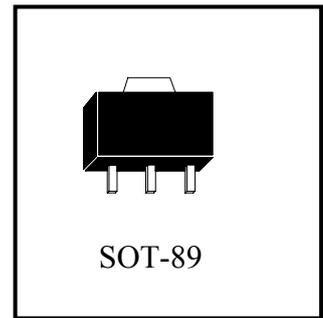


Low Current Positive Voltage Regulator

PL78L12XM3



Description

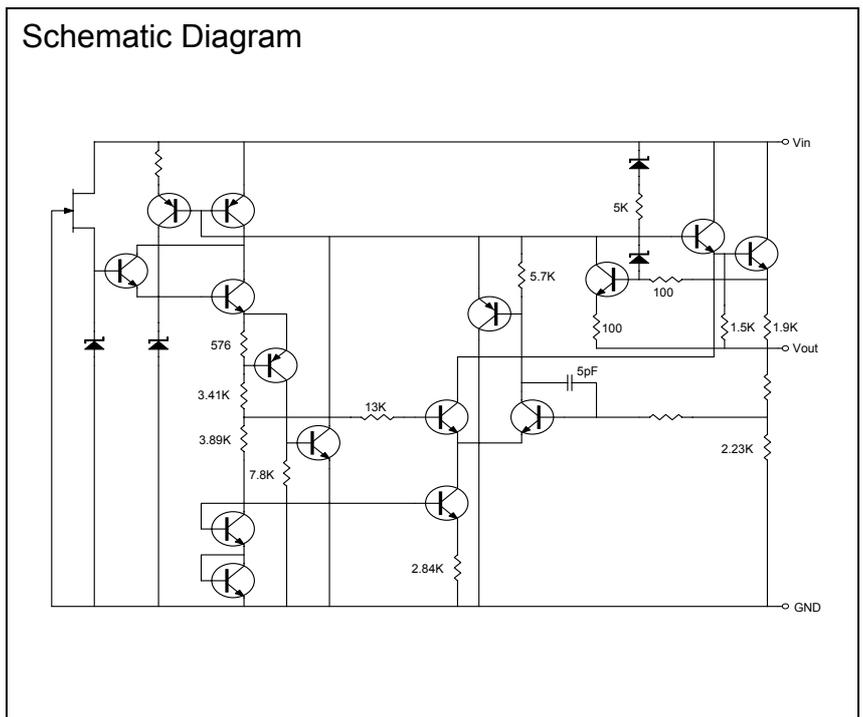
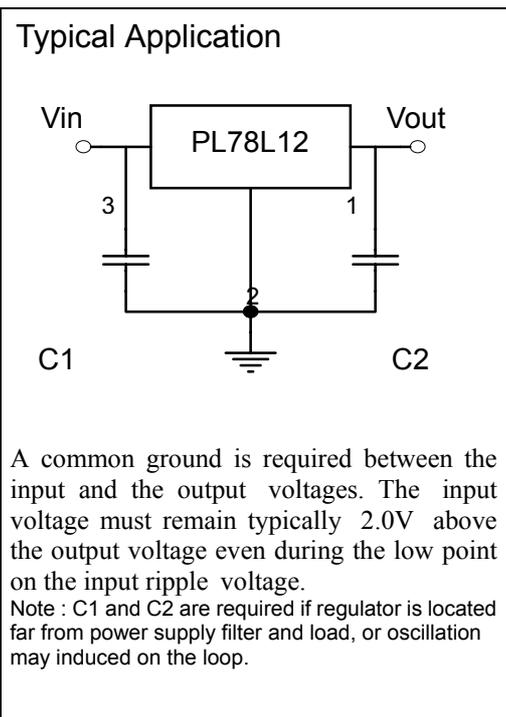
The PL78L12XM3 series of surface mount regulators are easy-to-use devices suitable for multitude of applications that require a regulated supply of up to 100mA. These regulators feature internal current limiting and thermal shutdown, making them remarkably rugged. No external components are required with the PL78L12XM3 devices in many applications. These devices offer a substantial performance advantage over the traditional zener diode resistor combination, as output impedance and quiescent current are substantially reduced.

Features:

- Wide Range Of Available, Fixed Output Voltages
- Internal Short-Circuit Current Limiting
- Internal Thermal Overload Protection
- No External Components Required

Absolute Maximum Ratings (Ta=25°C)

- Input Voltage 35 V
- Total Power Dissipation Internally limited
- Operating Temperature Range 0 °C to +125 °C
- Maximum Junction Temperature 125 °C
- Storage Temperature Range -55 °C to +150 °C
- Lead Temperature (Soldering 10S) 260 °C





Electrical Characteristics

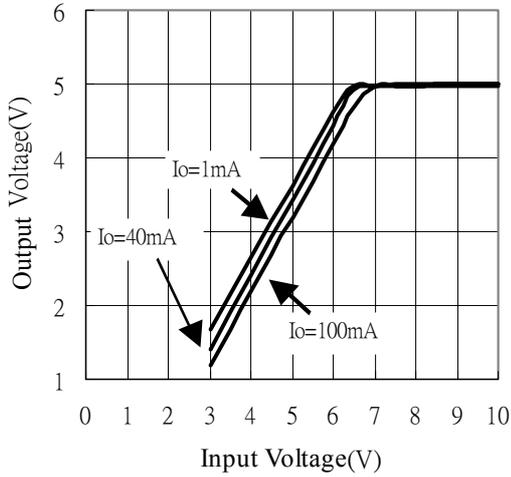
Vin=19V, Io=40mA, Tj=25°C Cin=0.33uF, Cout=0.1uF (unless otherwise noted)

Symbol	Parameter	Conditions	PL78L12A			Units
			Min	Typ	Max	
Vo	Output Voltage	Tj=25°C	11.64	12	12.36	V
		14.5V≤Vin≤27V 1mA≤Io≤40mA	11.4	12	12.6	
		1mA≤Io≤70mA	11.4	12	12.6	
ΔVo	Line Regulation	14.5V≤Vin≤27V	-	-	180	mV
		16V≤Vin≤27V	-	-	110	
ΔVo	Load Regulation	1mA≤Io≤100mA	-	-	100	mV
		1mA≤Io≤40mA	-	-	50	
IQ	Quiescent Current	Ta=25°C	-	-	5	mA
ΔIQ	Quiescent Current Change	16V≤Vin≤27V	-	-	1	mA
		1mA≤Io≤40mA	-	-	0.1	
Vn	Output Noise Voltage	Ta=25°C	-	80	-	uV
ΔVin / ΔVout	Ripple Rejection	15V≤Vin≤25V, f=120Hz	40	54	-	dB
Ipk	Peak Output Current	Ta=25°C	-	140	-	mA
VD	Dropout Voltage	Ta=25°C	-	1.7	-	V

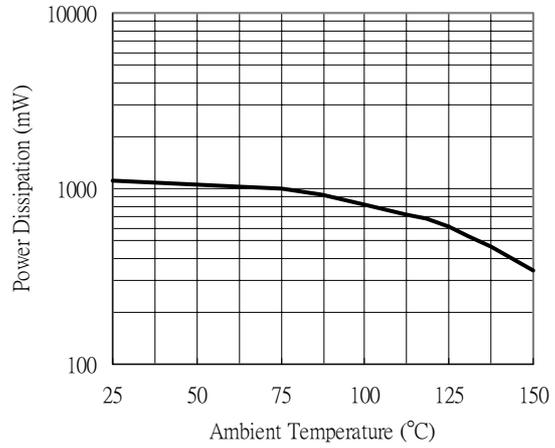
Symbol	Parameter	Conditions	PL78L12B			Units
			Min	Typ	Max	
Vo	Output Voltage	Tj=25°C	11.4	12	12.6	V
		14.5V≤Vin≤27V 1mA≤Io≤40mA	11.4	12	12.6	
		1mA≤Io≤70mA	11.4	12	12.6	
ΔVo	Line Regulation	14.5V≤Vin≤27V	-	-	180	mV
		16V≤Vin≤27V	-	-	110	
ΔVo	Load Regulation	1mA≤Io≤100mA	-	-	100	mV
		1mA≤Io≤40mA	-	-	50	
IQ	Quiescent Current	Ta=25°C	-	-	5	mA
ΔIQ	Quiescent Current Change	16V≤Vin≤27V	-	-	1	mA
		1mA≤Io≤40mA	-	-	0.1	
Vn	Output Noise Voltage	Ta=25°C	-	80	-	uV
ΔVin / ΔVout	Ripple Rejection	15V≤Vin≤25V, f=120Hz	40	54	-	dB
Ipk	Peak Output Current	Ta=25°C	-	140	-	mA
VD	Dropout Voltage	Ta=25°C	-	1.7	-	V

Characteristic Curves

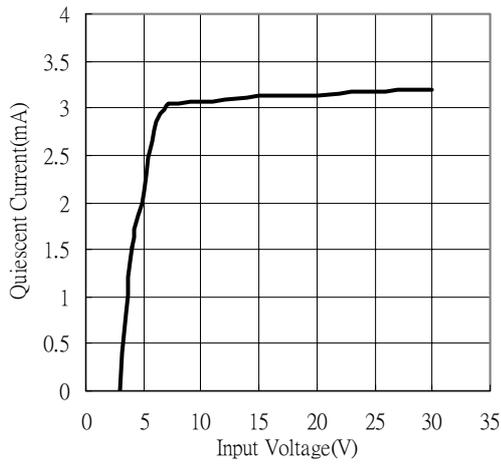
Dropout Characteristics



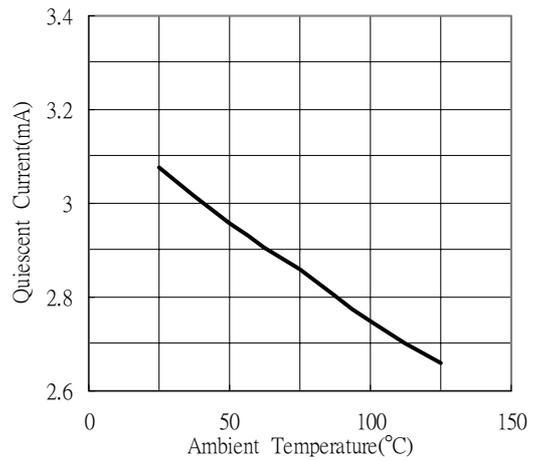
Maximum Average Power Dissipation



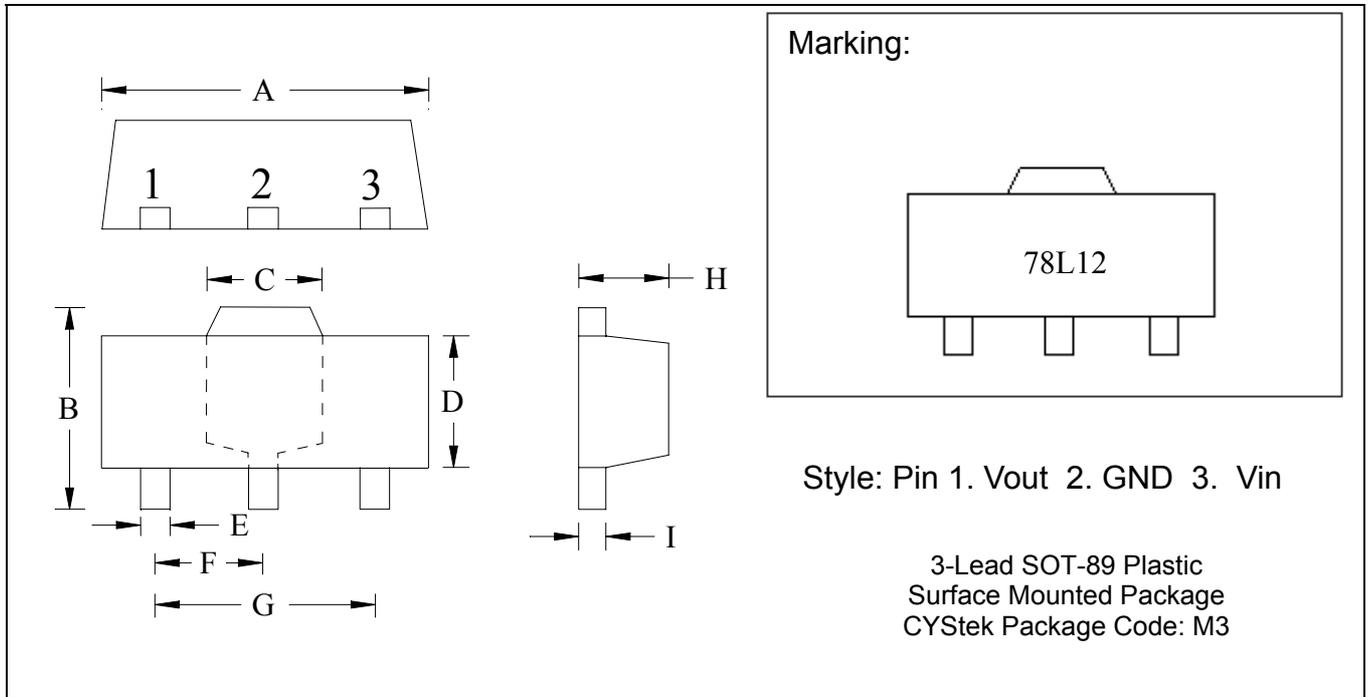
Quiescent Current



Quiescent Current



SOT-89 Dimension



*: Typical

DIM	Inches		Millimeters		DIM	Inches		Millimeters	
	Min.	Max.	Min.	Max.		Min.	Max.	Min.	Max.
A	0.1732	0.1811	4.40	4.60	F	0.0583	0.0598	1.48	1.527
B	0.1594	0.1673	4.05	4.25	G	0.1165	0.1197	2.96	3.04
C	0.0591	0.0663	1.50	1.70	H	0.0551	0.0630	1.40	1.60
D	0.0945	0.1024	2.40	2.60	I	0.0138	0.0161	0.35	0.41
E	0.01417	0.0201	0.36	0.51					

Notes: 1.Controlling dimension: millimeters.
 2.Maximum lead thickness includes lead finish thickness, and minimum lead thickness is the minimum thickness of base material.
 3.If there is any question with packing specification or packing method, please contact your local CYStek sales office.

Material:

- Lead: 42 Alloy ; solder plating
- Mold Compound: Epoxy resin family, flammability solid burning class: UL94V-0

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