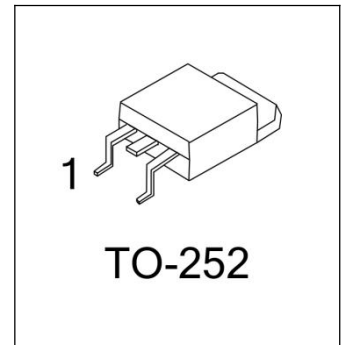


General Description

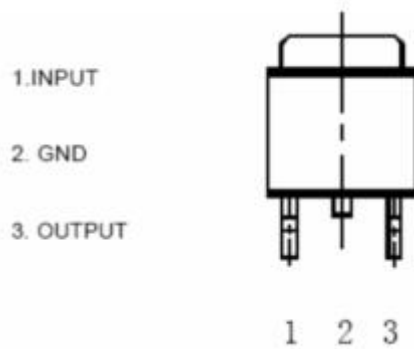
The 78M12 is monolithic fixed voltage regulator integrated circuit. They are suitable for applications that required supply current up to 0.5 A.

Features

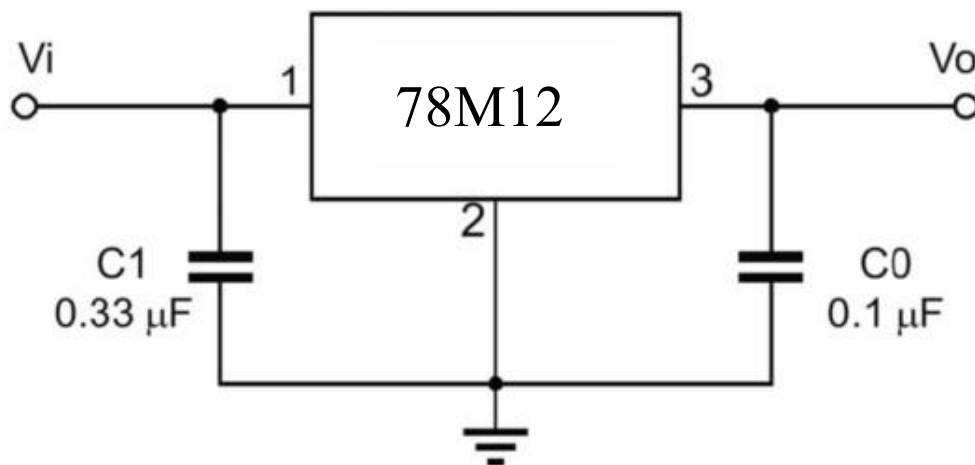
- Output Current Up To 0.5 A
- Fixed Output Voltage Of 12V Available
- Thermal Overload Shutdown Protection
- Short Circuit Current Limiting
- Output Transistor SOA Protection



Pin Connection



Typical Application Circuits





Absolute Maximum Ratings ($T_J=25^{\circ}\text{C}$, unless otherwise specified)

Characteristic	Value	Value	Unit
Input Voltage	V_i	35	V
Thermal Resistance Junction-Case	$R_{\theta JC}$	10	$^{\circ}\text{C}/\text{W}$
Thermal Resistance Junction-Air	$R_{\theta JA}$	93	$^{\circ}\text{C}/\text{W}$
Operating Temperature Range	T_{OPR}	-40~+85	$^{\circ}\text{C}$
Storage Temperature Range	T_{STG}	-55~+150	$^{\circ}\text{C}$

Electrical Characteristics

(Unless otherwise specified, $-40^{\circ}\text{C} < T_J < 85^{\circ}\text{C}$, $I_o=500\text{mA}$, $V_i=10\text{V}$, $C_i=0.33\mu\text{F}$, $C_o=0.1\mu\text{F}$)

For 78M12 (unless otherwise noted, $V_i=19\text{V}$, $I_o=350\text{mA}$, $0^{\circ}\text{C} < T_j < 125^{\circ}\text{C}$, $C_1=0.33\mu\text{F}$, $C_o=0.1\mu\text{F}$)

Characteristics	Symbol	Test Conditions	Min	Typ	Max	Unit
Output Voltage	V_o	$T_j=+25^{\circ}\text{C}$	11.5	12	12.5	V
		$14.5\text{V} \leq V_i \leq 27\text{V}, I_o=5\text{mA} \sim 0.35\text{A}$	11.4	12	12.6	
Line Regulation*	ΔV_o	$14.5\text{V} \leq V_i \leq 30\text{V}, I_o=0.2\text{A}, T_j=25^{\circ}\text{C}$		7	100	mV
		$16\text{V} \leq V_i \leq 30\text{V}, I_o=0.2\text{A}, T_j=25^{\circ}\text{C}$		3	50	
Load Regulation*	ΔV_o	$T_j=25^{\circ}\text{C}, I_o=5\text{mA} \sim 0.5\text{A}$		27	240	mV
		$T_j=25^{\circ}\text{C}, I_o=5\text{mA} \sim 200\text{mA}$		10	120	
Quiescent Current	I_Q	$T_j=+25^{\circ}\text{C}$		4.0	6.0	mA
Quiescent Current Change	ΔI_Q	$15\text{V} \leq V_i \leq 30\text{V}, I_o=0.2\text{A}$			0.8	mA
		$5\text{mA} \leq I_o \leq 0.5\text{A}$			0.5	
Output Noise Voltage	V_N	$10\text{Hz} \leq f \leq 100\text{kHz}, T_j=25^{\circ}\text{C}$		70	300	μV
Ripple Rejection	RR	$15\text{V} \leq V_i \leq 25\text{V}, f=120\text{Hz}, I_o=300\text{mA}, T_j=25^{\circ}\text{C}$	50	57		dB
Dropout Voltage	V_d	$T_j=+25^{\circ}\text{C}$		2		V
Short Circuit Current Limit	I_{SC}	$T_j=+25^{\circ}\text{C}$		0.8		A

OUTLINE DRAWING

