

D`UghjWEncapsulate Voltage Regulators

Three-terminal positive voltage regulator

FEATURE

Maximum Output Current I_o : 0.1 A

Output Voltage V_o : 5 V

Continuous Total Dissipation

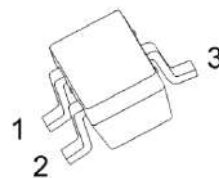
P_D : 0.25 W ($T_a = 25^\circ\text{C}$)

SOT-23

1. OUT

2. IN

3. GND



Solid dot = Green molding compound device,
if none, the normal device.

ABSOLUTE MAXIMUM RATINGS (Operating temperature range applies unless otherwise specified)

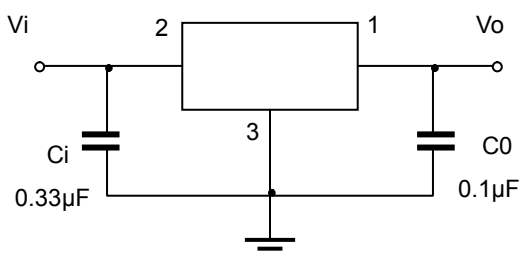
Parameter	Symbol	Value	Unit
Input Voltage	V_i	30	V
Thermal Resistance from Junction to Ambient	$R_{\theta JA}$	160	$^\circ\text{C/W}$
Operating Junction Temperature Range	T_{OPR}	-40~+125	$^\circ\text{C}$
Storage Temperature Range	T_{STG}	-65~+150	$^\circ\text{C}$

ELECTRICAL CHARACTERISTICS AT SPECIFIED VIRTUAL JUNCTION TEMPERATURE ($V_i=10\text{V}, I_o=40\text{mA}, C_i=0.33\mu\text{F}, C_o=0.1\mu\text{F}$, unless otherwise specified)

Parameter	Symbol	Test conditions	Min	Typ	Max	Unit		
Voltage Regulation		$7\text{V} \leq V_i \leq 20\text{V}, I_o = 1\text{mA} \sim 40\text{mA}$	25 $^\circ\text{C}$	4%	4.80	5.0	5.20	V
				3%	4.85	5.0	5.15	V
				2%	4.90	5.0	5.10	V
Output voltage	V_o	$7\text{V} \leq V_i \leq 20\text{V}, I_o = 1\text{mA} \sim 40\text{mA}$	0-125 $^\circ\text{C}$	4.75	5.0	5.25	V	
		$I_o = 1\text{mA} \sim 70\text{mA}$		4.75	5.0	5.25	V	
Load Regulation	ΔV_o	$I_o = 1\text{mA} \sim 100\text{mA}$	25 $^\circ\text{C}$		15	60	mV	
		$I_o = 1\text{mA} \sim 40\text{mA}$	25 $^\circ\text{C}$		8	30	mV	
Line regulation	ΔV_o	$7\text{V} \leq V_i \leq 20\text{V}$			32	150	mV	
		$8\text{V} \leq V_i \leq 20\text{V}$	25 $^\circ\text{C}$		26	100	mV	
Quiescent Current	I_q		25 $^\circ\text{C}$		3.8	6	mA	
Quiescent Current Change	ΔI_q	$8\text{V} \leq V_i \leq 20\text{V}$	0-125 $^\circ\text{C}$			1.5	mA	
		$1\text{mA} \leq I_o \leq 40\text{mA}$	0-125 $^\circ\text{C}$			0.1	mA	
Output Noise Voltage	V_N	$10\text{Hz} \leq f \leq 100\text{KHz}$	25 $^\circ\text{C}$		42	$\mu\text{V}/V_o$		
Ripple Rejection	RR	$8\text{V} \leq V_i \leq 20\text{V}, f = 120\text{Hz}$	0-125 $^\circ\text{C}$	41	49	dB		
Dropout Voltage	V_d		25 $^\circ\text{C}$		1.7	V		

* Pulse test.

TYPICAL APPLICATION



Note: Bypass capacitors are recommended for optimum stability and transient response and should be located as close as possible to the regulators.

Typical Characteristics

