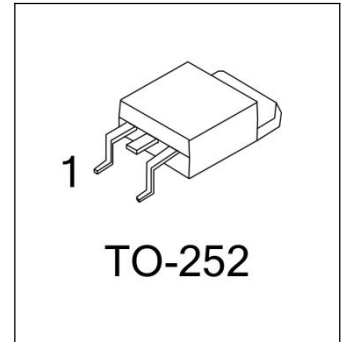


### General Description

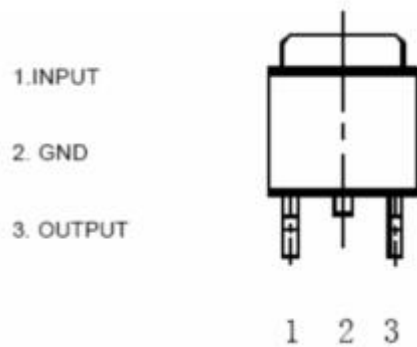
The 78M06 is monolithic fixed voltage regulator integrated circuit. They are suitable for applications that required supply current up to 0.5 A.

### Features

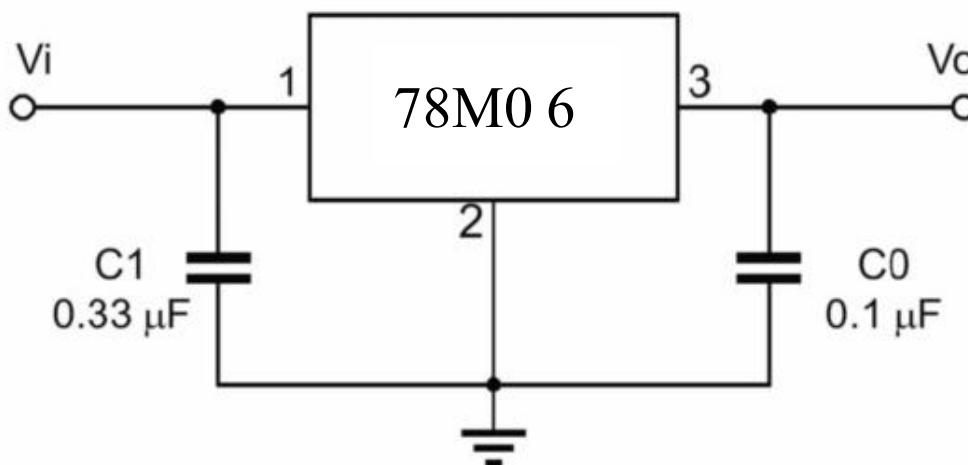
- Output Current Up To 0.5 A
- Fixed Output Voltage Of 6V, Available
- Thermal Overload Shutdown Protection
- Short Circuit Current Limiting
- Output Transistor SOA Protection



### Pin Connection



### Typical Application Circuits



**Absolute Maximum Ratings** ( $T_J=25^{\circ}\text{C}$ , unless otherwise specified)

Characteristic	Value	Value	Unit
Input Voltage	$V_i$	35	V
Thermal Resistance Junction-Case	$R_{\theta JC}$	10	$^{\circ}\text{C}/\text{W}$
Thermal Resistance Junction-Air	$R_{\theta JA}$	93	$^{\circ}\text{C}/\text{W}$
Operating Temperature Range	$T_{\text{OPR}}$	-40~+85	$^{\circ}\text{C}$
Storage Temperature Range	$T_{\text{STG}}$	-55~+150	$^{\circ}\text{C}$

**Electrical Characteristics**

(Unless otherwise specified,  $-40^{\circ}\text{C} < T_J < 85^{\circ}\text{C}$ ,  $I_o=500\text{mA}$ ,  $V_i=10\text{V}$ ,  $C_i=0.33\mu\text{F}$ ,  $C_o=0.1\mu\text{F}$ )

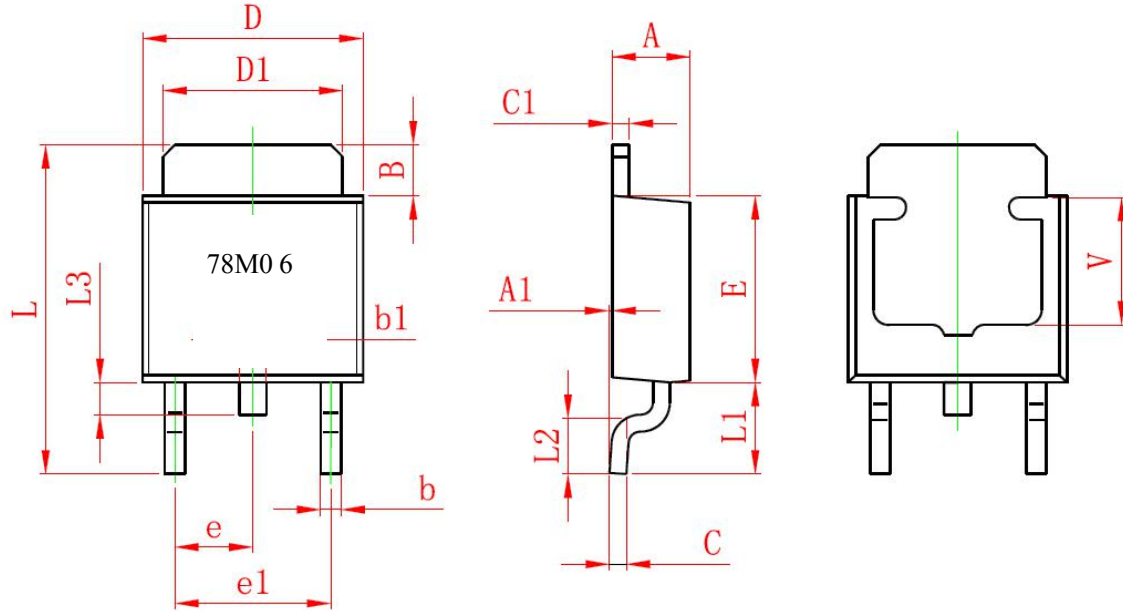
**For 78M06 (unless otherwise noted,  $V_i=10\text{V}$ ,  $I_o=350\text{mA}$ ,  $-30^{\circ}\text{C} < T_J < 85^{\circ}\text{C}$ ,  $C_1=0.33\mu\text{F}$ ,  $C_o=0.1\mu\text{F}$ )**

Characteristics	Symbol	Test Conditions	Min	Typ	Max	Unit
Output Voltage	$V_o$	$T_J=+25^{\circ}\text{C}$	5.75	6.0	6.25	V
		$8.5\text{V} \leq V_i \leq 21\text{V}$ , $I_o=5\text{mA} \sim 0.35\text{A}$	5.7	6.0	6.3	
Line Regulation*	$\Delta V_o$	$8\text{V} \leq V_i \leq 25\text{V}$ , $T_J=25^{\circ}\text{C}$ , $I_o=200\text{mA}$		4	100	mV
		$8.5\text{V} \leq V_i \leq 21\text{V}$ , $I_o=0.2\text{A}$ , $T_J=25^{\circ}\text{C}$		2	50	
Load Regulation*	$\Delta V_o$	$T_J=25^{\circ}\text{C}$ , $I_o=5\text{mA} \sim 0.5\text{A}$		25	120	mV
		$T_J=25^{\circ}\text{C}$ , $I_o=5\text{mA} \sim 200\text{mA}$		10	60	
Quiescent Current	$I_Q$	$T_J=+25^{\circ}\text{C}$		4	6	mA
Quiescent Current Change	$\Delta I_Q$	$9\text{V} \leq V_i \leq 25\text{V}$ , $I_o=200\text{mA}$			0.8	mA
		$5\text{mA} \leq I_o \leq 0.35\text{A}$			0.5	
Output Noise Voltage	$V_N$	$10\text{Hz} \leq f \leq 100\text{kHz}$ , $T_J=25^{\circ}\text{C}$		40	200	$\mu\text{V}$
Ripple Rejection	RR	$9\text{V} \leq V_i \leq 19\text{V}$ , $f=120\text{Hz}$ , $I_o=300\text{mA}$ , $T_J=25^{\circ}\text{C}$	56	80		dB
Dropout Voltage	$V_d$	$T_J=+25^{\circ}\text{C}$		2		V
Short Circuit Current Limit	$I_{\text{SC}}$	$V_i=30\text{V}$ , $V_o=0\text{V}$ , $T_J=+25^{\circ}\text{C}$		0.8		A

### OUTLINE DRAWING

TO252-2

Unit: mm



Symbol	Dimensions In Millimeters		Dimensions In Inches	
	Min.	Max.	Min.	Max.
A	2.200	2.400	0.087	0.094
A1	0.000	0.127	0.000	0.005
B	1.350	1.650	0.053	0.065
b	0.500	0.700	0.020	0.028
b1	0.700	0.900	0.028	0.035
c	0.430	0.580	0.017	0.023
c1	0.430	0.580	0.017	0.023
D	6.350	6.650	0.250	0.262
D1	5.200	5.400	0.205	0.213
E	5.400	5.700	0.213	0.224
e	2.300 TYP.		0.091 TYP.	
e1	4.500	4.700	0.177	0.185
L	9.500	9.900	0.374	0.390
L1	2.550	2.900	0.100	0.114
L2	1.400	1.780	0.055	0.070
L3	0.600	0.900	0.024	0.035
V	3.800 REF.		0.150 REF.	