

KA337

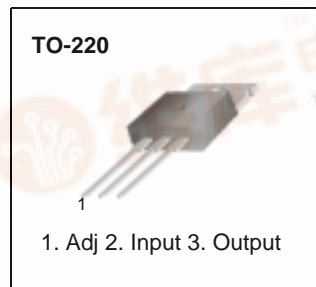
3-Terminal 1.5A Negative Adjustable Regulator

Features

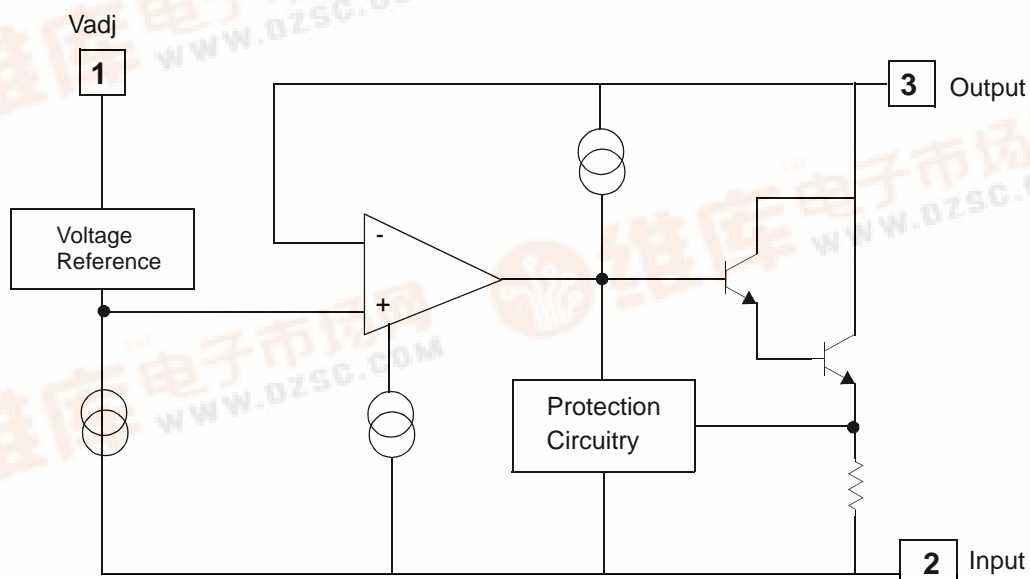
- Output current in excess of 1.5A
- Output voltage adjustable between -1.2V and -37V
- Internal thermal overload protection
- Internal short circuit current limiting
- Output transistor safe area compensation
- Floating operation for high voltage applications
- Standard 3-pin TO-220 package

Description

The KA337 is a 3-terminal negative adjustable regulator. It supply in excess of 1.5A over an output voltage range of -1.2V to -37V. This regulator requires only two external resistor to set the output voltage. Included on the chip are current limiting, thermal overload protection and safe area compensation.



Internal Block Diagram



Absolute Maximum Ratings

Parameter	Symbol	Value	Unit
Input-Output Voltage Differential	$ V_I - V_O $	40	V
Power Dissipation	PD	Internally limited	W
Operating Temperature Range	T _{OPR}	0 ~ +125	°C
Storage Temperature Range	T _{STG}	-65 ~ +125	°C

Electrical Characteristics

($V_I - V_O = 5V$, $I_O = 40mA$, $0^\circ C \leq T_J \leq +125^\circ C$, $P_{DMAX} = 20W$, unless otherwise specified)

Parameter	Symbol	Conditions	Min	Typ.	Max.	Unit
Line Regulation (Note1)	R _{line}	T _A = +25°C 3V ≤ V _I - V _O ≤ 40V	-	0.01	0.04	% / V
		3V ≤ V _I - V _O ≤ 40V	-	0.02	0.07	
Load Regulation (Note1)	R _{load}	T _A = +25°C 10mA ≤ I _O ≤ 0.5A	-	15	50	mV
		10mA ≤ I _O ≤ 1.5A	-	15	150	
Adjustable Pin Current	I _{ADJ}	-	-	50	100	μA
Adjustable Pin Current	ΔI _{ADJ}	T _A = +25°C 10mA ≤ I _O ≤ 1.5A 3V ≤ V _I - V _O ≤ 40V	-	2	5	μA
Reference Voltage	V _{REF}	T _A = +25°C	-1.213	-1.250	-1.287	V
		3V ≤ V _I - V _O ≤ 40V 10mA ≤ I _O ≤ 1.5A	-1.200	-1.250	-1.300	
Temperature Stability	ST _T	0°C ≤ T _J ≤ +125°C	-	0.6	-	%
Minimum Load Current to Maintain Regulation	I _{L(MIN)}	3V ≤ V _I - V _O ≤ 40V	-	2.5	10	mA
		3V ≤ V _I - V _O ≤ 10V	-	1.5	6	
Output Noise	e _N	T _A = +25°C 10Hz ≤ f ≤ 10KHz	-	3×V _{OUT}	-	V/10 ⁶
Ripple Rejection Ratio	RR	V _O = -10V, f = 120Hz	-	60	-	dB
		C _{ADJ} = 10μF (Note2)	66	77	-	
Long Term Stability	ST	T _J = 125°C, 1000Hours	-	0.3	1	%
Thermal Resistance Junction to Case	R _{θJC}	-	-	4	-	°C / W

Note:

1. 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.
2. C_{ADJ}, when used, is connected between the adjustment pin and ground.

Typical Application

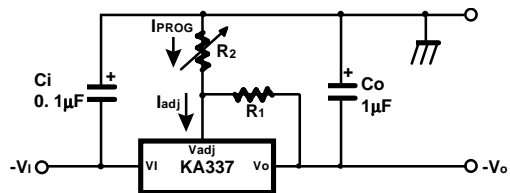


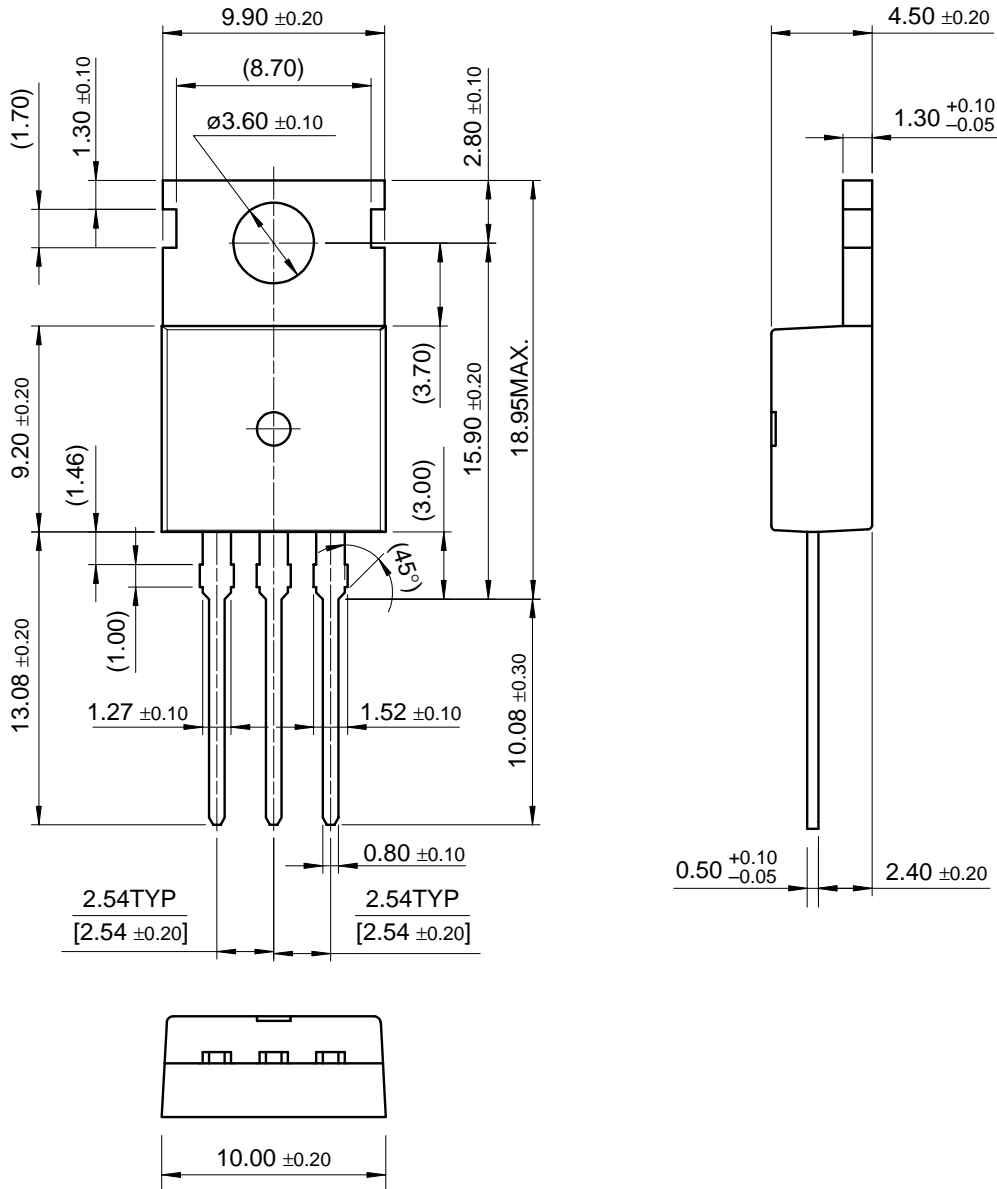
Figure 1. Programmable Regulator

- C_i is required if regulator is located more than 4 inches from power supply filter. A 1.0 μF solid tantalum or 10 μF aluminum electrolytic is recommended.
- C_o is necessary for stability. A 1.0 μF solid tantalum or 10 μF aluminum electrolytic is recommended.
- $V_o = -1.25V (1 + R_2/R_1)$

Mechanical Dimensions

Package

TO-220



Ordering Information

Product Number	Package	Operating Temperature
KA337	TO-220	0°C to + 125°C

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