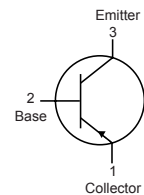
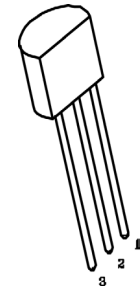


RoHS  
Compliant



## Features:

- No External Components Required
- Internal Short-Circuit Current Limiting
- Internal Thermal Overload Protection

## Description:

A negative 3-terminal voltage regulator in a TO-92 type package suitable for numerous applications requiring up to 100mA. This device features thermal shutdown and current limiting making the device remarkably rugged. In most applications, no external components are required for operation.

A useful for on-card regulation or any other application where a regulated negative voltage at a modest current level is needed. This device offers a substantial advantage over the common resistor/zener diode approach.

## Maximum Ratings:

Characteristic	Symbol	Rating	Unit
Input Voltage	$V_{IN}$	40	V
Internal Power Dissipation (Note 1)	$P_D$	-	-
Internally Operating Junction Temperature Range	$T_{opr}$	-0 to +70	°C
Max. Junction Temperature	$T_J$	+125	
Storage Temperature Range	$T_{stg}$	-55 to +150	
Lead Temperature (During Soldering, 10sec)	$T_L$	+300	

# Bipolar Transistor

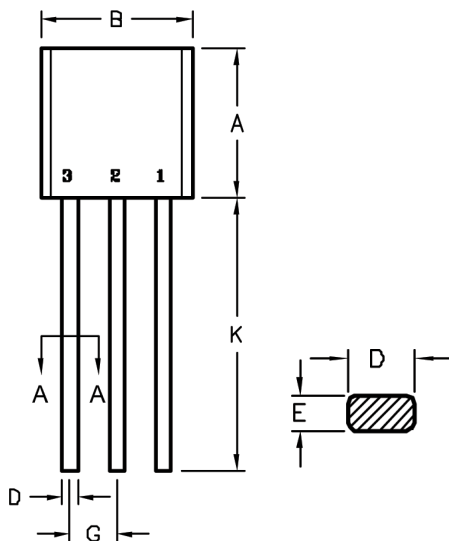


## Electrical Characteristics: ( $T_A = +25^\circ\text{C}$ Unless otherwise specified)

Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
Output Voltage	$V_O$	$T_J = +25^\circ\text{C}$	23	24	25	V
		$1\text{mA} \leq I_O \leq 100\text{mA}, 27\text{V} \leq V_{IN} \leq 38\text{V}$	22.8		25.2	
Line Regulation	$\text{Reg}_{\text{line}}$	$T_J = +25^\circ\text{C}, 27\text{V} \leq V_{IN} \leq 38\text{V}$	-	-	350	mA
Load Regulation	$\text{Reg}_{\text{load}}$	$T_J = +25^\circ\text{C}, 1\text{mA} \leq I_O \leq 100\text{mA}$			200	
Quiescent Current	$I_B$	$T_J = +125^\circ\text{C}$			6	
Quiescent Current Change	$I_B$	With line, $28\text{V} \leq V_{IN} \leq 38\text{V}$			1.5	
		With load, $1\text{mA} \leq I_O \leq 40\text{mA}$			0.1	
Output Noise Voltage	$V_N$	$T_J = +25^\circ\text{C}, f = 10\text{Hz to } 10\text{kHz}$		200		$\mu\text{A}$
Ripple Rejection	RR	$29\text{V} \leq V_{IN} \leq 35\text{V}, f = 120\text{Hz}$	31	47	-	dB
Drop Out Voltage	$V_{DO}$	$T_J = +25^\circ\text{C}, I_C = 40\text{mA}$	-	1.7		V

### Notes:

1. Thermal resistance, junction-to-ambient is  $180^\circ\text{C/W}$  when mounted with 0.4" leads on a P.C. board and  $+160^\circ\text{C/W}$  when mounted with 0.25" leads on a P.C. board
2. To ensure constant junction temperature, low duty cycle pulse testing is used.



Dimensions	A	B	C	D	E	F	G	H	K
Min.	4.32	4.45	3.18	0.41	0.35	5°	1.14	1.14	12.7
Max.	5.33	5.2	4.19	0.55	0.5		1.4	1.53	-

Dimensions : Millimetres

### Pin Configuration:

1. Collector
2. Base
3. Emitter

### Part Number Table

Description	Part Number
Transistor, PNP, 0.6A, 150V, TO-92	2N5401

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