

## Design for LED open circuit protection

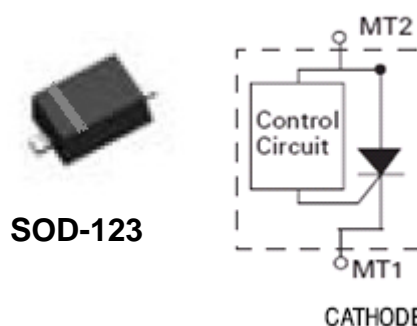
The PL06B series is a two terminal LED protector with low dropout voltage rated for max 400mA bypass current. Low operation current at monitoring mode and high bypass current capability at triggered mode. Build-in reverse diode for bypass reversed supply voltage. The PL06B series is designed for parallel connection with power LED. It bypasses LED driving current when LED at open circuit condition. It also bypasses LED driving current at reverse connected driving current to LED.

## Features

- RoHS compliant
- Automatically reset after power cycle
- Off-state current :  $I_r = 5\mu\text{A}$  max
- On-state Voltage:  $V_t=1$  max
- AEC-Q101 qualified (Automotive grade with suffix "Q".)
- Exsemi technology

## Main applications

- LED Lighting
- LED backlight for LCD TV/ Monitor
- High Power LED Protection



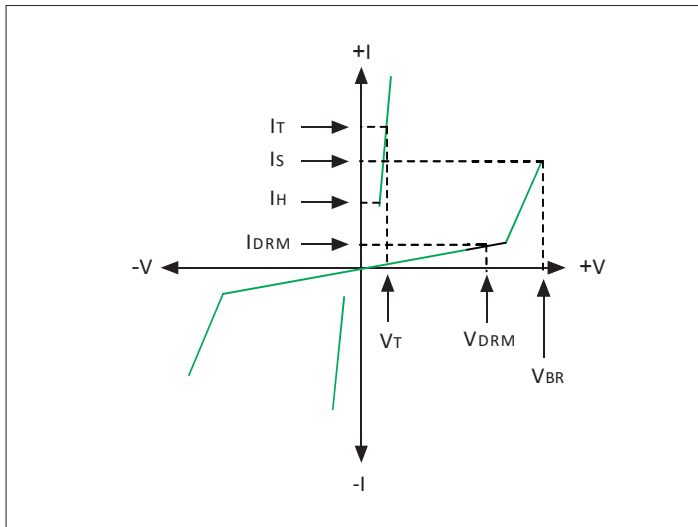
## PL06B Electrical Characteristics (TA=25°C)

Parameter	Symbol	Conditions	Min	Typ	Max	Unit
Stand-off voltage	$V_{RM}$	$I=1\text{m A}$	5.5			V
Switching Voltage	$V_{BO}$	measured at $I_{BO}$			15	V
Breakover current	$I_{BO}$	measured at $V_{BO}$		100		m A
Off-state current	$I_{RM}$	$V_{RM}=5\text{V}$			5	$\mu\text{A}$
Holding current	$I_H$			50		m A
On-state Voltage	$V_T$	$I_T=1\text{A}$			3	V
On-state Current	$I_T$				400	m A

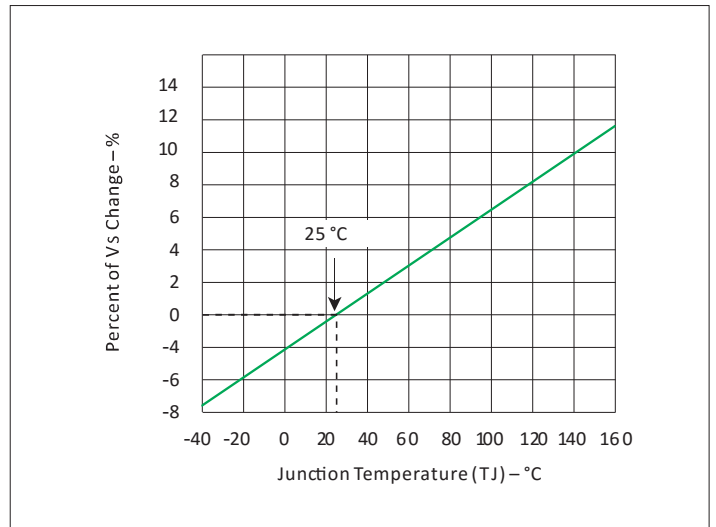
## Absolute Ratings (TA=25°C)

Symbol	Parameter	Value	Unit
$T_s$	Storage temperature range	-40 to +150	°C
$T_j$	Maximum junction temperature	150	°C
$I_T$	Minimum On-State Current, (TA = 25° C),	400	mA

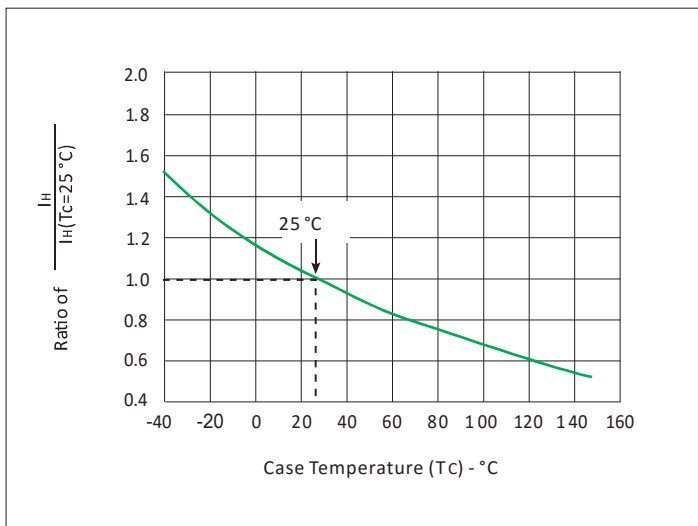
Ratings and Characteristic Curves ( $T_A=25^{\circ}\text{C}$  unless otherwise noted)



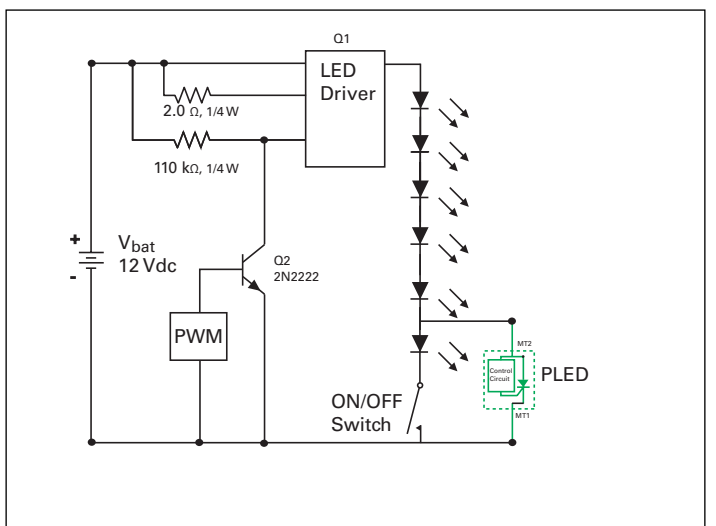
V-I Characteristics



Normalized  $V_s$  Change vs. Junction Temperature



Normalized DC Holding Current vs. Case Temperature



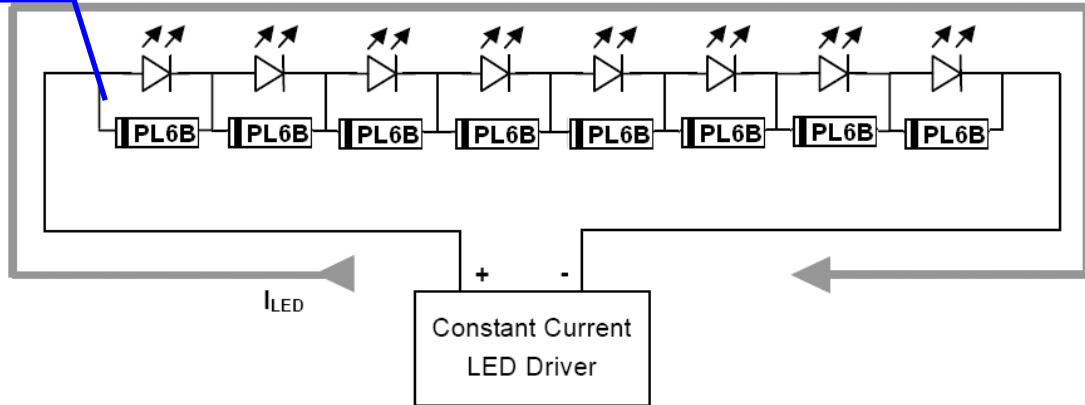
LED Interference Test Circuit

## APPLICATION INFORMATION

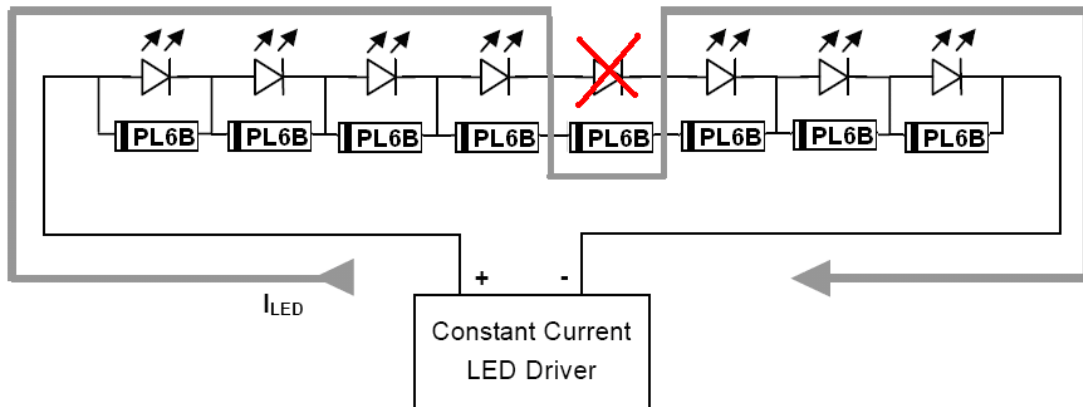
**Off-state Mode:**

The forward voltage drop ( $V_f$ ) of all LEDs should be less than 4V, which is lower than PL06B Switching voltage. All PL06B at off-state mode would only sink  $\sim\mu\text{A}$  current from the system.

安装时注意  
阴极线位置

**On-state Mode:**

Any LED may become open circuit because of LED damage or wiring problem. When it happens, the voltage drop across adjacent PL06B starts to increase, and then PL06B will be turned on when the voltage drop reaches  $V_{BO}$ . The dropout voltage on PL06B will be around 1V and the LED current  $I_{LED}$  will be bypassed to next LED. All LEDs will work well except the abnormal LED bypassed.

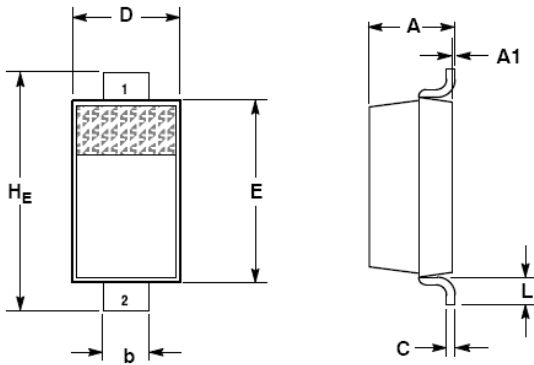


## ORDERING INFORMATION

Device	Package	Shipping
PL06B	SOD-123	3000 / Tape & Reel

## PACKAGE DIMENSIONS

## SOD-123 DIMENSIONS



DIM	MILLIMETERS			INCHES		
	MIN	NOM	MAX	MIN	NOM	MAX
A	0.94	1.17	1.35	0.037	0.046	0.053
A1	0.00	0.05	0.10	0.000	0.002	0.004
b	0.51	0.61	0.71	0.020	0.024	0.028
c	---	---	0.15	---	---	0.006
D	1.40	1.60	1.80	0.055	0.063	0.071
E	2.54	2.69	2.84	0.100	0.106	0.112
HE	3.56	3.68	3.86	0.140	0.145	0.152
L	0.25	---	---	0.010	---	---