu\text{F}$, $C_O=1\mu\text{F}$ unless otherwise specified)

Parameter	Symbol	Conditions		Value			Unit
				Min	Typ	Max	
Output Voltage	V_o	$T_j = 25^{\circ}\text{C}$		-14.40	-15.0	-15.60	V
		$I_o = 5\text{mA} \sim 1.5\text{A}$, $P_o < 15\text{W}$ $V_I = -17.5\text{V} \sim -30\text{V}$		-14.25	-15.0	-15.75	V
Line Regulation (Note)	ΔV_o	$T_j = 25^{\circ}\text{C}$	$V_I = -17.5\text{V} \sim -30\text{V}$			300	mV
			$V_I = -20\text{V} \sim -26\text{V}$			150	
Load Regulation (Note)	ΔV_o	$T_j = 25^{\circ}\text{C}$	$I_o = 5\text{mA} \sim 1.5\text{A}$			300	mV
			$I_o = 0.25\text{A} \sim 0.75\text{A}$			150	
Quiescent Current	I_Q	$T_j = 25^{\circ}\text{C}$				6.0	mA
Quiescent Current Change	ΔI_Q	$I_o = 5\text{mA} \sim 1\text{A}$				0.5	mA
		$V_I = -17.5 \sim -30.5\text{V}$				1.0	
Output Voltage Drift	$\Delta V/\Delta T$	$I_o = 5\text{mA}$			-0.9		mV/ $^{\circ}\text{C}$
Output Noise Voltage	V_N	$f = 10\text{HZ} \sim 100\text{KHZ}$, $T_a = 25^{\circ}\text{C}$			250		μV
Ripple Rejection	RR	$f = 120\text{Hz}$, $\Delta V_I = 10\text{V}$			60		dB
Dropout Voltage	V_D	$T_j = 25^{\circ}\text{C}$, $I_o = 1\text{A}$			2		V
Short Circuit Current	I_{SC}	$T_j = 25^{\circ}\text{C}$, $V_I = -35\text{V}$			300		mA
Peak Current	I_{PK}	$T_j = 25^{\circ}\text{C}$			2.2		A

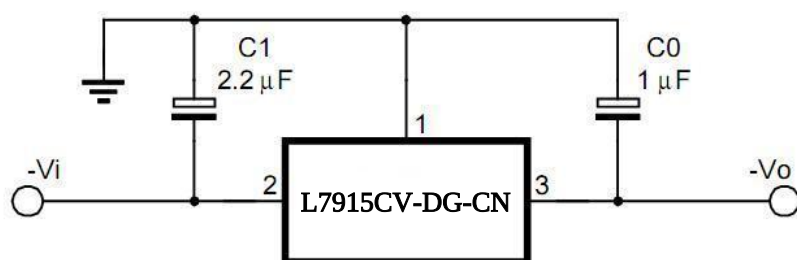
Notes:

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

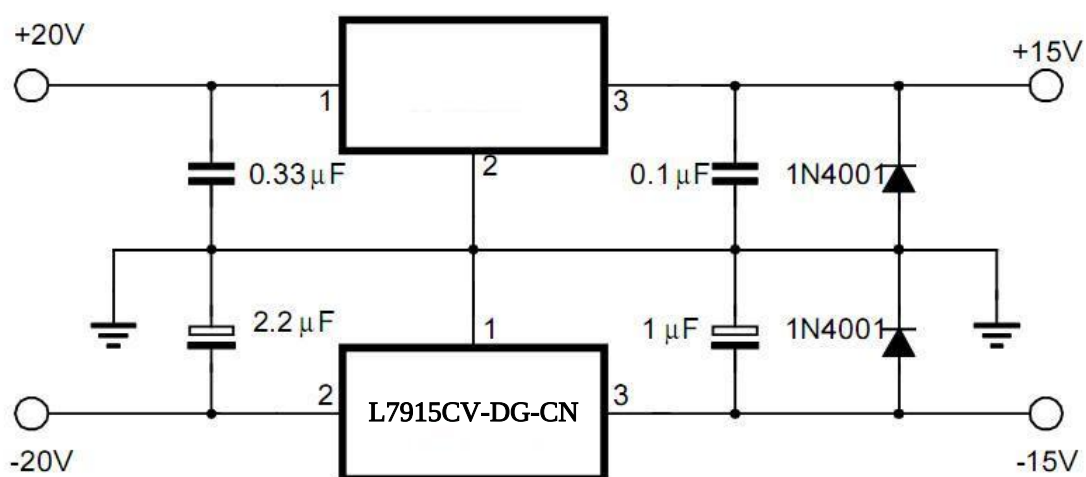
Thermal Resistances

Parameter	Symbol	Value	Unit
Thermal resistance junction to case	$R_{\theta JC}$	5	$^{\circ}\text{C}/\text{W}$
Thermal resistance junction to ambient	$R_{\theta JA}$	65	$^{\circ}\text{C}/\text{W}$

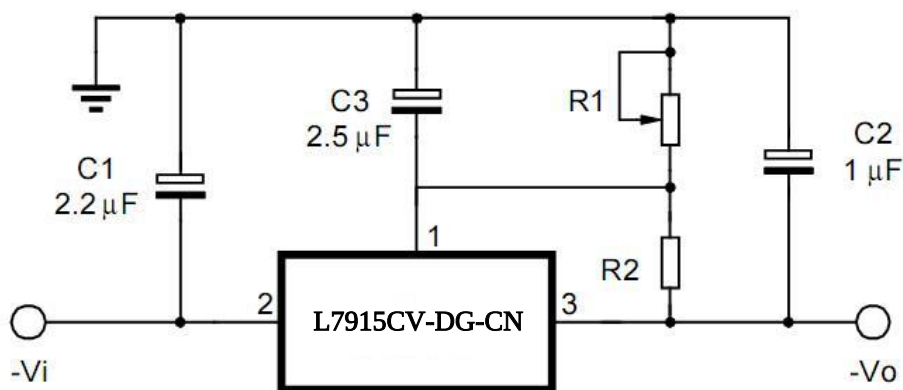
Typical Applications



Fixed output regulator

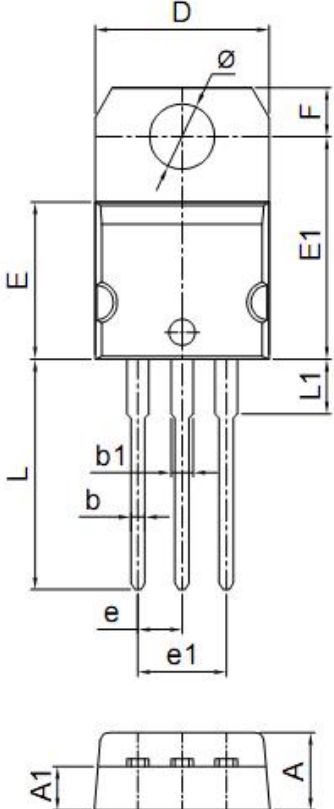
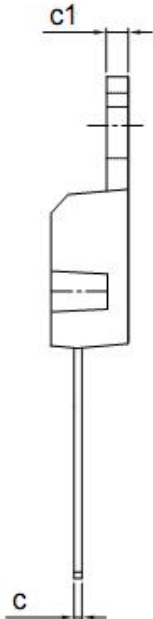


Split power supply(+15V,1A)



Circuit for increasing output voltage

Package Dimensions

	Symbol	Millimeter		Inches	
		Min.	Max.	Min.	Max.
	A	4.30	4.70	0.171	0.184
	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	0.40	0.55	0.012	0.020
	c1	1.17	1.37	0.046	0.054
	D	9.90	10.20	0.390	0.402
	E	8.90	9.10	0.335	0.350
	E1	12.50	13.00	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	12.70	13.70	0.520	0.543
	L1	2.90	3.30	0.150	0.165
	Φ	3.75	3.95	0.142	0.156

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