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SPC-PD08.DWG

REVISIONS

DCP #	REV	DESCRIPTION	DRAWN	DATE	CHECKD	DATE	APPRVD	DATE
1820	A	RELEASED	HO	3/24/05	JN	04/25/08	JN	04/25/08

Description: The 78L24 is a positive 3-terminal voltage regulator in a TO-92 type package suitable for numerous applications requiring up to 100mA. This device features thermal shutdown and current limiting making the 78L24 remarkably rugged. In most applications, no external components are required for operation. The 78L24 is useful for on-card regulation or any other application where a regulated negative voltage at a modest current level is needed. This device offers a substantial advantage over the common resistor/Zener diode approach.

Features:

- No External Components Required
- Internal Short-Circuit Current Limiting
- Internal Thermal Overload Protection

Absolute Maximum Ratings:

- Input Voltage, $V_{in} = 40V$
- Internal Power Dissipation (Note 1), $P_D =$ Internally Limited
- Operating Junction Temperature Range, $T_{Jop} = 0^{\circ}C$ to $+70^{\circ}C$
- Maximum Junction Temperature, $T_J = +125^{\circ}C$
- Storage Temperature Range, $T_{stg} = -55^{\circ}C$ to $+150^{\circ}C$
- Lead Temperature (During Soldering, 10sec.), $T_L = +300^{\circ}C$

Electrical Characteristics: ($V_{OTJ} = 0 + 125^{\circ}C$, $V_{out} = 24V$, $V_{in} = 33V$, $I_D = 40mA$, $C_{in} = 0.33\mu F$, $C_{out} = 0.1\mu F$, Note 2, unless otherwise specified)

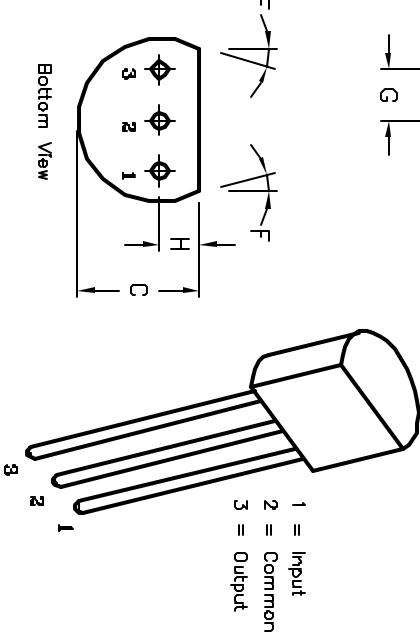
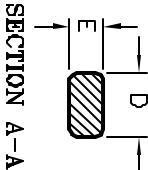
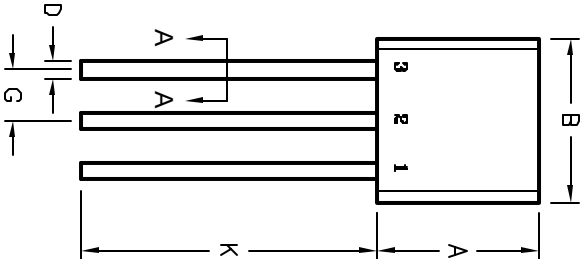
Parameter	Symbol	Test Conditions	Min	Typ	Max	Units
Output Voltage	V_O	$T_J = +25^{\circ}C$	23.0	24.0	25.0	V
		1mA $\bigcirc$ I_D $\bigcirc$ 100mA, 27V $\bigcirc$ V_{in} $\bigcirc$ 38V	22.8	24.0	25.2	V
Line Regulation	Reg_{line}	$T_J = +25^{\circ}C$, 27V $\bigcirc$ V_{in} $\bigcirc$ 38V	-	-	350	mV
Load Regulation	Reg_{load}	$T_J = +25^{\circ}C$, 1mA $\bigcirc$ I_D $\bigcirc$ 100mA	-	-	200	mV
Quiescent Current	I_q	$T_J = +125^{\circ}C$	-	-	6	mA
Quiescent Current Change	$I_{\Delta q}$	With line, 28V $\bigcirc$ V_{in} $\bigcirc$ 38V	-	-	1.5	mA
Output Noise Voltage	V_n	$T_J = +25^{\circ}C$, $f = 10Hz$ to 10kHz	-	200	-	μV
Ripple Rejection	RR	29V $\bigcirc$ V_{in} $\bigcirc$ 35V, $f = 120Hz$	31	47	-	dB
Drop Out Voltage	V_{DO}	$T_J = +25^{\circ}C$, $I_D = 40mA$	-	1.7	-	V

Notes:

- 1- Thermal resistance, junction-to-ambient is $+180^{\circ}C/W$ when mounted with 0.40 inch leads on a P.C. board, and $+160^{\circ}C/W$ when mounted with 0.25 inch leads on a P.C. board.
- 2- To ensure constant junction temperature, low duty cycle pulse testing is used.

TO-92

Dim.	Min.	Max.
A	4.32	5.33
B	4.45	5.20
C	3.18	4.19
D	0.41	0.55
E	0.35	0.50
F	S*	
G	1.14	1.40
H	1.14	1.53
K	12.70	-



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TOLERANCES:

UNLESS OTHERWISE SPECIFIED, DIMENSIONS ARE FOR REFERENCE PURPOSES ONLY.

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3/24/05

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04/25/08

APPROVED BY:

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DATE:

04/25/08

SCALE:

NTS

SHEET:

1 OF 1

DRAWING TITLE:

Voltage Regulator, Bipolar, Plastic, TO-92, Positive

SIZE

DWG. NO.

79L24

ELECTRONIC FILE

35C0957.DWG

REV

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