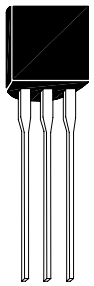
Three Terminal Low Current Negative Voltage Regulators

TO-92



LM79L12A3

Description

The LM79L12A3 is an inexpensive, easy-to-use device suitable for numerous applications requiring up to 100mA. Like the higher powered LM7900E3 series negative regulators, this device features thermal shutdown and current limiting, making it remarkably rugged. In most applications, no external components are required for operation.

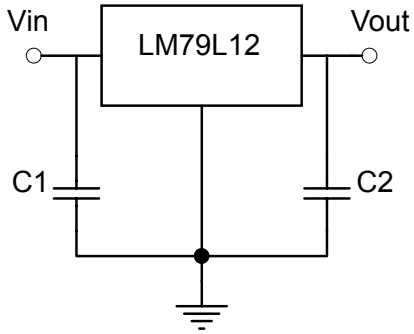
The LM79L12A3 device is useful for on-card regulation or any other application where a regulated negative voltage at a modest current level is needed. This regulator offers substantial advantage over the common resistor/zener diode approach.

- No external components required
- Internal short circuit current limiting
- Internal thermal overload protection
- Low cost
- Complementary positive regulators offered(LM78L12A3)
- Available in either ±3% or ±5% selection.

Absolute Maximum Ratings (Ta=25°C)

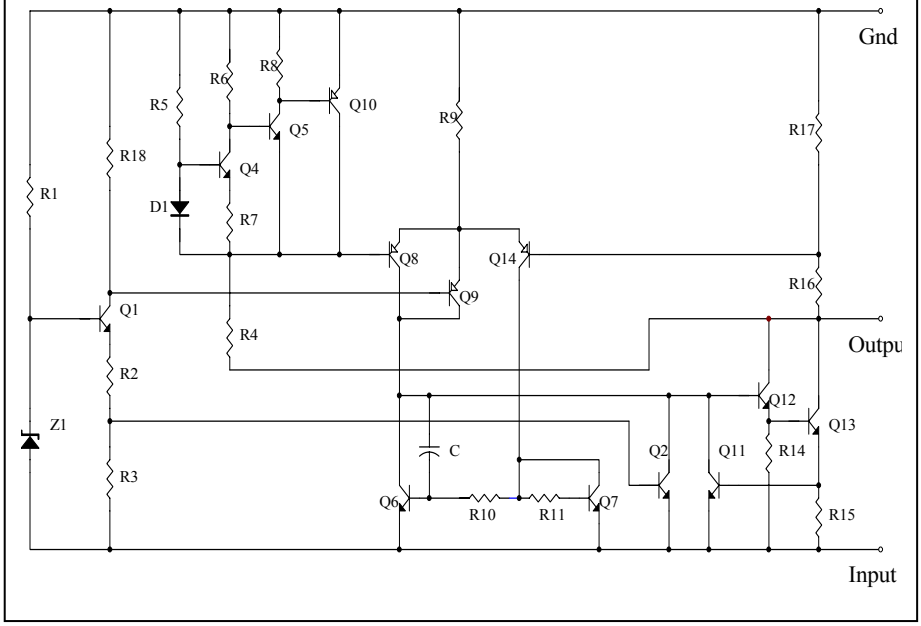
- Input Voltage…… -35V
- Total Power Dissipation……. Internally limited
- Operating Temperature Range……. 0 °C to +125 °C
- Maximum Junction Temperature…….. .+150 °C
- Storage Temperature Range…… -65 °C to +150 °C
- Lead Temperature (Soldering 10S)…….. ……... 260 °C

Typical Application



Note:
C1 and C2 are required if regulator is located far from power supply filter and load, or oscillation may induced on the loop.

Representative Schematic Diagram



Ordering Information

Device	Output Voltage Tolerance
LM79L12A3 A-rank	±3%
LM79L12A3 B-rank	±5%

Electrical Characteristics

Vin=-19V, Iout=40mA, 0°C≤Tj≤125°C, Cin=0.33μF, Cout=0.1μF (unless otherwise noted)

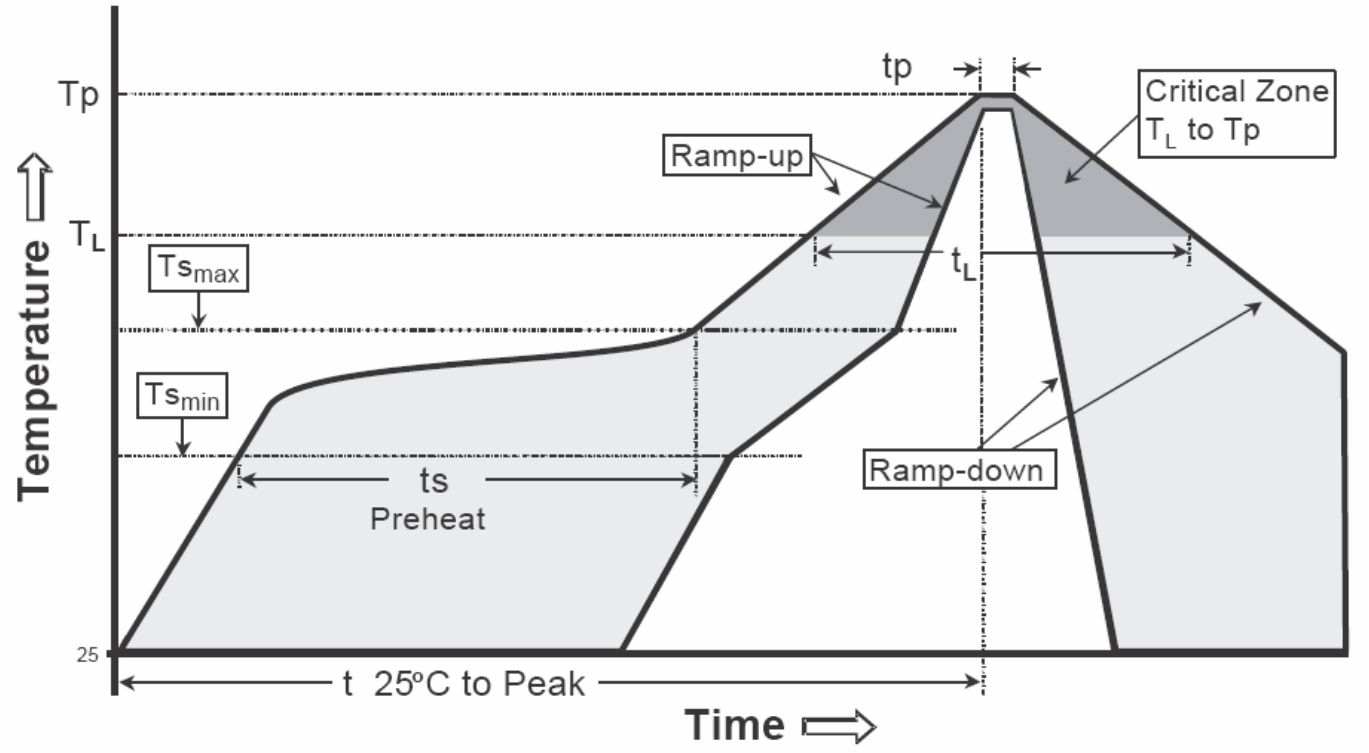
Symbol	Parameter	Conditions	LM79L12A3 A-rank			Units
			Min	Typ	Max	
Vo	Output Voltage	Tj=25°C	-11.64	-12.00	-12.36	V
		1mA≤Io≤70mA	-11.6	-	-12.4	
		1mA≤Io≤40mA and -14.5V≤Vin≤-27V	-11.6	-	-12.4	
ΔVo	Line Regulation	Tj=25°C, -14.5V≤Vin≤-27V	-	-	250	mV
		Tj=25°C, -16V≤Vin≤-27V	-	-	200	
ΔVo	Load Regulation	Tj=25°C, 1mA≤Io≤100mA	-	-	100	mV
		Tj=25°C, 1mA≤Io≤40mA	-	-	50	
IQ	Quiescent Current	Tj=25°C	-	-	6.5	mA
		Tj=125°C	-	-	6.0	
ΔIQ	Quiescent Current Change	1mA≤Io≤40mA	-	-	0.2	mA
		-16V≤Vin≤-27V	-	-	1.5	
Vn	Output Noise Voltage	Ta=25°C, 10Hz≤f≤100KHz	-	80	-	μV
ΔVin / ΔVout	Ripple Rejection	-15V≤Vin≤-25V, f=120Hz	37	42	-	dB
VD	Dropout Voltage	Tj=25°C,Iout=40mA	-	1.7	-	V

Symbol	Parameter	Conditions	LM79L05A3 B-rank			Units
			Min	Typ	Max	
Vo	Output Voltage	Tj=25°C	-11.52	-12.00	-12.48	V
		1mA≤Io≤70mA	-11.4	-	-12.6	
		1mA≤Io≤40mA and -14.5V≤Vin≤-27V	-11.4	-	-12.6	
ΔVo	Line Regulation	Tj=25°C, -14.5V≤Vin≤-27V	-	-	250	mV
		Tj=25°C, -16V≤Vin≤-27V	-	-	200	
ΔVo	Load Regulation	Tj=25°C, 1mA≤Io≤100mA	-	-	100	mV
		Tj=25°C, 1mA≤Io≤40mA	-	-	50	
IQ	Quiescent Current	Tj=25°C	-	-	6.5	mA
		Tj=125°C	-	-	6.0	
ΔIQ	Quiescent Current Change	1mA≤Io≤40mA	-	-	0.2	mA
		-16V≤Vin≤-27V	-	-	1.5	
Vn	Output Noise Voltage	Ta=25°C, 10Hz≤f≤100KHz	-	80	-	μV
ΔVin / ΔVout	Ripple Rejection	-15V≤Vin≤-25V, f=120Hz	37	42	-	dB
VD	Dropout Voltage	Tj=25°C,Iout=40mA	-	1.7	-	V

Recommended wave soldering condition

Product	Peak Temperature	Soldering Time
Pb-free devices	260 +0/-5 °C	5 +1/-1 seconds

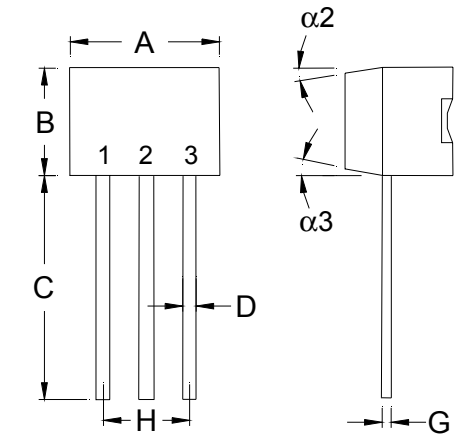
Recommended temperature profile for IR reflow

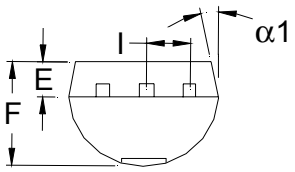


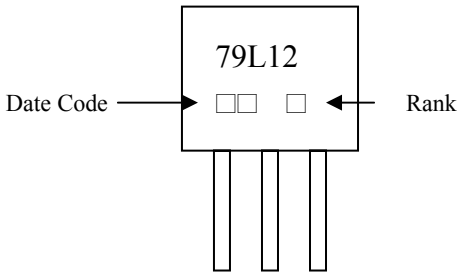
Profile feature	Sn-Pb eutectic Assembly	Pb-free Assembly
Average ramp-up rate (Tsmax to Tp)	3°C/second max.	3°C/second max.
Preheat −Temperature Min(T_S min) −Temperature Max(T_S max) −Time($t_{s\ min}$ to $t_{s\ max}$)	 100°C 150°C 60-120 seconds	 150°C 200°C 60-180 seconds
Time maintained above: −Temperature (T_L) − Time (t_L)	 183°C 60-150 seconds	 217°C 60-150 seconds
Peak Temperature(T_P)	240 +0/-5 °C	260 +0/-5 °C
Time within 5°C of actual peak temperature(tp)	10-30 seconds	20-40 seconds
Ramp down rate	6°C/second max.	6°C/second max.
Time 25 °C to peak temperature	6 minutes max.	8 minutes max.

Note : All temperatures refer to topside of the package, measured on the package body surface.

TO-92 Dimension







Style: Pin 1.GND 2.Vin 3.Vout

3-Lead TO-92 Plastic Package
CYStek Package Code: A3

*: Typical

DIM	Inches		Millimeters		DIM	Inches		Millimeters	
	Min.	Max.	Min.	Max.		Min.	Max.	Min.	Max.
A	0.1704	0.1902	4.33	4.83	G	0.0142	0.0220	0.36	0.56
B	0.1704	0.1902	4.33	4.83	H	-	*0.1000	-	*2.54
C	0.5000	-	12.70	-	I	-	*0.0500	-	*1.27
D	0.0142	0.0220	0.36	0.56	α1	-	*5°	-	*5°
E	-	*0.0500	-	*1.27	α2	-	*2°	-	*2°
F	0.1323	0.1480	3.36	3.76	α3	-	*2°	-	*2°

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: Pure tin plated.
- Mold Compound: Epoxy resin family, flammability solid burning class: UL94V-0.

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