



**FUKUCOM COMPANY LTD.**

福 靈 有 限 公 司

FLAT P, 3/F., EVEREST INDUSTRIAL CENTRE, 396 KWUN TONG ROAD,  
KWUN TONG, KOWLOON, HONG KONG.

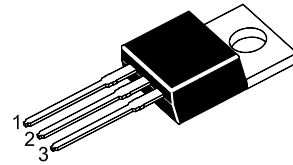
TEL: 852-2790 0314 FAX: 852-2790 0206

## ST 7805

### 3-terminal 1 A positive voltage regulator

#### Features

- Output Current up to 1 A
- Thermal Overload Protection
- Short Circuit Protection
- Output Transistor Safe Operating Area Protection



1.Input 2.Common 3.Output  
TO-220 Plastic Package

#### Absolute Maximum Ratings ( $T_a = 25\text{ }^\circ\text{C}$ )

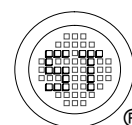
Parameter	Symbol	Value	Units
Input Voltage	$V_i$	35	V
Thermal Resistance Junction-Cases	$R_{\theta JC}$	5	$^\circ\text{C/W}$
Thermal Resistance Junction-Air	$R_{\theta JA}$	65	$^\circ\text{C/W}$
Operating Temperature Range	$T_{OPR}$	0 to + 125	$^\circ\text{C}$
Storage Temperature Range	$T_S$	- 65 to + 150	$^\circ\text{C}$

#### Electrical Characteristics

( $0\text{ }^\circ\text{C} < T_J < 125\text{ }^\circ\text{C}$ ,  $I_o = 500\text{ mA}$ ,  $V_i = 10\text{ V}$ ,  $C_i = 0.33\text{ }\mu\text{F}$ ,  $C_o = 0.1\text{ }\mu\text{F}$ , unless otherwise specified)

Parameter	Symbol	Conditions	Min.	Typ.	Max.	Unit	
Output Voltage	$V_o$	$T_J = +25\text{ }^\circ\text{C}$	4.8	5	5.2	V	
		$5\text{ mA} \leq I_o \leq 1\text{ A}$ , $P_o \leq 15\text{ W}$ $V_i = 7\text{ V to } 20\text{ V}$	4.75	5	5.25		
Line Regulation <sup>1)</sup>	Regline	$T_J = +25\text{ }^\circ\text{C}$	$V_i = 7\text{ V to } 25\text{ V}$	-	-	100	mV
			$V_i = 8\text{ V to } 12\text{ V}$	-	-	50	
Load Regulation <sup>1)</sup>	Regload	$T_J = +25\text{ }^\circ\text{C}$	$I_o = 5\text{ mA to } 1.5\text{ A}$	-	-	100	mV
			$I_o = 250\text{ mA to } 750\text{ mA}$	-	-	50	
Quiescent Current	$I_Q$	$T_J = +25\text{ }^\circ\text{C}$	-	-	8	mA	
Quiescent Current Change	$\Delta I_Q$	$I_o = 5\text{ mA to } 1\text{ A}$	-	-	0.5	mA	
		$V_i = 7\text{ V to } 25\text{ V}$	-	-	1.3		
Output Voltage Drift	$\Delta V_o / \Delta T$	$I_o = 5\text{ mA}$	-	-0.8	-	$\text{mV}/^\circ\text{C}$	
Output Noise Voltage	$V_N$	$f = 10\text{ Hz to } 100\text{ KHz}$ , $T_A = +25\text{ }^\circ\text{C}$	-	42	-	$\mu\text{V}$	
Ripple Rejection	RR	$f = 120\text{ Hz}$ , $V_i = 8\text{ V to } 18\text{ V}$	62	-	-	dB	
Dropout Voltage	$V_{Drop}$	$I_o = 1\text{ A}$ , $T_J = +25\text{ }^\circ\text{C}$	-	2	-	V	
Output Resistance	$R_o$	$f = 1\text{ KHz}$	-	15	-	$\text{m}\Omega$	
Short Circuit Current	$I_{SC}$	$V_i = 35\text{ V}$ , $T_A = +25\text{ }^\circ\text{C}$	-	230	-	mA	
Peak Current	$I_{PK}$	$T_J = +25\text{ }^\circ\text{C}$	-	2.2	-	A	

<sup>1)</sup> Load and line regulation are specified at constant junction temperature. Changes in  $V_o$  due to heating effects must be taken into account separately. Pulse testing with low duty is used.





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**Typical Performance Characteristics**

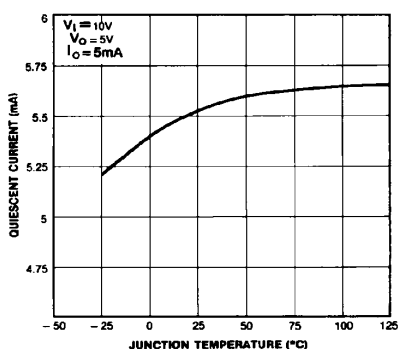


Figure 1. Quiescent Current

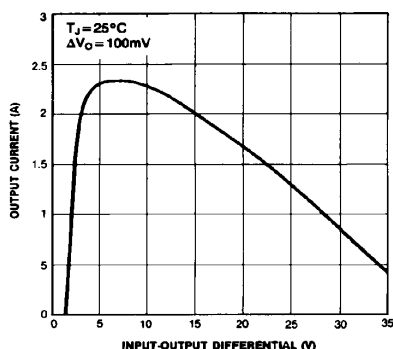


Figure 2. Peak Output Current

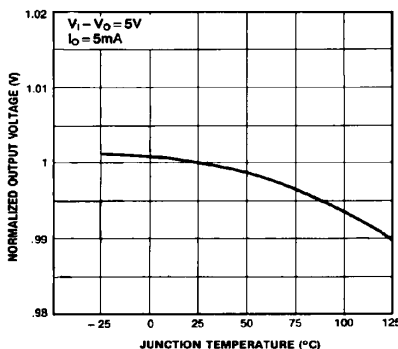


Figure 3. Output Voltage

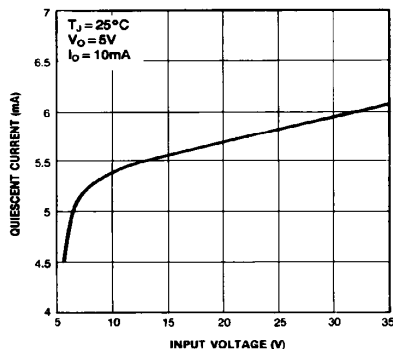
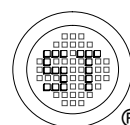


Figure 4. Quiescent Current





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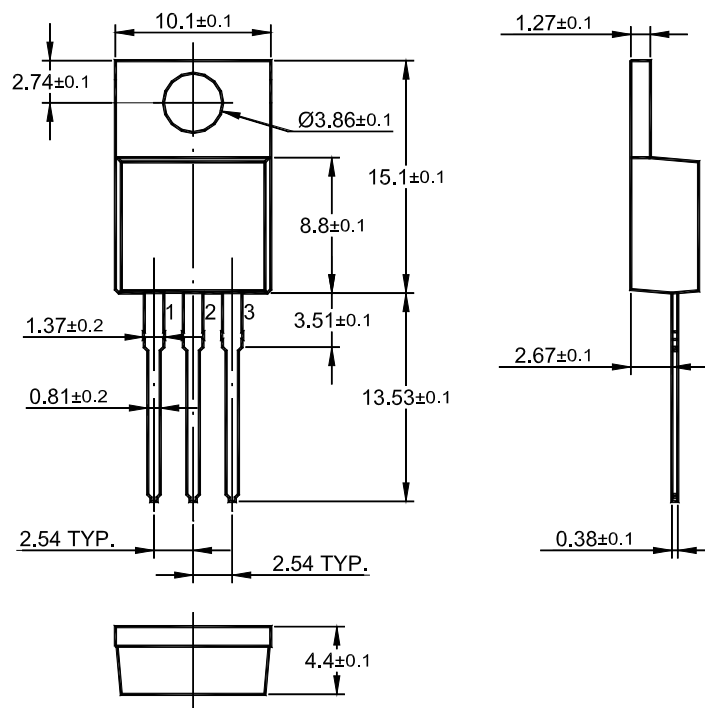
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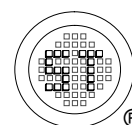
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**TO-220 PACKAGE OUTLINE**



Dimensions in mm



Dated : 21/06/2006