

90V Linear LED Driver



General Description

The FP7170 is an adjustable high voltage constant current LED driver. It can operate with power supply from 5V to 90V. The current flow from VA pin to VB pin is regulated with current value set by an external sense resistor R_{SENSE} . To avoid FP7170 from overheating when VA pin to VB pin voltage is large, one extra resistor R_{PWR} connected between VA pin and IS pin is suggested to share the power dissipation. The FP7170 is available in SOT223 3 pins or TO92 package.

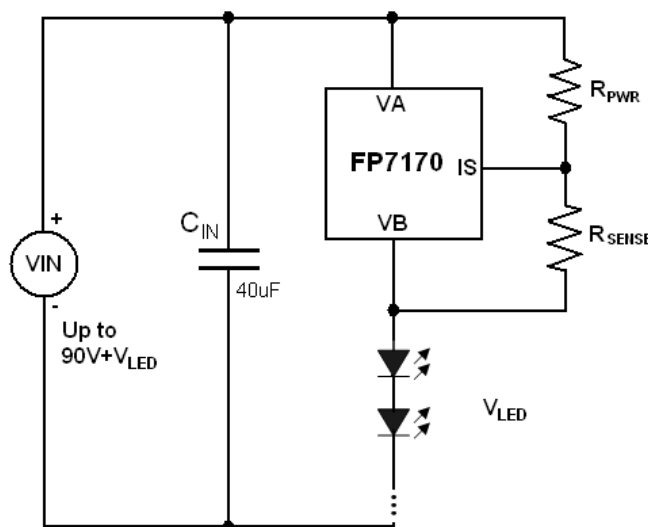
Features

- Wide Operation Range: From 5V to 90V(V_A to V_B)
- Programmable LED current Through External Resistor Between VA and VB Pin
- Adjustable Power Dissipation with External Resistor Between VA and IS PIN
- Parallel Connected is Allowed
- SOT223 3 pins, TO92 Package

Applications

- Constant Current Source
- Constant Current Sink
- LED Lighting

Typical Application Circuit

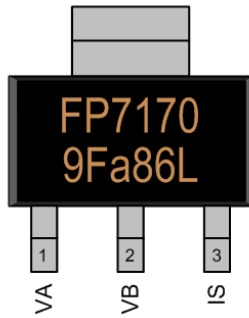


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Pin Descriptions

SOT223

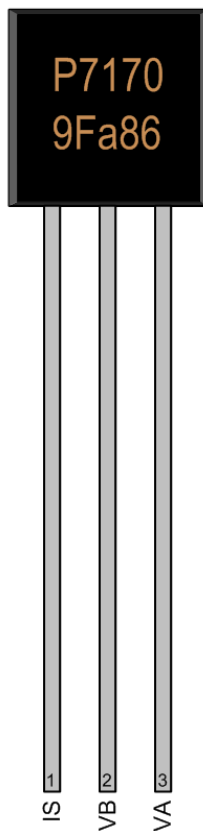
Top View



Name	No.	I / O	Description
VA	1	P	IC Power Supply
VB	2	P	IC Ground
IS	3	I	Current Sense Resistor Connected

TO92

Top View



Name	No.	I / O	Description
IS	1	I	Current Sense Resistor Connected
VB	2	P	IC Ground
VA	3	P	IC Power Supply

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Ordering Information

Part Number	Operating Temperature	Package	MOQ	Description
FP7170BR-G1	-40°C ~ 85°C	SOT223	2500EA	Tape & Reel
FP7170H-G1	-40°C ~ 85°C	TO92	2000EA	

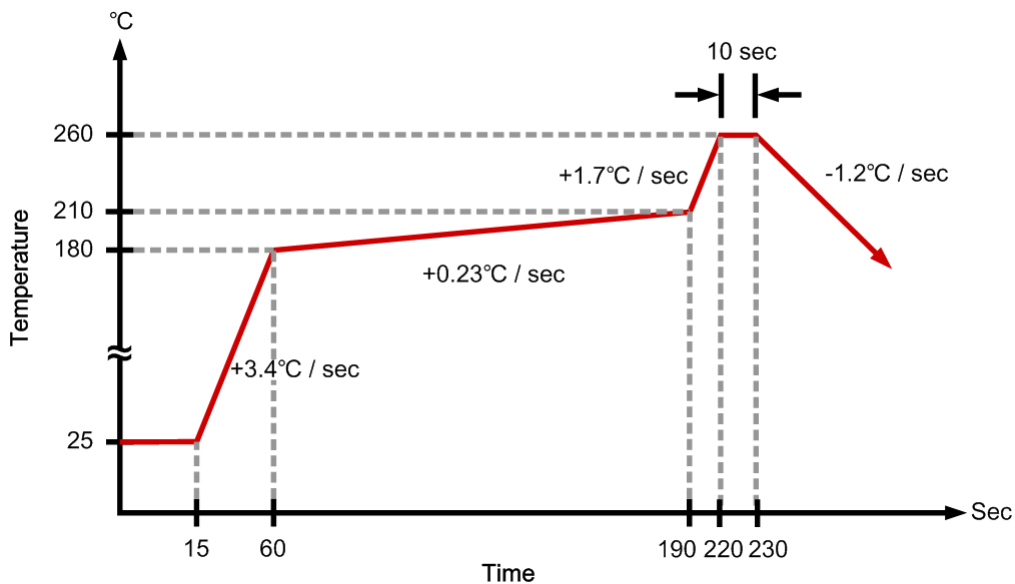
Absolute Maximum Ratings

Parameter	Symbol	Conditions	Min.	Typ.	Max.	Unit
Supply Voltage	V_{A-B}				90	V
Thermal Resistance (Note1)	θ_{JA}	SOT223			+70	°C / W
		TO92			+170	°C / W
Junction Temperature	T_J				+150	°C
Operating Temperature	T_{OP}		-45		+125	°C
Storage Temperature	T_{ST}		-65		+150	°C
Lead Temperature		(soldering, 10 sec)			+260	°C

Note1:

θ_{JA} is measured in the natural convection at $T_A=25^\circ\text{C}$ on a low effective thermal conductivity test board of JEDEC 51-3 thermal measurement standard.

IR Re-flow Soldering Curve



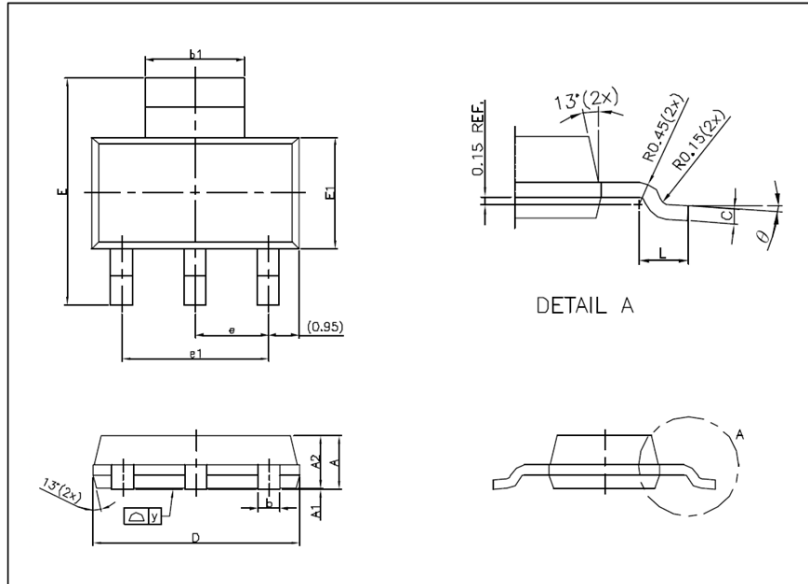
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DC Electrical Characteristics (Test Conditions: $T_A=25^{\circ}\text{C}$ unless otherwise stated)

Parameter	Symbol	Conditions	Min.	Typ.	Max.	Unit
Input voltage	V_{A-B}		5		90	V
Current Regulation	I_{A-B}	$V_{A-B}=5\sim 90\text{V}, I_{\text{SET}}=20\text{mA}$	-10		+10	%
Current sense voltage	V_{IS}			0.66		V

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Package Outline
SOT223



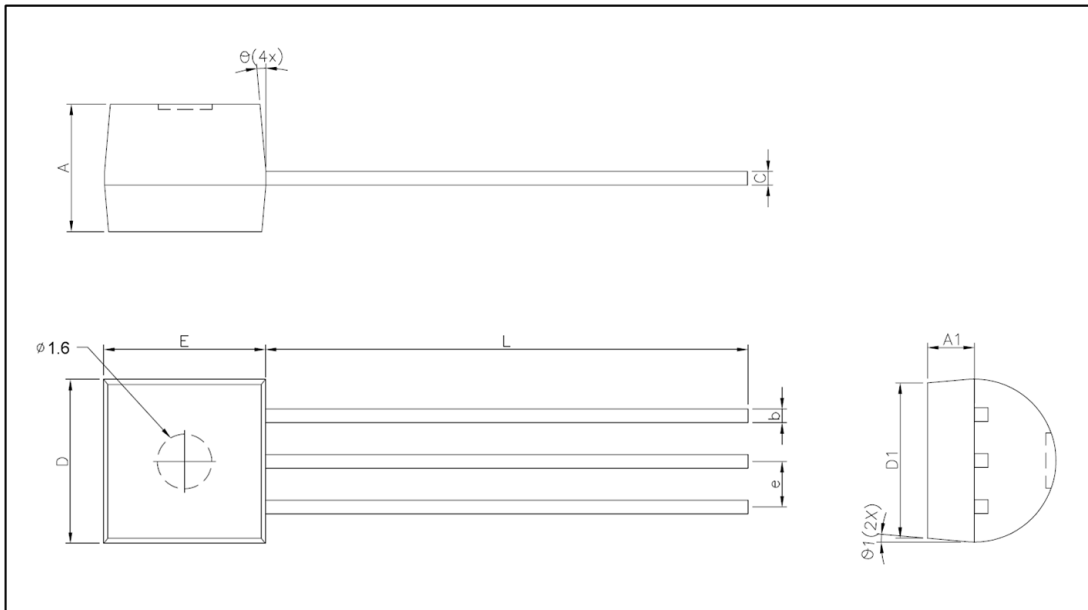
Symbols	Min. (mm)	Max. (mm)
A		1.800
A1	0.020	0.100
A2	1.550	1.650
b	0.600	0.790
b1	2.900	3.100
C	0.275	0.335
D	6.300	6.700
E	6.750	7.250
E1	3.300	3.700
e	2.300	
e1	4.600	
L	0.900	
y		0.080
θ°	0°	8°

Unit: mm

Note:

1. Dimension "D" does not include molding flash, protrusions or gate burrs.
2. Dimension "E1" does not include inter-lead flash or protrusions.

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TO92

Unit: mm

Symbols	Min. (mm)	Max. (mm)
A	3.450	3.660
A1	1.220	1.370
b	0.380	
C	0.380	
D	4.270	4.780
D1	4.140	4.450
E	4.320	4.830
L	12.980	14.000
e	1.270 REF	
θ	5° REF	
$\theta1$	5° REF	

Note:

1. Dimension "D" does not include molding flash, protrusions or gate burrs.
2. Dimension "E" does not include inter-lead flash, protrusions.

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