



Continental Device India Pvt. Limited

An IATF 16949, ISO9001 and ISO 14001 Certified Company



## Positive Voltage Regulator

TO-92 Plastic-Encapsulate Regulators



TO-92

## LM78L08

TO-92

Plastic Leaded Package

RoHS Complaint

### Features

1. Maximum Output current  $I_{OM}$ : 0.1A
2. Output voltage  $V_O$ : 8V
3. Continuous total dissipation  $P_D$ : 0.625W ( $T_a = 25^\circ\text{C}$ )

### Absolute Maximum Ratings (Operating temperature range applies unless otherwise specified)

Symbol	Parameter	Value	Unit
$V_i$	Input Voltage	30	V
$T_{OPR}$	Operating Junction Temperature Range	-25 to +125	$^\circ\text{C}$
$T_{STG}$	Storage Temperature Range	-65 to +150	$^\circ\text{C}$
$R_{\theta JA}$	Thermal Resistance from Junction to Ambient	160	$^\circ\text{C/W}$

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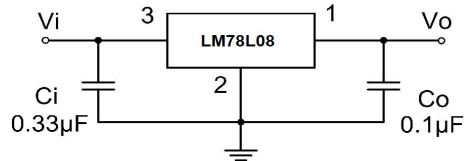


## Electrical Characteristics at Specified Virtual Junction Temperature

( $V_i=10V$ ,  $I_o=40mA$ ,  $C_i=0.33\mu F$ ,  $C_o=0.1\mu F$ , unless otherwise specified)

Symbol	Parameter	Test conditions		Min	Typ	Max	Unit
Vo	Output Voltage		25°C	7.7	8.0	8.3	V
		10.5V ≤ Vi ≤ 23V, Io = 1mA - 40mA	0-125°C	7.6	8.0	8.4	V
		Io = 1mA - 70mA		7.6	8.0	8.4	V
ΔVo	Load Regulation	Io = 1mA - 100mA	25°C		18	80	mV
		Io = 1mA - 40mA	25°C		10	40	mV
ΔVo	Line Regulation	10.5V ≤ Vi ≤ 23V	25°C		42	175	mV
		11V ≤ Vi ≤ 23V	25°C		36	125	mV
Iq	Quiescent Current		25°C		4	6	mA
ΔIq	Quiescent Current Change	11V ≤ Vi ≤ 23V	0-125°C			1.5	mA
ΔIq		1mA ≤ Io ≤ 40mA	0-125°C			0.1	mA
VN	Output Noise Voltage	f = 10Hz to 100KHz	25°C		54		μV
RR	Ripple Rejection	f = 120Hz, 13V ≤ Vi ≤ 23V	0-125°C	37	46		dB
Vd	Dropout Voltage		25°C		1.7		V

### Typical Application



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

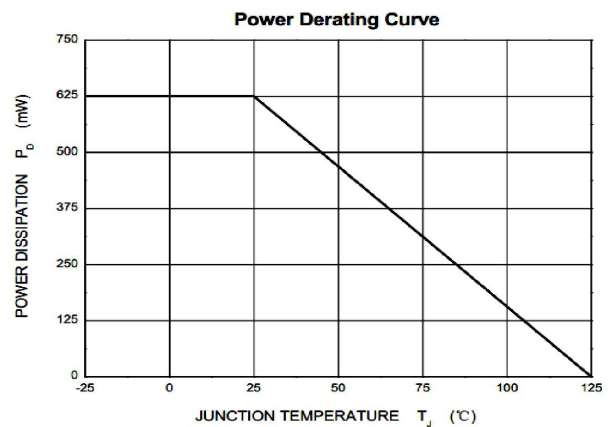
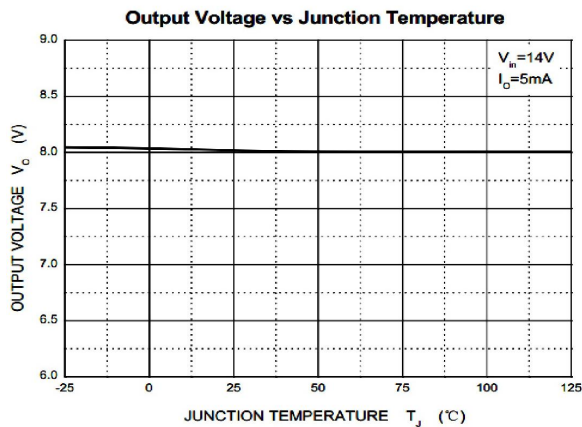
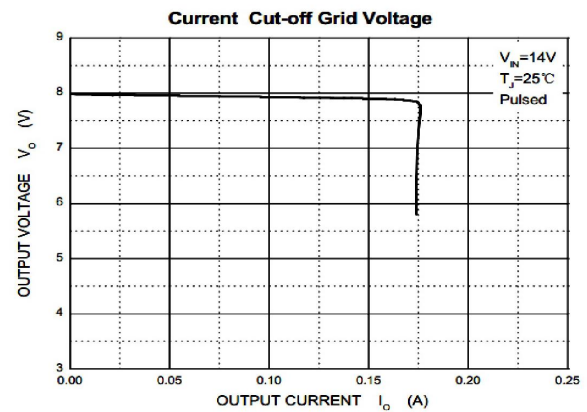
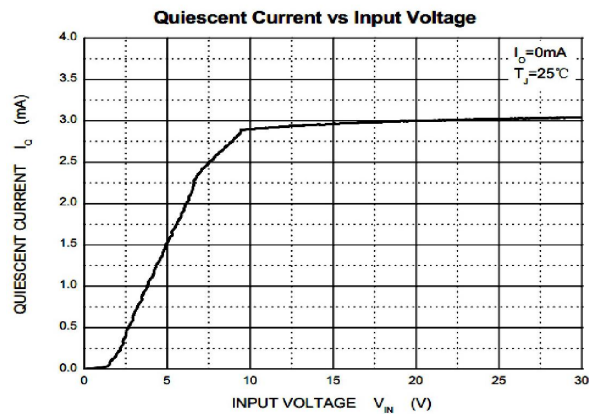
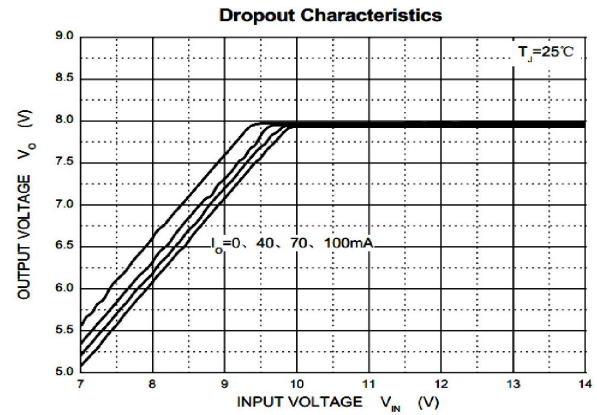
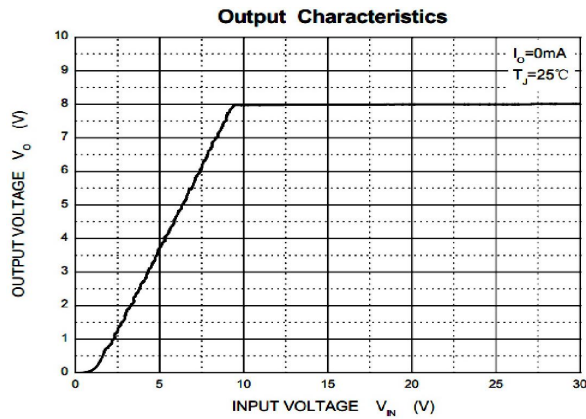


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## Typical Characteristic Curves



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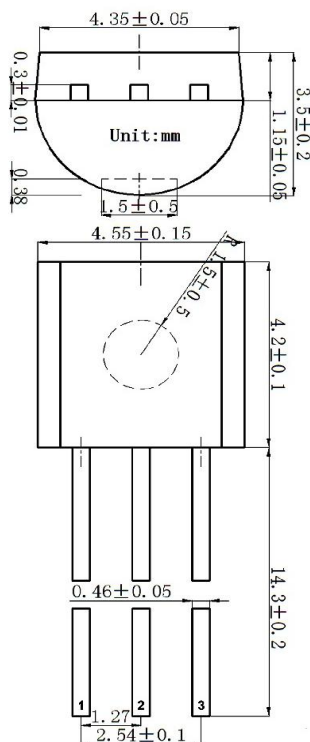


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## Package Details



**1. OUT**

**2. GND**

**3. IN**

All dimensions are in mm



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### **Recommended Product Storage Environment for Diode and Transistors**

This storage environment assumes that the Diodes and transistors are packed properly inside the original packing supplied by CDIL.

- Temperature 5 °C to 30 °C
- Humidity between 40 to 70 %RH
- Air should be clean.
- Avoid harmful gas or dust.
- Avoid outdoor exposure or storage in areas subject to rain or water spraying .
- Avoid storage in areas subject to corrosive gas or dust. Product shall not be stored in areas exposed to direct sunlight.
- Avoid rapid change of temperature.
- Avoid condensation.
- Mechanical stress such as vibration and impact shall be avoided.
- The product shall not be placed directly on the floor.
- The product shall be stored on a plane area. They should not be turned upside down. They should not be placed against the wall.

#### **Shelf Life of CDIL Products**

The shelf life of products is the period from product manufacture to shipment to customers. The product can be unconditionally shipped within this period. The period is defined as 2 years.

If products are stored longer than the shelf life of 2 years, the products shall be subjected to quality check as per CDIL quality procedure.

The products are further warranted for another one year after the date of shipment subject to the above conditions in CDIL original packing.

#### **Floor Life of CDIL Products and MSL Level**

When the products are opened from the original packing, the floor life will start. For this the following JEDEC table may be referred:

JEDEC MSL Level		
Level	Time	Condition
1	Unlimited	$\leq 30^{\circ}\text{C} / 85\% \text{ RH}$
2	1 Year	$\leq 30^{\circ}\text{C} / 60\% \text{ RH}$
2a	4 Weeks	$\leq 30^{\circ}\text{C} / 60\% \text{ RH}$
3	168 Hours	$\leq 30^{\circ}\text{C} / 60\% \text{ RH}$
4	72 Hours	$\leq 30^{\circ}\text{C} / 60\% \text{ RH}$
5	48 Hours	$\leq 30^{\circ}\text{C} / 60\% \text{ RH}$
5a	24 Hours	$\leq 30^{\circ}\text{C} / 60\% \text{ RH}$
6	Time on Label(TOL)	$\leq 30^{\circ}\text{C} / 60\% \text{ RH}$

Figure 1 Floor Life according to JEDEC MSL Level



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## Customer Notes

### Component Disposal Instructions

1. CDIL Semiconductor Devices are RoHS compliant, customers are requested to please dispose as per prevailing Environmental Legislation of their Country.
2. In Europe, please dispose as per EU Directive 2002/96/EC on Waste Electrical and Electronic Equipment (WEEE).

## Disclaimer

The product information and the selection guides facilitate selection of the CDIL's Semiconductor Device(s) best suited for application in your product(s) as per your requirement. It is recommended that you completely review our Data Sheet(s) so as to confirm that the Device(s) meet functionality parameters for your application. The information furnished in the Data Sheet and on the CDIL Web Site/CD are believed to be accurate and reliable. CDIL however, does not assume responsibility for inaccuracies or incomplete information. Furthermore, CDIL does not assume liability whatsoever, arising out of the application or use of any CDIL product; neither does it convey any license under its patent rights nor rights of others. These products are not designed for use in life saving/support appliances or systems. CDIL customers selling these products (either as individual Semiconductor Devices or incorporated in their end products), in any life saving/support appliances or systems or applications do so at their own risk and CDIL will not be responsible for any damages resulting from such sale(s).

CDIL strives for continuous improvement and reserves the right to change the specifications of its products without prior notice.



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