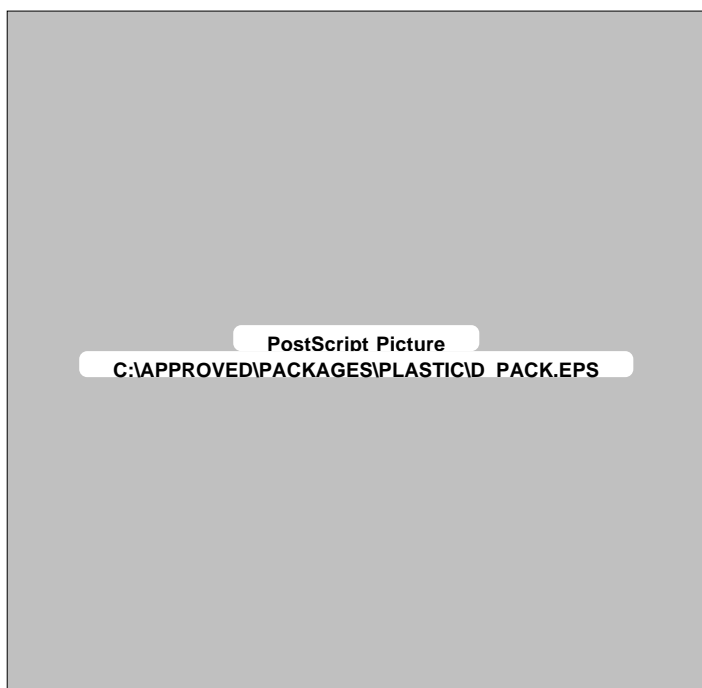


**MECHANICAL DATA**

Dimensions in mm (inches)



**3 TERMINAL  
LOW CURRENT  
5 VOLT POSITIVE  
VOLTAGE REGULATOR**

**FEATURES**

- 0.01%/V LINE REGULATION
- 0.3%/A LOAD REGULATION
- THERMAL OVERLOAD PROTECTION
- SHORT CIRCUIT PROTECTION
- SAFE OPERATING AREA PROTECTION
- 1% OUTPUT VOLTAGE TOLERANCE

D-PACK — TO251 plastic package

Pin 1 – V<sub>IN</sub>      Pin 2 – GND      Pin 3 – V<sub>OUT</sub>

**ABSOLUTE MAXIMUM RATINGS** (T<sub>case</sub> = 25°C unless otherwise stated)

V <sub>I</sub>	DC Input Voltage	35V
P <sub>D</sub>	Power Dissipation	Internally limited
T <sub>j</sub>	Operating Junction Temperature Range	0°C to 125°C
	Maximum Junction Temperature	125°C
T <sub>stg</sub>	Storage Temperature Range	-65°C to +150°C
T <sub>L</sub>	Lead Temperature (Soldering, 10 sec)	300°C

**ELECTRICAL CHARACTERISTICS** ( $T_j = 25^\circ\text{C}$  unless stated)

Parameter	Test Conditions	IP78M05ADP			IP78M05DP			Unit
		Min.	Typ.	Max.	Min.	Typ.	Max.	
$V_O$ Output Voltage*	$I_O = 100\text{mA}$ $V_{IN} = 10\text{V}$	4.95	5	5.05	4.80	5	5.20	V
	$I_O = 5\text{mA to } 350\text{mA}$ $V_{IN} = 7.5 \text{ to } 20\text{V}$ $T_j = 0 \text{ to } 125^\circ\text{C}$ $P_D \leq P_{MAX}$	4.85		5.15	4.75		5.25	
$\Delta V_O$ Line Regulation*	$I_O = 200\text{mA}$ $V_{IN} = 7 \text{ to } 25\text{V}$		3	10			50	mV
	$I_O = 200\text{mA}$ $V_{IN} = 8 \text{ to } 25\text{V}$ $T_j = 0 \text{ to } 125^\circ\text{C}$		3	10			25	
	$I_O = 500\text{mA}$ $V_{IN} = 8 \text{ to } 12\text{V}$		3	10			50	
$\Delta V_O$ Load Regulation*	$I_O = 5\text{mA to } 500\text{mA}$ $V_{IN} = 10\text{V}$ $T_j = 0 \text{ to } 125^\circ\text{C}$		5	50			50	mV
$I_d$ Quiescent Current*	$I_O = 350\text{mA}$ $V_{IN} = 10\text{V}$ $T_j = 0 \text{ to } 125^\circ\text{C}$		4	6		4	6	mA
$\Delta I_Q$ Quiescent Current Change*	$I_O = 5 \text{ to } 500\text{mA}$ $V_{IN} = 10\text{V}$ $T_j = 0 \text{ to } 125^\circ\text{C}$		0.1	0.5			0.5	mA
	$I_O = 200\text{mA}$ $V_{IN} = 8 \text{ to } 25\text{V}$ $T_j = 0 \text{ to } 125^\circ\text{C}$		0.2	0.8			0.8	
$V_N$ Output Noise Voltage	$f = 10\text{Hz to } 100\text{kHz}$		40	200		40	200	$\mu\text{V}$
$\frac{\Delta V_{IN}}{\Delta V_O}$ Ripple Rejection	$V_{IN} = 8 \text{ to } 18\text{V}$ $f = 120\text{Hz}$ $I_O = 300\text{mA}$	65	80		62			dB
	$V_{IN} = 8 \text{ to } 18\text{V}$ $f = 120\text{Hz}$ $I_O = 100\text{mA}$ $T_j = 0 \text{ to } 125^\circ\text{C}$	65	80		62			
Dropout Voltage*	$I_O = 350\text{mA}$		2	2.5			2.5	V
$I_{SC}$ Short Circuit Current*	$V_{IN} = 35\text{V}$		300	600		300	600	mA
$I_{PK}$ Peak Output Current*	$V_{IN} = 10\text{V}$	0.7	1.0	1.4		1.0	1.6	A
Average Temperature Coefficient of Output Voltage*	$I_O = 5\text{mA}$		0.5	2.0		0.5		$\text{mV} / ^\circ\text{C}$

\* Pulse Test:  $t_p \leq 10\text{ms}$  ,  $\delta \leq 5\%$ .

All characteristics are measured with a capacitor across the input of  $0.22\mu\text{F}$  and a capacitor across the output of  $0.1\mu\text{F}$ . Output Voltage changes due to changes in internal temperature must be taken into account separately.