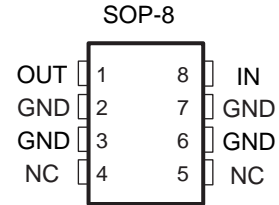




## FEATURES

- Wide range of available, fixed output voltage.
- Low cost.
- Internal short-circuit current limiting.
- Internal thermal overload protection.
- No external components required.

## PIN DESCRIPTION



## APPLICATIONS

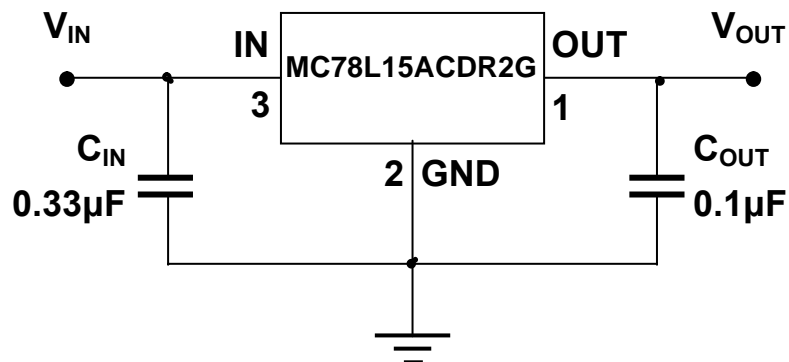
- Three-terminal positive voltage regulator.

## MAXIMUM RATING

operating temperature range applies unless otherwise specified

Symbol	Parameter	Value	Units
$V_I$	Input voltage	35	V
$I_{CM}$	Maximum output current	100	mA
$P_D$	Power dissipation	500	mW
$T_{OPR}$	Operating junction temperature	0 to +125	°C
$T_j, T_{stg}$	Storage temperature range	-40 to +150	°C

## TYPICAL APPLICATION CIRCUIT



**Conventional Circuit**



## ELECTRICAL CHARACTERISTICS

( $V_{IS}=23V, I_O=40mA, 0^{\circ}C < T_J < 125^{\circ}C, C_I=0.33\mu F, C_O=0.1\mu f$ , unless otherwise specified)

Parameter	Symbol	Test conditions	78L15			UNIT
			MIN	TYP	MAX	
Output voltage	$V_O$	$T_J=25^{\circ}C$ $V_i=17.5V-30V, I_O=1mA-40mA$ $V_i=23V, I_O=1mA-70mA$	14.4 14.25 14.25	15	15.6 15.75 15.75	V
Load regulation	$\Delta Reg_{load}$	$T_J=25^{\circ}C, I_O=1mA-100mA$ $T_J=25^{\circ}C, I_O=1mA-40mA$		25 12	150 75	mV
Line regulation	$\Delta Reg_{line}$	$17.5V \leq V_i \leq 30V, T_J=25^{\circ}C$ $20V \leq V_i \leq 30V, T_J=25^{\circ}C$		130 110	300 250	mV
Input Bias Current	$I_{IB}$	$T_J=25^{\circ}C$ $T_J=125^{\circ}C$		4.4	6.5 6.0	mA
Input Bias Current Change	$\Delta I_{IB}$	$20V \leq V_i \leq 30V$ $1mA \leq I_O \leq 40mA$			1.5 0.1	mA
Output noise voltage	$V_N$	$10Hz \leq f \leq 100KHz, T_A=25^{\circ}C$		90		$\mu V$
Ripple rejection	RR	$I_O=40mA, 18.5V \leq V_i \leq 28.5V,$ $f=120Hz, T_J=25^{\circ}C$	34	39		dB
Dropout voltage	$V_I-V_O$	$T_J=25^{\circ}C$		1.7		V



TYPICAL CHARACTERISTICS @  $T_a=25^\circ\text{C}$  unless otherwise specified

Figure 1. Dropout Characteristics

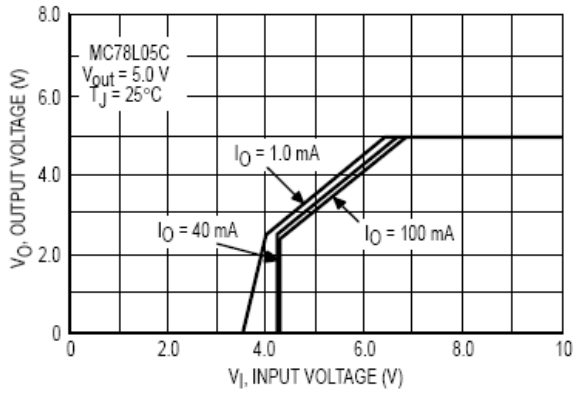


Figure 2. Dropout Voltage versus Junction Temperature

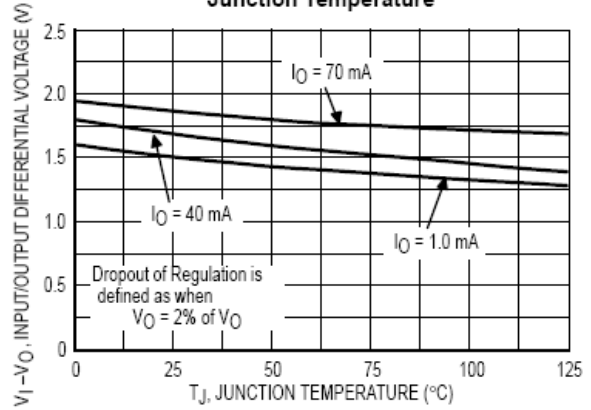


Figure 3. Input Bias Current versus Ambient Temperature

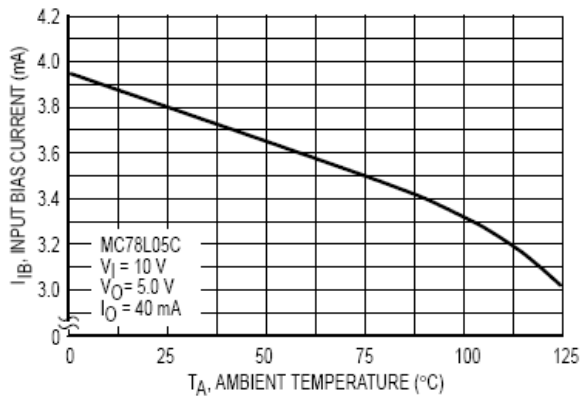
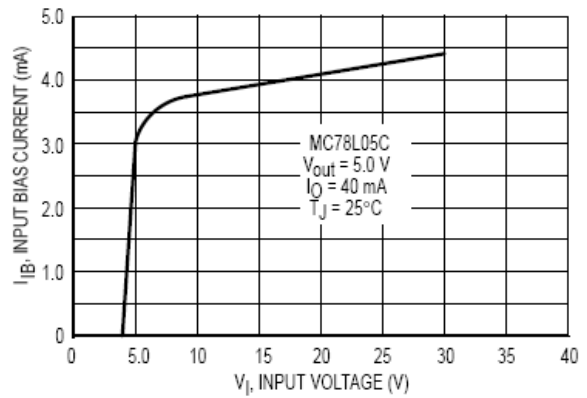
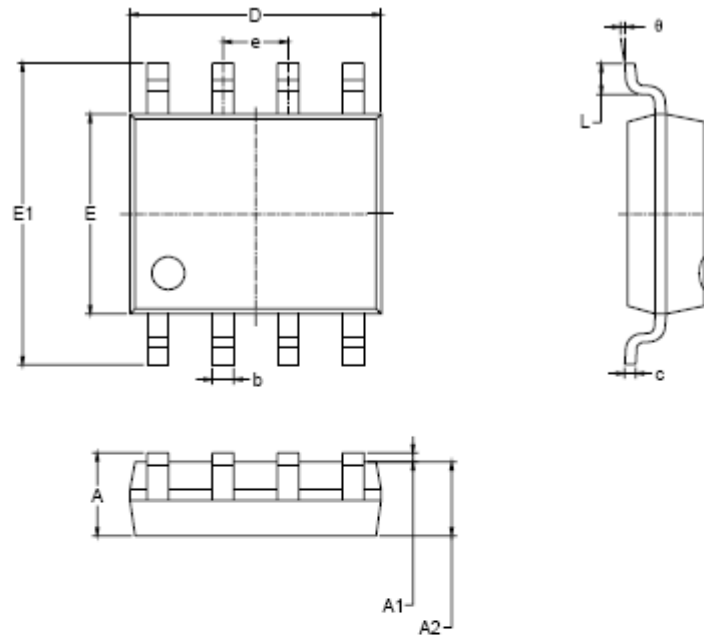


Figure 4. Input Bias Current versus Input Voltage





**SOP-8**



Symbol	Dimensions In Millimeters		Dimensions In Inches	
	MIN	MAX	MIN	MAX
A	1.350	1.750	0.053	0.069
A1	0.100	0.250	0.004	0.010
A2	1.350	1.550	0.053	0.061
b	0.330	0.510	0.013	0.020
c	0.170	0.250	0.008	0.010
D	4.700	5.100	0.185	0.200
E	3.800	4.000	0.150	0.157
E1	5.800	6.200	0.228	0.244
e	1.27 BSC		0.050 BSC	
L	0.400	1.270	0.016	0.050
theta	0°	8°	0°	8°



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