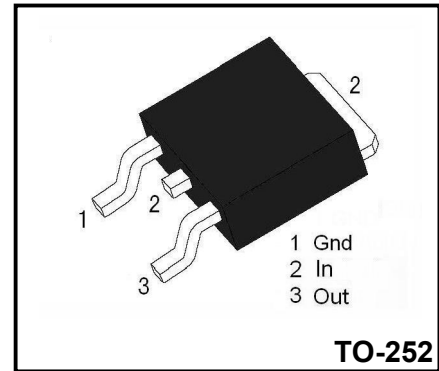


3-Terminal 1.5A Negative Voltage Regulator

Description

The 7915 three-terminal negative regulators is available in TO-252 packages and several fixed output voltages, making it useful in a wide range of applications. These regulators can provide local on-card regulation, eliminating the distribution problems associated with single point regulation; furthermore, having the same voltage as the 7815 positive, they are particularly suited for split power supplies. If adequate heat sinking is provided, they can deliver over 1.5 A output current.

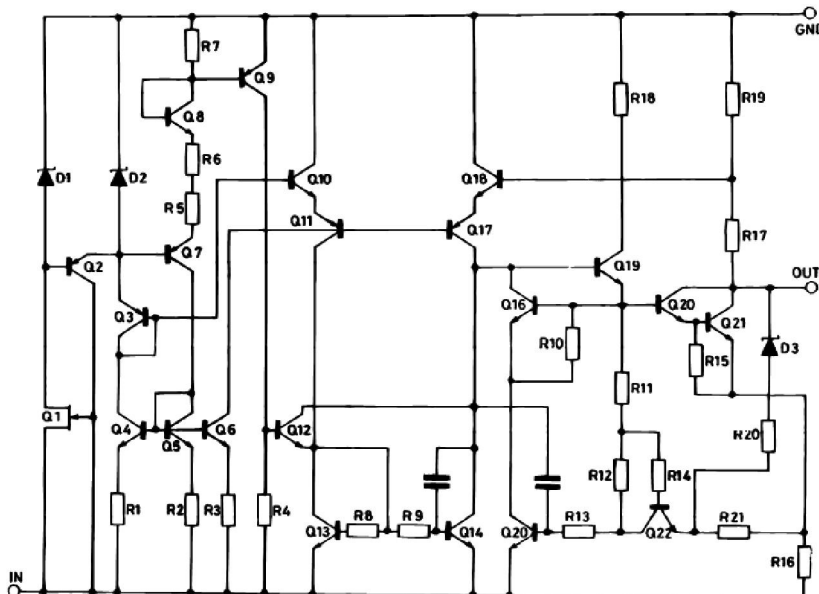
Although designed primarily as fixed voltage regulators, these devices can be used with external components to obtain adjustable voltages and currents.



Features

- ◆ Output Current up to 1.5A
- ◆ Output Voltages of -15V
- ◆ Thermal Overload Protection
- ◆ Short Circuit Protection
- ◆ Output transition SOA protection

Schematic diagram



Absolute Maximum Ratings

Parameter	Symbol	Value	Unit
Input Voltage	V_{IN}	-35	V
Output current	I_O	-1.5	A
Operating Junction Temperature Range	T_{OPR}	0 ~ +125	°C
Storage Temperature Range	T_{STG}	-55 ~ +150	°C

Note: Absolute maximum ratings are those values beyond which damage to the device may occur. Functional operation under these condition is not implied.

Thermal Resistances (Ta = 25°C)

Parameter	Symbol	Value	Unit
Thermal Resistance Junction-Case	$R_{\theta JC}$	5	°C/W
Thermal Resistance Junction-Air	$R_{\theta JA}$	65	°C/W

Electrical Characteristics

 Refer to the test circuits , $I_o = -750mA$, $V_i = -23V$, $C_i = 2.2\mu F$, $C_o = 1\mu F$ unless otherwise specified

Parameter	Symbol	Conditions	Value			Unit
			Min	Typ	Max	
Output Voltage	V_o	$T_j = 25^\circ C$	-14.40	-15.0	-12.60	V
		$I_o = -5mA \sim -1.5A$, $P_o \leq 15W$ $V_i = -17.5 \sim -30V$	-14.25	-15.0	-15.75	V
Line Regulation(Note)	ΔV_o	$T_j = 25^\circ C$	$V_i = -17.5V \sim -30V$		300	mV
			$V_i = -20V \sim -26V$		150	
Load Regulation(Note)	ΔV_o	$T_j = 25^\circ C$	$I_o = -5mA \sim -1.5A$		300	mV
			$I_o = -0.25A \sim -0.75A$		150	
Quiescent Current	I_q	$T_j = 25^\circ C$			8.0	mA
Quiescent Current Change	ΔI_q	$I_o = -5mA \sim -1.5A$			0.5	mA
		$I_o = -17.5V \sim -30.5V$			1.0	
Output Voltage Drift	$\Delta V / \Delta T$	$I_o = 5mA$		-0.9		mV/°C
Output Noise Voltage	V_N	$f = 10Hz \sim 100KHz$, $T_j = 25^\circ C$		250		μV
Ripple Rejection	RR	$f = 120Hz$, $\Delta V_i = 10V$		60		dB
Dropout Voltage	V_D	$I_o = 1.5A$, $T_j = 25^\circ C$		2		V
Short Circuit Current	I_{SC}	$V_i = -35V$, $T_j = 25^\circ C$		300		mA
Peak Current	I_{PK}	$T_j = 25^\circ C$		2.2		A

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

Application information

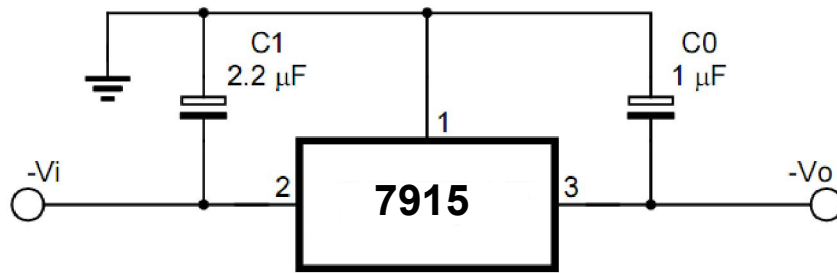


Figure 1.Fixed Output regulator

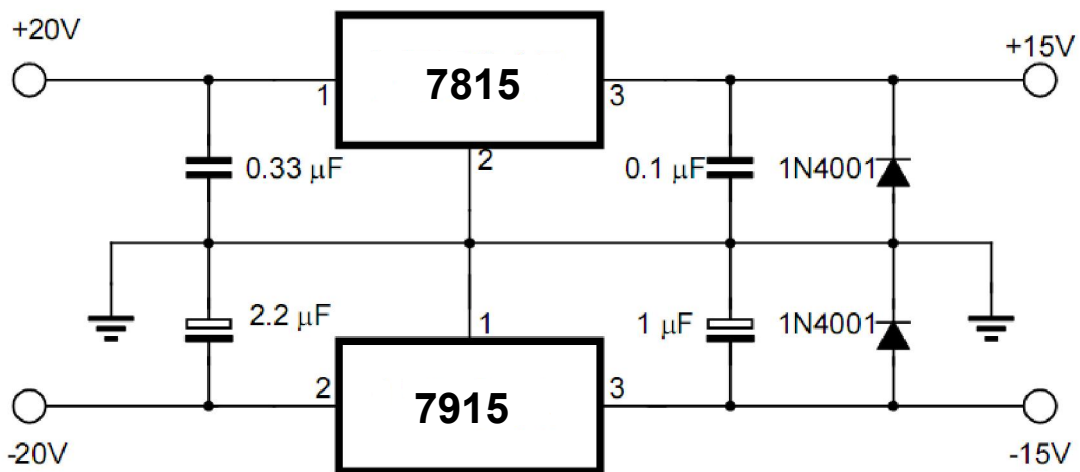


Figure 2. Split power supply ($\pm 15\text{ V}$, -1.5 A)

Package Dimensions

TO-252

TO-252	Dim	Millimeter		Inches	
		Min.	Max.	Min.	Max.
	A	2.20	2.50	0.087	0.098
	A1	0.00	0.12	0.000	0.005
	A2	2.20	2.40	0.087	0.094
	B	1.20	1.60	0.047	0.063
	b	0.50	0.70	0.020	0.028
	b1	0.70	0.90	0.028	0.035
	c	0.40	0.60	0.016	0.024
	c1	0.40	0.60	0.016	0.024
	D	6.35	6.65	0.250	0.262
	D1	5.20	5.40	0.205	0.213
	E	5.40	5.70	0.213	0.224
	e	2.20	2.40	0.087	0.094
	e1	4.40	4.80	0.173	0.189
	L	9.60	10.20	0.378	0.402
	L1	2.70	3.10	0.106	0.122
	L2	1.40	1.80	0.055	0.071
L3	0.90	1.50	0.035	0.059	

Summary of Packing Options

Package	Packing Description	Packing Quantity	Industry Standard
TO-252(D-PAK)	Tape/Reel,13"reel	2500	EIA-481-1