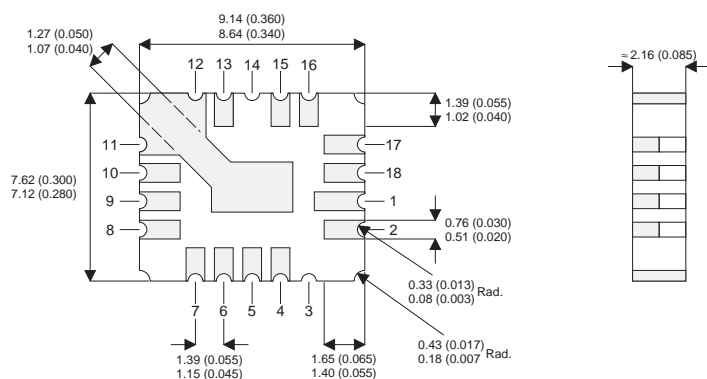


MECHANICAL DATA

Dimensions in mm (inches)



FEATURES

- OUTPUT VOLTAGE OF -5V
- THERMAL OVERLOAD PROTECTION
- SHORT CIRCUIT PROTECTION³
- OUTPUT TRANSISTOR SOA PROTECTION

LCC4 CERAMIC SURFACE MOUNT

Pins 4,5	– V_{OUT}
Pins 6,7,8,9,10,11,12,13	– GND
Pins 15,16,17,18,1,2	– V_{IN}

ABSOLUTE MAXIMUM RATINGS ($T_{case} = 25^{\circ}C$ unless otherwise stated)

V_I	DC Input Voltage	35V
P_D	Power Dissipation	Internally limited
T_j	Operating Junction Temperature Range	–55 to 150°C
T_{stg}	Storage Temperature	–65 to 150°C

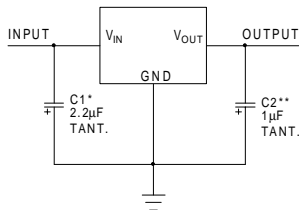
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Parameter	Test Conditions	LM7905XE			Units
		Min.	Typ.	Max.	
V_O Output Voltage	$I_O = 500\text{mA}$ $V_{IN} = -10\text{V}$	-4.9	-5	-5.1	V
	$I_O = 5\text{mA to } I_{MAX}$ $V_{IN} = -7.5\text{V to } -20\text{V}$	-4.8		-5.2	
	$P_D \leq P_{MAX}$ $T_J = -55 \text{ to } 150^\circ\text{C}$				
ΔV_O Line Regulation	$I_O = 0.5 I_{MAX}$	$V_{IN} = -7\text{V to } -25\text{V}$		3	mV
		$V_{IN} = -7.5\text{V to } -20\text{V}$		3	
	$V_{IN} = -8\text{V to } -12\text{V}$	$T_J = -55 \text{ to } 150^\circ\text{C}$		50	
		$I_O \leq I_{MAX}$		1	
ΔV_O Load Regulation	$V_{IN} = -10\text{V}$	$T_J = -55 \text{ to } 150^\circ\text{C}$		2	mV
		$I_O = 5\text{mA to } 1.5\text{A}$		25	
		$I_O = 5\text{mA to } I_{MAX}$		100	
I_Q Quiescent Current	$I_O \leq 0.5 I_{MAX}$ $V_{IN} = -10\text{V}$	$T_J = -55 \text{ to } 150^\circ\text{C}$		25	mA
				1	
ΔI_Q Quiescent Current Change	$I_O = 5\text{mA to } I_{MAX}$ $V_{IN} = -10\text{V}$	$T_J = -55 \text{ to } 150^\circ\text{C}$		0.2	mA
				0.4	
V_N Output Noise Voltage	$f = 10\text{Hz to } 100\text{kHz}$ $V_{IN} = -10\text{V}$	$T_J = -55 \text{ to } 150^\circ\text{C}$		0.2	mV
				0.5	
$\frac{\Delta V_{IN}}{\Delta V_O}$ Ripple Rejection	$f = 120\text{Hz}$ $V_{IN} = -8\text{V to } -18\text{V}$	$I_O \leq I_{MAX}$		100	dB
		$I_O \leq 0.5 I_{MAX}$		54	
		$T_J = -55 \text{ to } 150^\circ\text{C}$		54	
Dropout Voltage	$I_O = I_{MAX}$			1.4	V
R_O Output Resistance	$f = 1 \text{ kHz}$			5	mΩ
I_{sc} Short Circuit Current	$V_{IN} = -35\text{V}$			0.6	A
I_{pk} Peak Output Current Average	$V_{IN} = -10\text{V}$			1.2	
Temperature Coefficient of V_O	$I_O = 5\text{mA}$			2.4	mV/°C
Input Voltage required to maintain line regulation	$I_O \leq I_{MAX}$			3.3	
				0.2	
				-7.3	V

- 1) All characteristics are measured with a capacitor across the input of 0.22μF and a capacitor across the output of 0.1μF.
- 2) All characteristics except noise voltage and ripple rejection ratio are measured using pulse techniques ($t_p \leq 10\text{ms}$, $\delta \leq 5\%$). Output voltage changes due to changes in internal temperature must be taken into account separately.
- 3) External current limiting circuitry may be required in order to maintain safe area of operation.

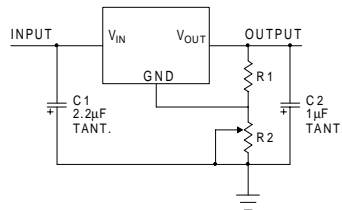
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APPLICATIONS INFORMATION



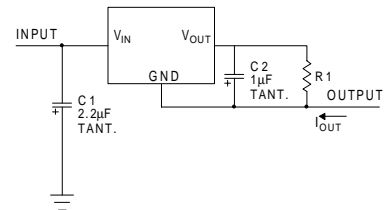
Fixed Output Regulator

- * Required if the regulator is located far from the power supply.
- ** Required for stability. 25µF electrolytic may be substituted.



Adjustable Output Regulator

$$V_{OUT} \approx V_{REG} \frac{(R1+R2)}{R1}$$



Current Regulator

$$I_{OUT} = \frac{V_{REG}}{R1} + I_Q$$