PLED Open LED Protectors

PLED5HT SOT-89 protector

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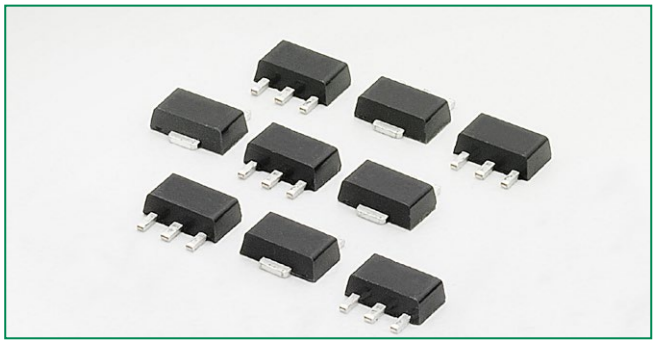
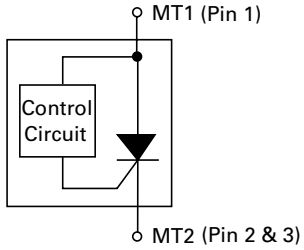
OBSOLETE DATE: 31-12-2018 PCN/ECN#: LFPCN412114
REPLACED BY: PLEDxN

RoHS



Schematic Symbol



Description

This PLED5HT Open LED Protector component provides three methods for increasing the reliability of LED lighting:

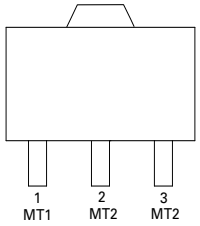
1) If one of the LEDs in an array fails open, this component provides a substitute electronic path so that the array continues to function

2) It protects against ESD events up to ± 8 kV for contact discharges and ± 15 kV for air discharges per the IEC 61000-4-2 electrostatic immunity standard.

3) It provides protection in the case of accidental reverse battery or power connection.

High reliability of lighting functions such as traffic lighting, aircraft lighting, advertising lighting, and runway lighting demand the use of a component such as the PLED5HT.

Pinout



SOT-89 Top View

Features & Benefits

- Reverse Battery/Power Protection
- Open LED bypass up to 700 mA
- ESD, IEC 61000-4-2, ±8kV contact, ±15 kV air
- Resets After Power Cycle
- Fast Switching
- Low Turn-On (Trigger Voltage)
- SOT 89 Package

Electrical Characteristics

Symbol	Parameter	Conditions	MIN	TYP	MAX	Unit
V_{AK}	Input Voltage	-	-	-	40	V
V_{TO}	Turn-On Voltage	-	4.65	4.9	5.15	V
I_S	Switching Current	-	-	-	20	mA
V_{OS}	On-State Voltage	I_{AK}= 700 mA	-	1.6	1.8	V
I_{OS}	On-State Current	(with adequate heat sinking)	-	-	700	mA
V_{OSR}	Reverse On-State Voltage	I = 700 mA	-	1.6	1.8	V
I_{OSR}	Reverse On-State Current	-	-	-	700	mA
I_{DRM}	Leakage Current	V_{AK} = 3.5 V	-	100	150	µA
V_{ESD}	ESD Withstand Voltage[1]	IEC 61000-4-2 (Contact)	-	± 8	-	kV
		IEC 61000-4-2 (Air)	-	± 15	-	kV

Notes: [1]Parameter is guaranteed by design and/or component characterization.

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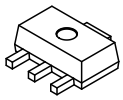
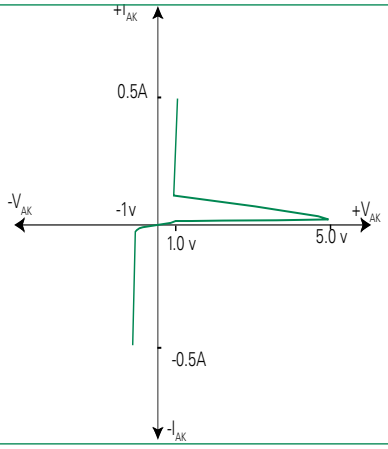
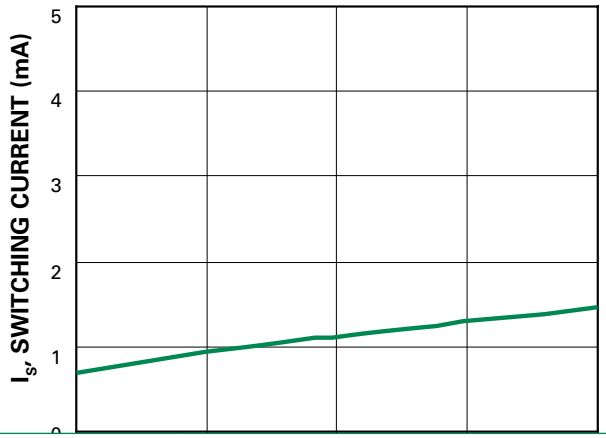
Thermal Considerations

Package	Symbol	Parameter	Value	Unit
 SOT 89	T_{OP}	Operating Temperature	-40 to 85	°C
	T_J	Maximum Junction Temperature	150	°C
	T_{STOR}	Storage Temperature	-65 to 150	°C

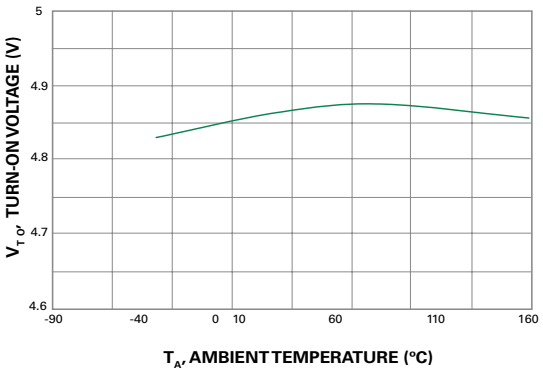
V-I Characteristics



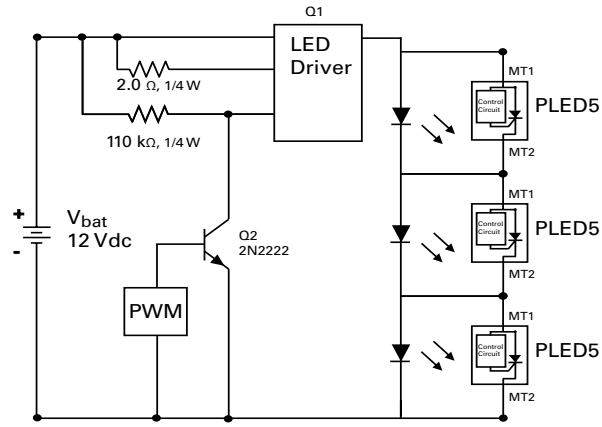
IS vs Temperature



Turn On Voltage vs Temperature



LED Application and Interference Test Circuit



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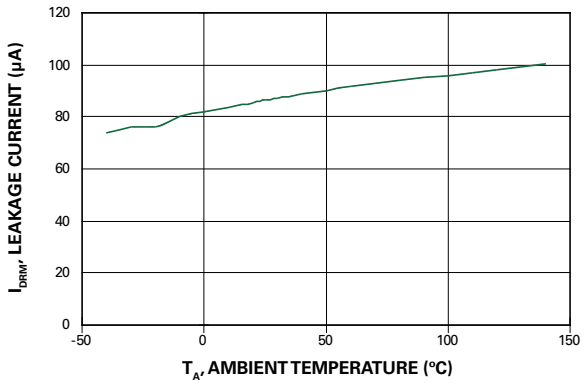
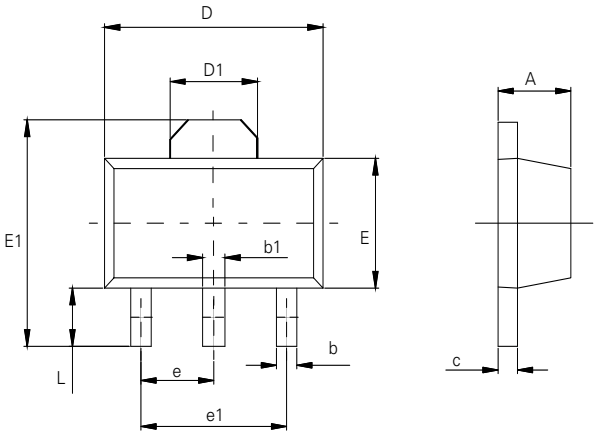
Leakage vs Temperature



Ordering Information

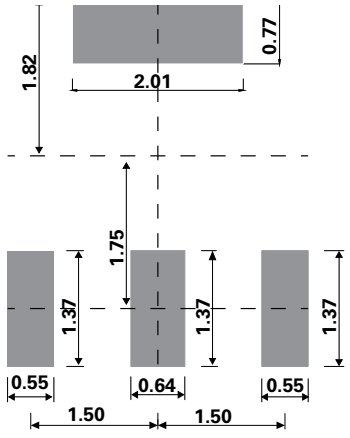
Catalog Number	Package Type	Quantity Per Reel
PLED5HT	SOT 89	1000 Pieces

Package Dimensions – SOT-89



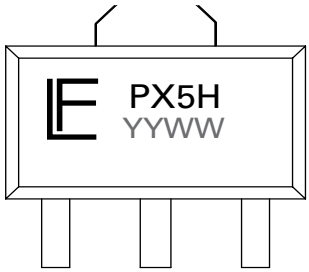
Dimension	Millimeters		Inches	
	Min	Max	Min	Max
A	1.400	1.600	0.055	0.063
b	0.320	0.520	0.013	0.197
b1	0.400	0.580	0.016	0.023
c	0.350	0.440	0.014	0.017
D	4.400	4.600	0.173	0.181
D1	1.550 REF		0.061 REF	
E	2.300	2.600	0.091	0.102
E1	3.940	4.250	0.155	0.167
e	1.500 TYP		0.060TYP	
e1	3.000 TYP		0.118TYP	
L	0.900	1.200	0.035	0.047

Pad Layout for SOT-89



(Dimensions are in millimeters)

Part Marking System



Part Numbering System

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