78M12

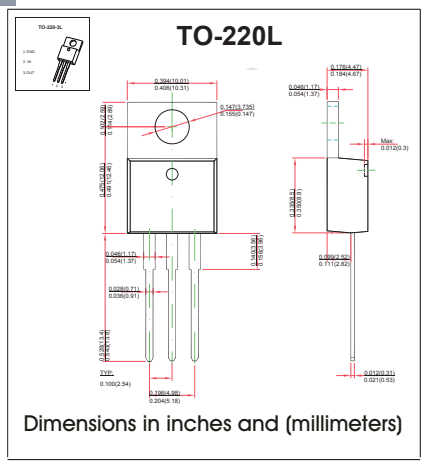
Three-terminal positive voltage regulator

FEATURES

- Maximum output current IOM: 0.5A
- Output voltage VO: 12V
- Continuous total dissipation
  PD: 1.5W (T a = 25 ℃)

MECHANICAL DATA

- Case: TO-220 Small Outline Plastic Package
- Polarity: Color band denotes cathode end
- Mounting Position: Any



MAXIMUM RATINGS AND CHARACTERISTICS

@ 25°C Ambient Temperature (unless otherwise noted)

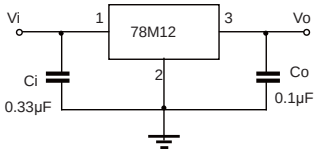
Parameter	Symbol	Value	Unit
Input Voltage	V_i	35	V
Thermal Resistance from Junction to Ambient	$R_{\theta JA}$	66.7	℃/W
Operating Junction Temperature Range	T_{OPR}	-25~+125	℃
Storage Temperature Range	T_{STG}	-65~+150	℃

ELECTRICAL CHARACTERISTICS (Vi=19V,Io=350mA, Ci=0.33μF,Co=0.1μF, unless otherwise specified)

Parameter	Symbol	Test conditions		Min	Typ	Max	Unit
Output Voltage	Vo		25℃	11.5	12	12.5	V
		14.5≤V_i≤27V, Io=5mA-350mA	-25-125℃	11.4	12	12.6	V
Load Regulation	ΔVo	Io=5mA-500mA	25℃		25	240	mV
		Io=5mA-200mA	25℃		10	120	mV
Line Regulation	ΔVo	14.5V≤V_i≤30V, Io=200mA	25℃		10	100	mV
		16V≤V_i≤30V, Io=200mA	25℃		3	50	mV
Quiescent Current	Iq		25℃		4.6	6	mA
Quiescent Current Change	ΔIq	14.5V≤V_i≤30V, Io=200mA	-25-125℃			0.8	mA
	ΔIq	5mA≤I_O≤350mA	-25-125℃			0.5	mA
Output Noise Voltage	V_N	10Hz≤f≤100KHz	25℃		75		μV/Vo
Ripple Rejection	RR	15≤V_i≤25V,f=120Hz,Io=300mA	-25-125℃	55	80		dB
Dropout Voltage	Vd	Io=350mA	25℃		2		V
Short Circuit Current	Isc	Vi=19V	25℃		240		mA
Peak Current	Ipk		25℃		0.7		A

* Pulse test.

TYPICAL APPLICATION

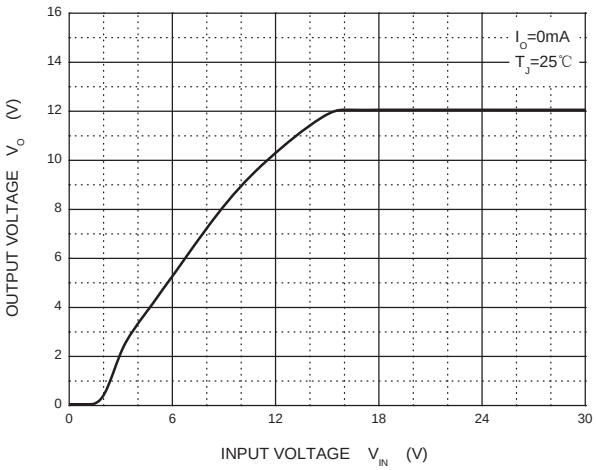


Note: Bypass capacitors are recommended for optimum stability and transient response and should be located as close as possible to the regulators.

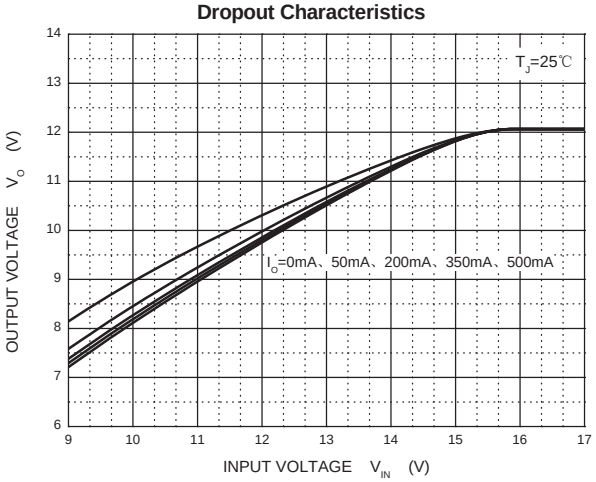
RATINGS AND CHARACTERISTIC CURVES

TYPICAL APPLICATION

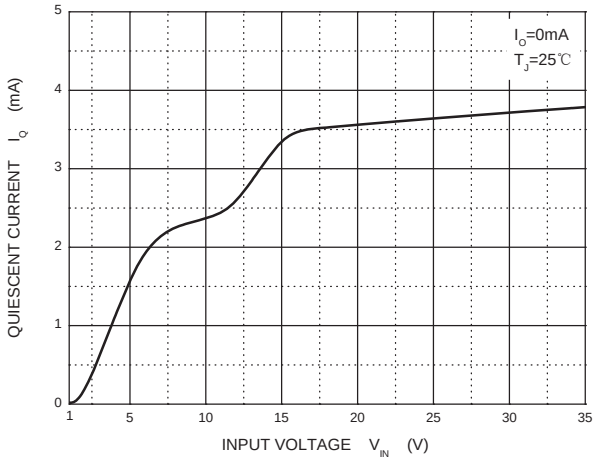
Output Characteristics



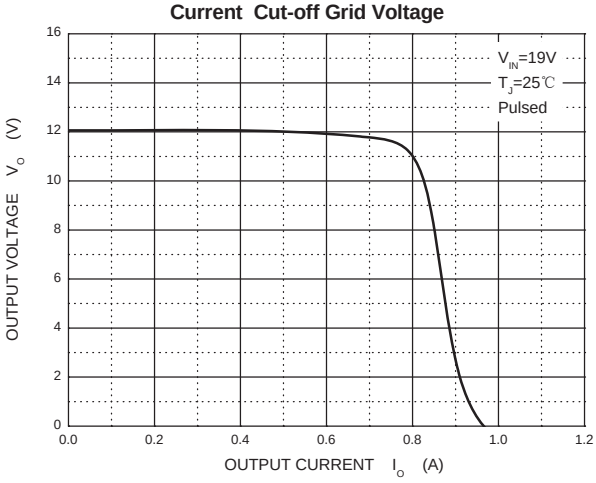
Dropout Characteristics



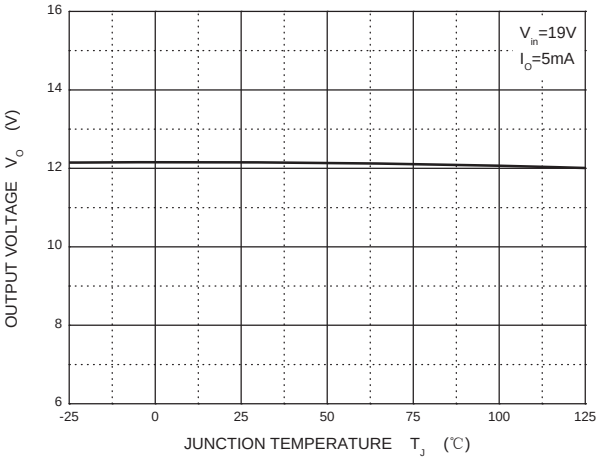
Quiescent Current vs Input Voltage



Current Cut-off Grid Voltage



Output Voltage vs Junction Temperature



Power Derating Curve