

*1-Channel 350V, 50mA/80mA Constant Current DC LED Driver*

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## 1 Features

- 50mA or 80mA +/- 5% constant current output
- Operation voltage (VA-VB), 7.5 ~ 350V
- Temperature compensated
- Can be paralleled for higher current

## 2 Description

The MG39U103 is a constant current LED driver designed for high voltage DC power applications. It delivers 50 mA +/- 5% or 80mA +/- 5% output current at an input range 7.5V ~ 350V. With state-of-the-art design skill, MG39U103 is suitable to drive LED lamp through high voltage DC power directly. No external components required.

The device is available in TO-252 package or dice form.

## 3 Order Information

	MG39U103AH-050	MG39U103AKB2-050	MG39U103AH-080	MG39U103AKB2-080
Package	DICE	TO-252	DICE	TO-252
Current	50mA	50mA	80mA	80mA

## 4 Application Field

DC LED line bar driver

DC LED lamp driver

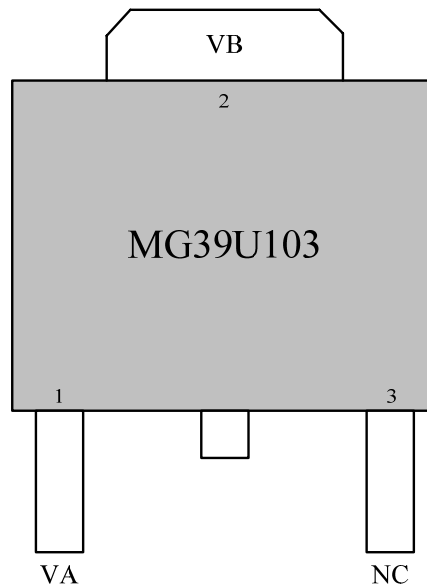
Decorative lighting

## 5 Pin Description

### 5.1 Pin Definition

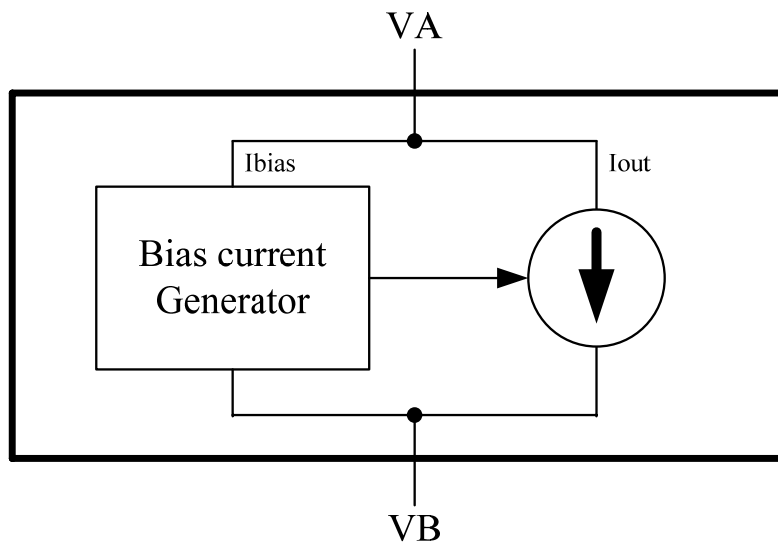
Pin No.	Pin Name	Description
1	VA	Positive power input pin
2	VB	Negative power input pin
3	NC	No connection

### 5.2 Pin Configuration



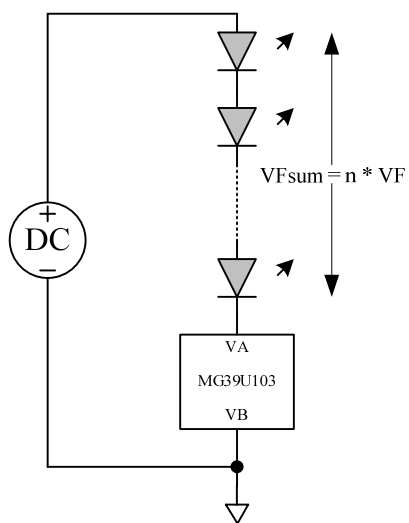
TO-252

## 6 Block Diagram

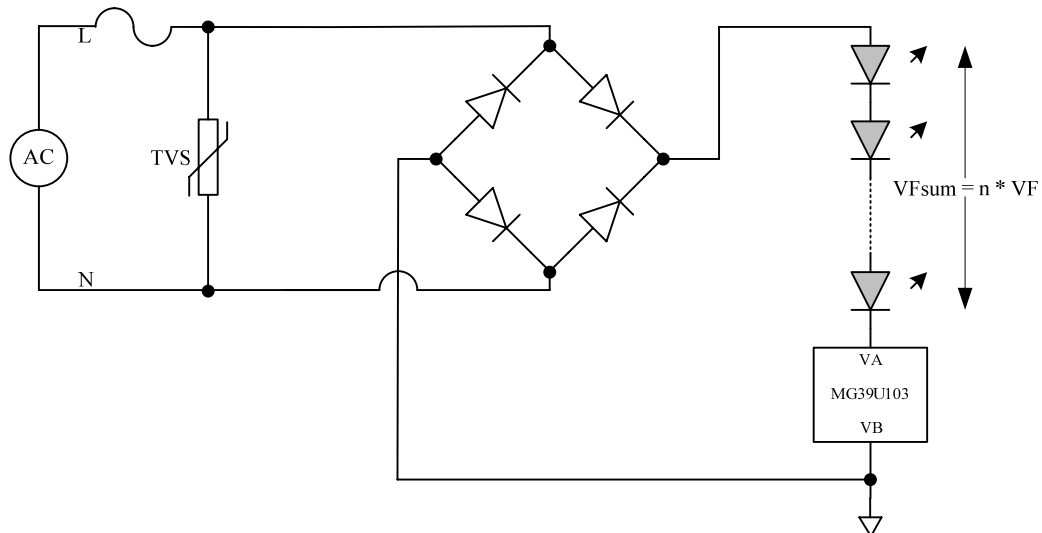


## 7 Application Circuit

Example 1



Example 2



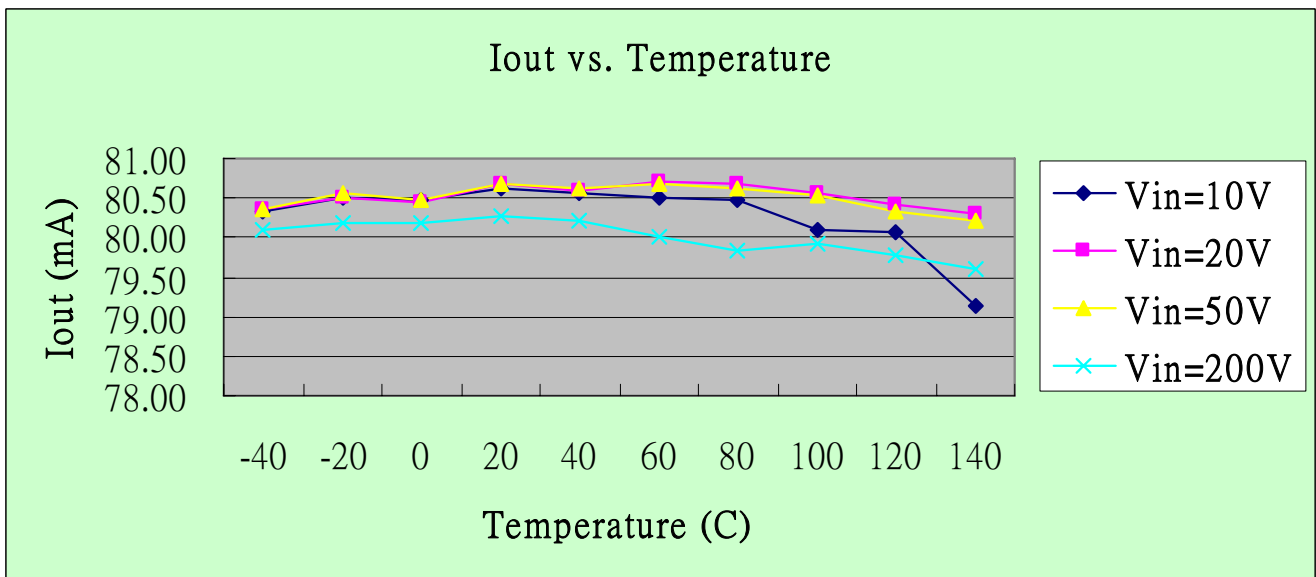
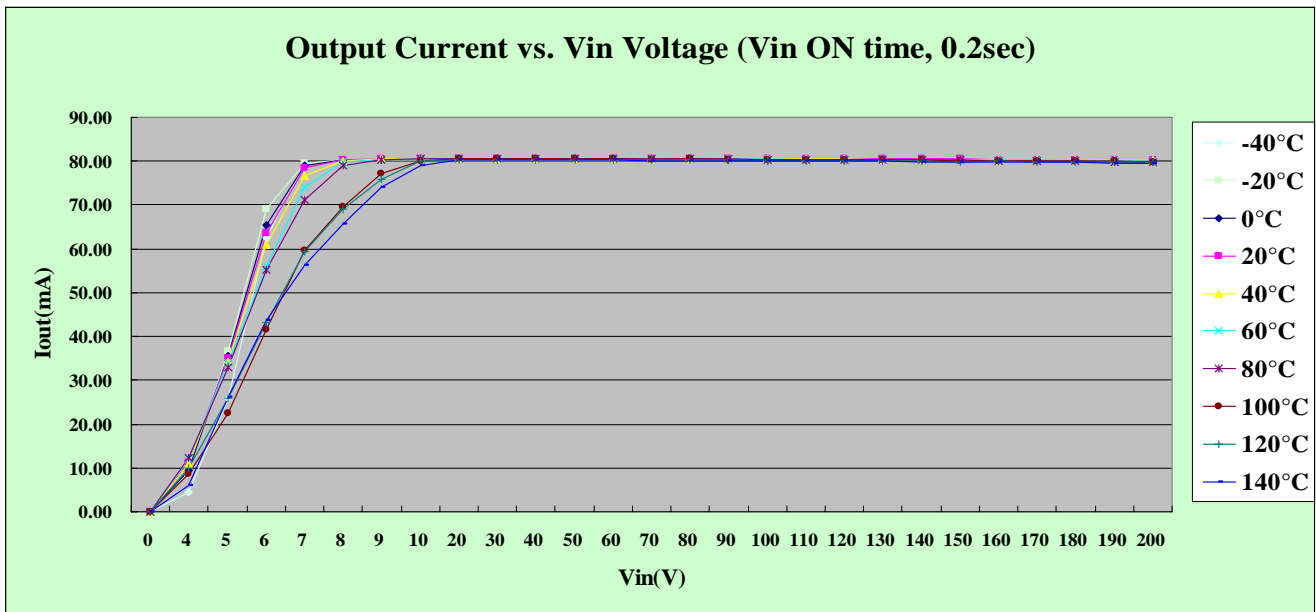
## 8 Absolute Maximum Rating

Parameter	Rating	Unit
Supply Voltage	-0.5 to +400	V
Operating temperature	-40 to +125	°C
Storage temperature	-55 to +155	°C

PS: Operating temperature is strongly related to the power consumption of IC.

## 9 Electrical Characteristics

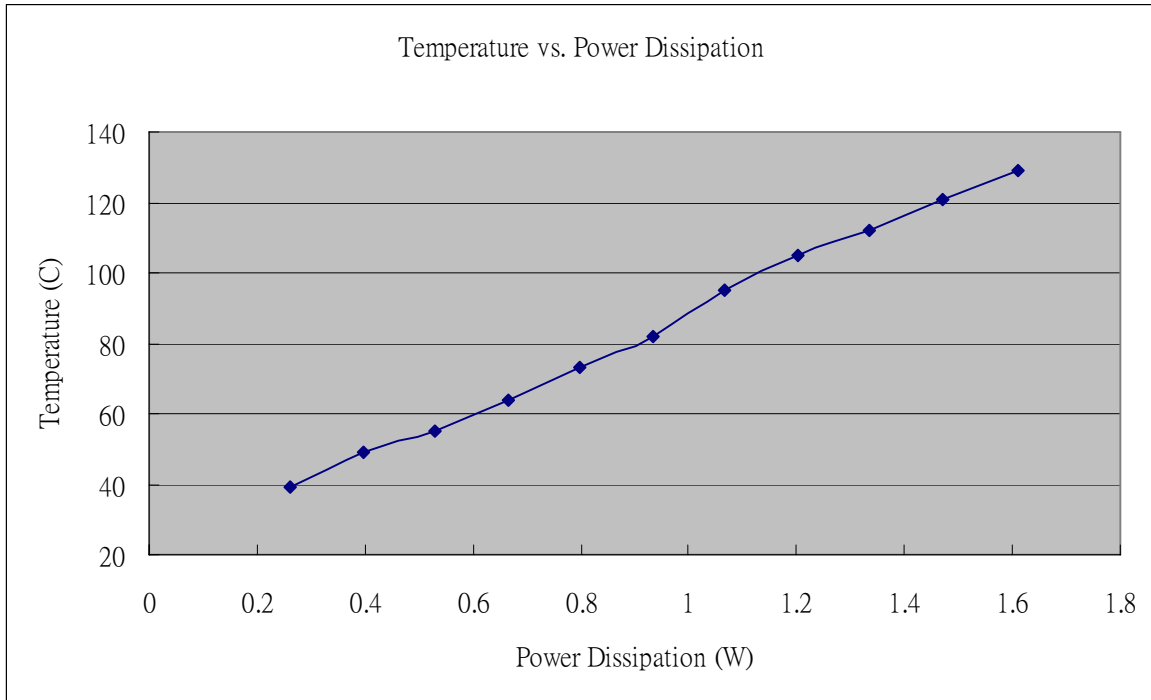
Parameter	Sym.	Conditions	Min.	Typ.	Max.	Unit
Input Voltage	Vop	VA-VB	7.5	-	350	V
Output current	Iout	All input range, -050	76	80	84	mA
		All input range, -080	47.5	50	52.5	mA
Idd temperature coefficient	$\Delta I_{out}/\Delta T$	Junction Temperature: -40 ~ +125°C	-	0.01	-	%/°C
VA applied ON time	Ton	Output current = 0.9*Iout	-	-	100	us
VA removed off time	Toff	Output current = 0.1*Iout	-	-	100	us



## 10 Application information

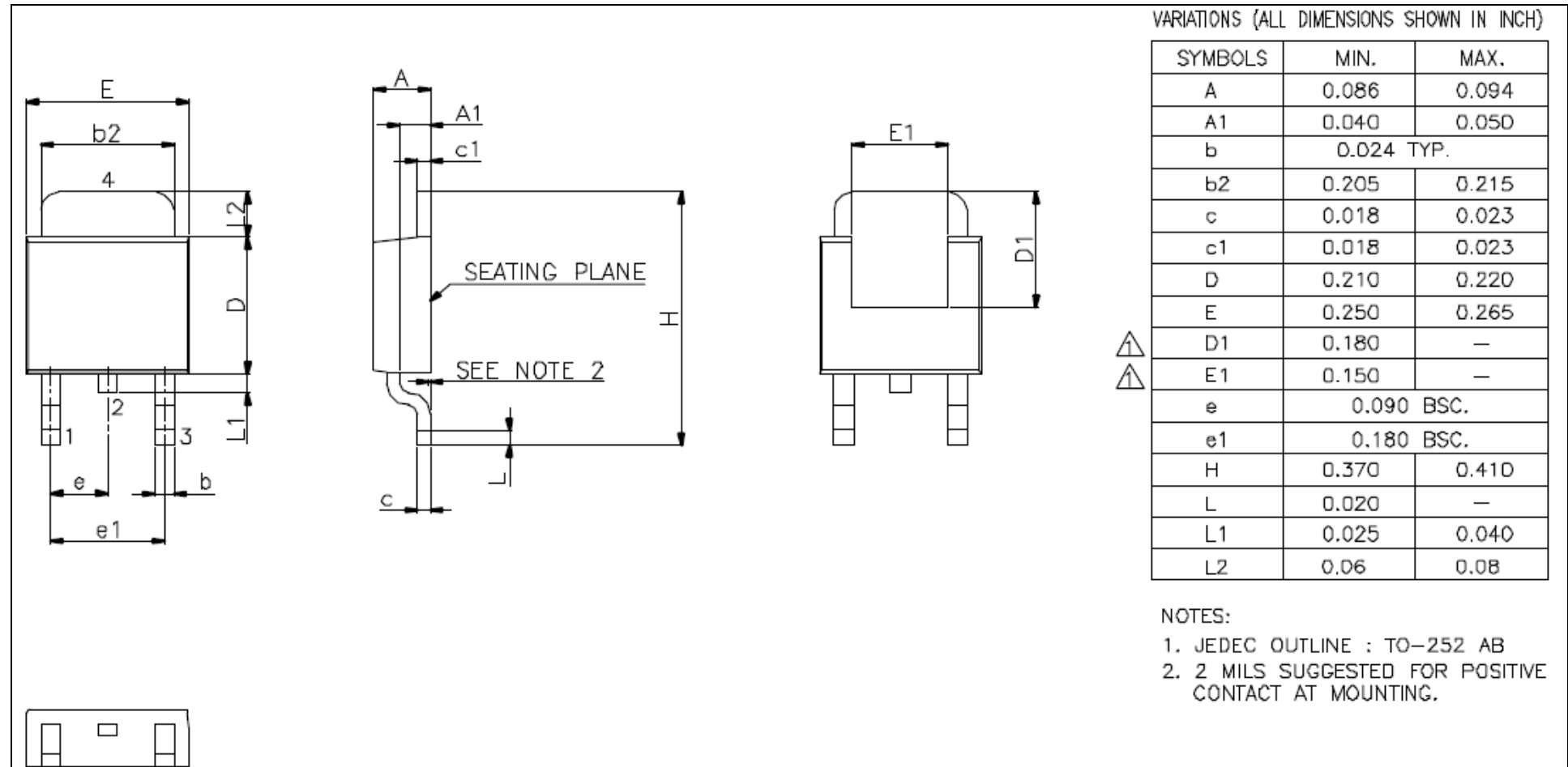
The MG39U103 can sustain an input voltage level as high as 350V. But users should care the heat dissipation issue for their applications. The following diagram shows the relation between the package temperatures and power dissipation.

**Conditions: TO-252 package, Room Temperature: 20°C.  
The thermal resistance is around 66°C/W, junction to ambient (no air flow)**



PS: Rule of thumb, it is suggested that the IC surface temperature is maintained below 90 Celsius degree.  
For TO-252 package, maintain the power dissipation below 2W.

## 11 Package Dimension



## 12 Revision History

Revision	Description	Date	Page
A1	Initial release	2011/10/03	