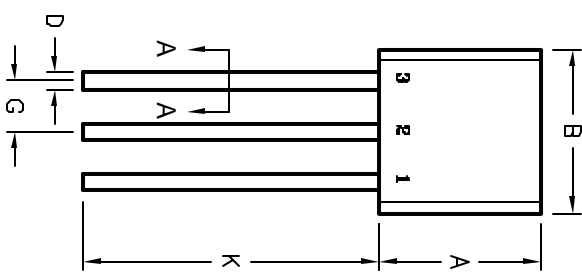


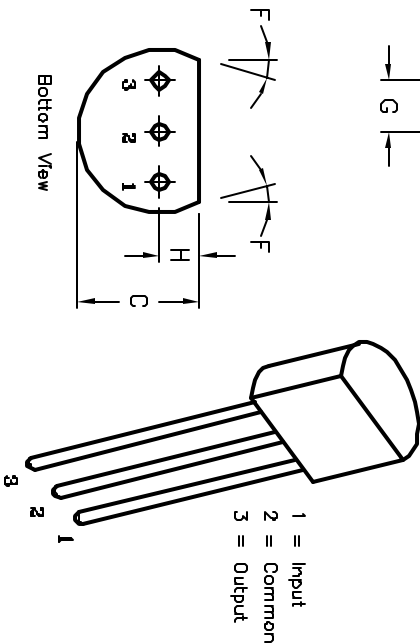
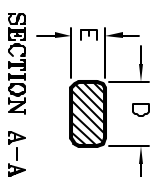
## REVISIONS

DCP #	REV	DESCRIPTION	DRAWN	DATE	CHECKD	DATE	APPRVD	DATE
1820	A	RELEASED	HO	3/24/05	JWM		JC	

## 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	-



Bottom View

- 1 = Input
- 2 = Common
- 3 = Output

**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,  $T_{jm} = +125^{\circ}C$
- Storage Temperature Range,  $T_{stg} = -55^{\circ}C$  to  $+150^{\circ}C$
- Lead Temperature (During Soldering, 10sec.),  $T_L = +300^{\circ}C$

**Electrical Characteristics:** ( $0^{\circ}T_{jO}+125^{\circ}C$ ,  $V_{out}=24V$ ,  $V_{in}= 33V$ ,  $I_D=40mA$ ,  $C_{IN}=0.33\mu F$ ,  $C_{OUT}=0.1\mu F$ , 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
Line Regulation	$Reg_{line}$	$1mA \ O \ I_D \ O \ 100mA$ , $27V \ O \ V_{IN} \ O \ 38V$	22.8	24.0	25.2	V
Load Regulation	$Reg_{load}$	$T_j = +25^{\circ}C$ , $1mA \ O \ I_D \ O \ 100mA$	-	-	200	mV
Quiescent Current	$I_Q$	$T_j = +125^{\circ}C$	-	-	6	mA
Quiescent Current Change	$I_{Qc}$	With line, $28V \ O \ V_{IN} \ O \ 38V$	-	-	1.5	mA
Output Noise Voltage	$V_n$	$T_j = +25^{\circ}C$ , $f = 10Hz$ to $10kHz$	-	200	-	$\mu V$
Ripple Rejection	RR	$29V \ O \ V_{IN} \ O \ 35V$ , $f = 120Hz$	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.

**TOLERANCES:**

UNLESS OTHERWISE SPECIFIED, DIMENSIONS ARE FOR REFERENCE PURPOSES ONLY.

**DISCLAIMER:** ALL STATEMENTS AND TECHNICAL INFORMATION CONTAINED HEREIN ARE BASED UPON INFORMATION AND/OR TESTS WE BELIEVE TO BE ACCURATE AND RELIABLE. SINCE CONDITIONS OF USE ARE BEYOND OUR CONTROL, THE USER SHALL DETERMINE THE SUITABILITY OF THE PRODUCT FOR THE INTENDED USE AND ASSUME ALL RISK AND LIABILITY WHATSOEVER IN CONNECTION THEREWITH.

DRAWN BY:	DATE:	DRAWING TITLE:	ELECTRONIC FILE	REV
HISHAM ODISH	3/24/05	Voltage Regulator, Bipolar, Plastic, TO-92, Positive	35C0953.DWG	A
CHECKED BY:	DATE:	SIZE	DWG. NO.	
JEFF MCVICHER		A	78L24	
APPROVED BY:	DATE:	SCALE:	NTS	
JOHN COLE			U.O.M.: MILLIMETERS	SHEET: 1 OF 1