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78L18 Three-terminal positive voltage regulator

TO-92 Encapsulate Three Terminal Voltage Regulator

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部门	工程部	品保部	采购部
签名			
日期			



TO-92 Encapsulate Three-terminal Voltage Regulator

78L18 Three-terminal positive voltage regulator

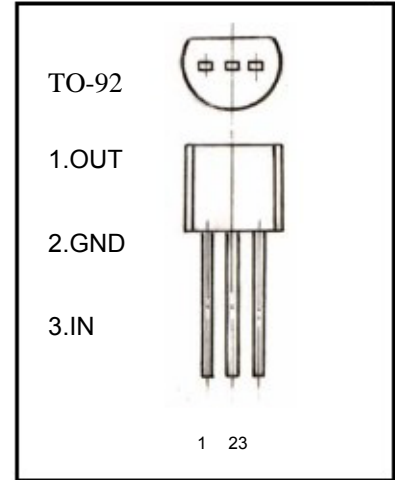
FEATURES

Maximum Output current

$I_{OM}: 0.1\text{ A}$

Output voltage

$V_o: 18\text{ V}$



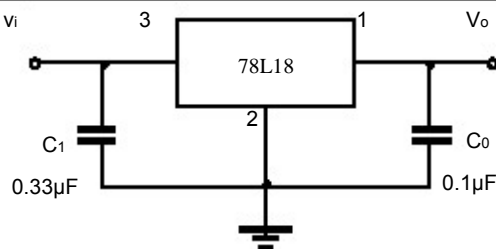
ABSOLUTE MAXIMUM RATINGS(Operating temperature range applies unless otherwise specified)

Parameter	Symbol	Value	Units
Input Voltage	V_i	35	V
Operating Junction Temperature Range	T_{OPR}	0—+125	
Storage Temperature Range	T_{STG}	-55—+150	

ELECTRICAL CHARACTERISTICS ($V_i=26\text{V}, I_o=40\text{mA}, 0 < T_j < 125^\circ\text{C}, C_1=0.33\mu\text{F}, C_o=0.1\mu\text{F}$, unless otherwise specified)

Parameter	Symbol	Test conditions	MIN	TYP	MAX	UNIT
Output voltage	V_o	$T_j=25$	17.3	18	18.7	V
		$21\text{V} \leq V_i \leq 33\text{V}, I_o=1\text{mA}-40\text{mA}$	17.1	18	18.9	V
		$21\text{V} \leq V_i \leq 33\text{V}, I_o=1\text{mA}-70\text{mA}$	17.1	18	18.9	V (note)
Load Regulation	V_o	$T_j=25^\circ\text{C}, I_o=1\text{mA}-100\text{mA}$		27	180	mV
		$T_j=25^\circ\text{C}, I_o=1\text{mA}-40\text{mA}$		19	90	mV
Line regulation	V_o	$20.5\text{V} \leq V_i \leq 33\text{V}, T_j=25$		70	360	mV
		$22\text{V} \leq V_i \leq 33\text{V}, T_j=25$		60	300	mV
Quiescent Current	I_q	25	4.7	6.5	mA	
Quiescent Current Change	I_q	$21\text{V} \leq V_i \leq 33\text{V}$			1.5	mA
		$1\text{mA} \leq I_o \leq 40\text{mA}$			0.1	mA
Output Noise Voltage	V_N	$10\text{Hz} \leq f \leq 100\text{KHz}$		89		μV
Ripple Rejection	RR	$23\text{V} \leq V_i \leq 33\text{V}, f=120\text{Hz}, T_j=25$	32	36		dB
Dropout Voltage	V_d	$T_j=25$		1.7		V

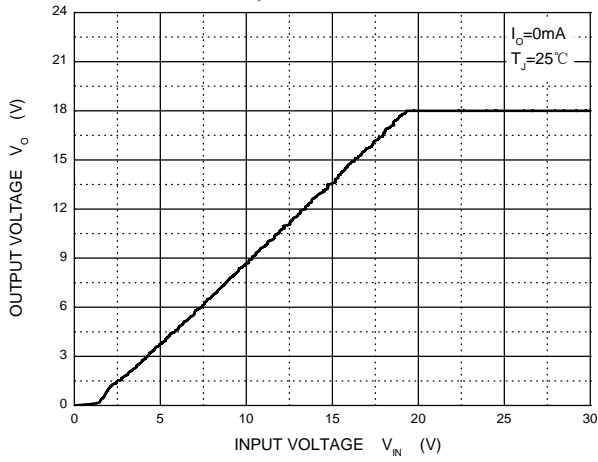
TYPICAL APPLICATION



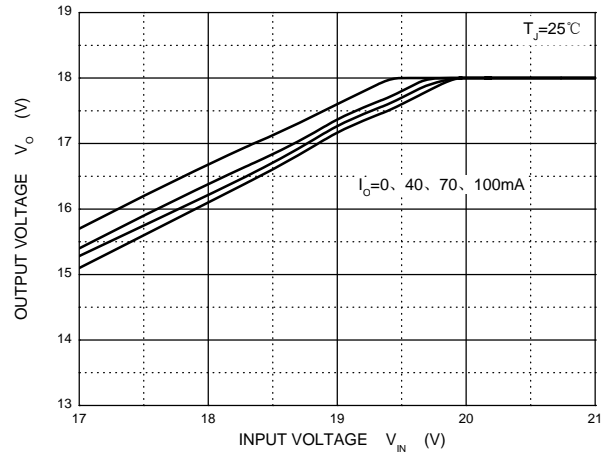
Note : Bypass capacitors are recommended for optimum stability and transient response and should be located as close as possible to the regulators.

Typical Characteristics

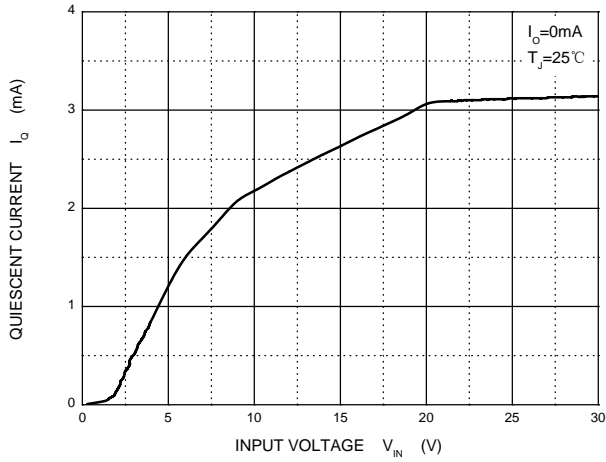
Output Characteristics



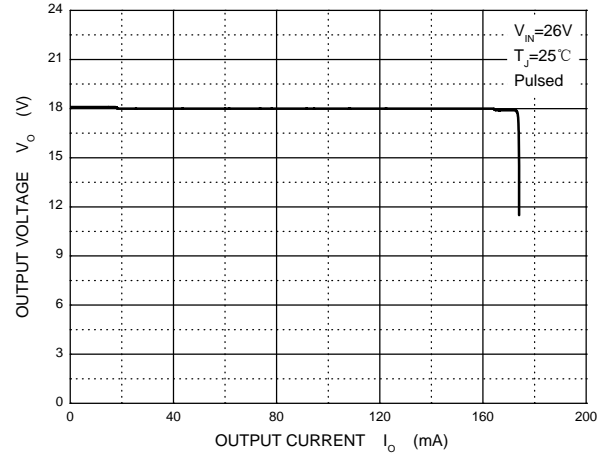
Dropout Characteristics



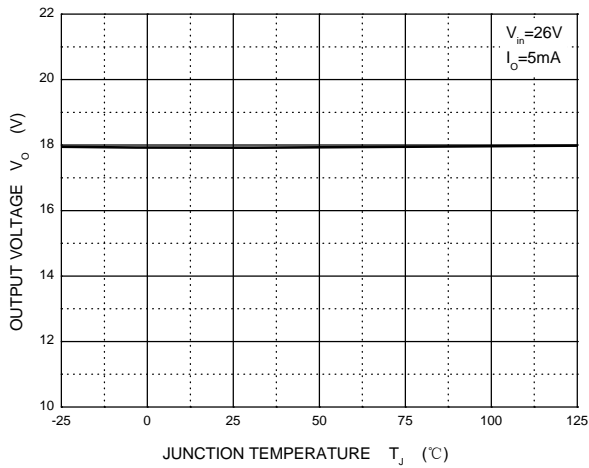
Quiescent Current vs Input Voltage



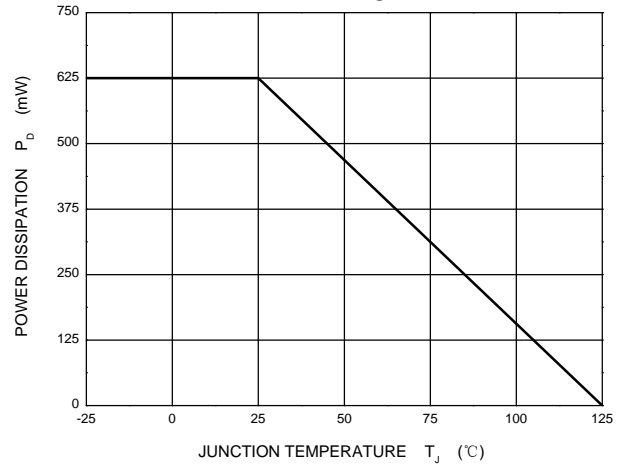
Current Cut-off Grid Voltage



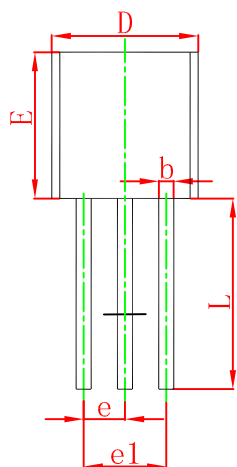
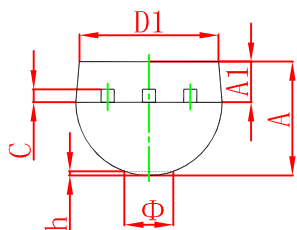
Output Voltage vs Junction Temperature



Power Derating Curve

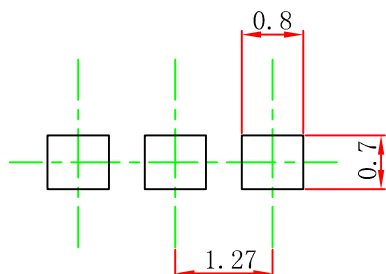


TO-92 Package Outline Dimensions



Symbol	Dimensions In Millimeters		Dimensions In Inches	
	Min	Max	Min	Max
A	3.300	3.700	0.130	0.146
A1	1.100	1.400	0.043	0.055
b	0.380	0.550	0.015	0.022
c	0.360	0.510	0.014	0.020
D	4.400	4.700	0.173	0.185
D1	3.430		0.135	
E	4.300	4.700	0.169	0.185
e	1.270 TYP		0.050 TYP	
e1	2.440	2.640	0.096	0.104
L	14.100	14.500	0.555	0.571
Φ		1.600		0.063
h	0.000	0.380	0.000	0.015

TO-92 Suggested Pad Layout



Note:

1. Controlling dimension: in millimeters.
2. General tolerance: $\pm 0.05\text{mm}$.
3. The pad layout is for reference purposes only.