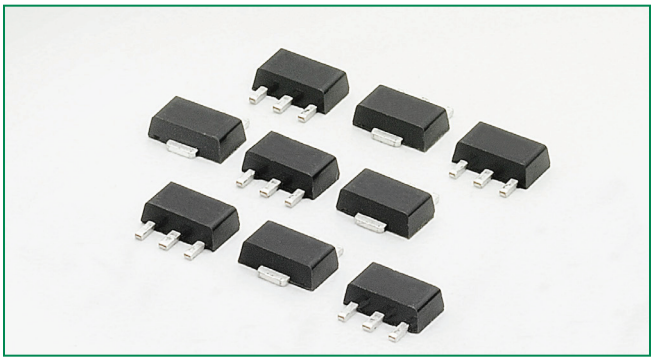
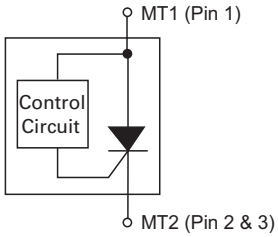
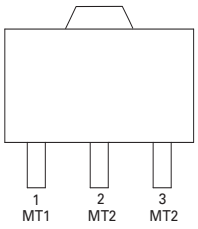
RoHS PLED5HT SOT 89 Series



Schematic Symbol



Pinout



SOT-89 Top View

Description

This PLED5 Open LED Protector device provides three methods for increasing the reliability of LED lighting:

1) If one of the LEDs in an array fails open, this device 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 device such as the PLED5.

Littelfuse offers over current devices for implementation in power circuits that can also enhance the reliability of circuit operation. Our full line of circuit protection products can be viewed at www.littelfuse.com.

Features & Benefits

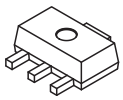
- Reverse Battery/Power Protection
- Open LED bypass up to 700 mA
- ESD, IEC 61000-4-2, ±8kV contact, ±15 kV air
- Resets After Power Cycle
- Fast Switching
- Low Turn-On (Trigger Voltage)
- SOT 89 Package

Electrical Characteristics

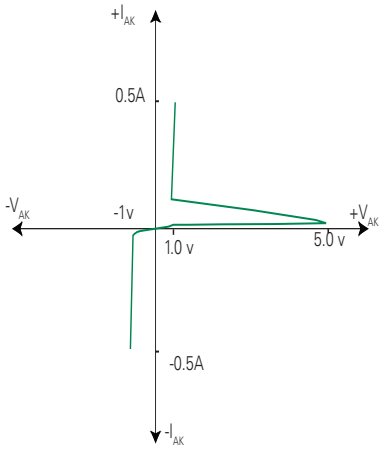
Symbol	Parameter	Conditions	MIN	TYP	MAX	Unit
V_{AK}	Input Voltage				40	V
V_{TO}	Turn-On Voltage		4.65	4.9	5.15	V
I_S	Switching Current				20	mA
V_{OS}	On-State Voltage	I_{AK}= 700 mA		1.6	1.8	V
I_{OS}	On-State Current	(with adequate heat sinking)			700	mA
V_{OSR}	Reverse On-State Voltage	I = 700 mA		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]	IEC61000-4-2 (Contact)		± 8		kV
		IEC61000-4-2 (Air)		± 15		kV

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

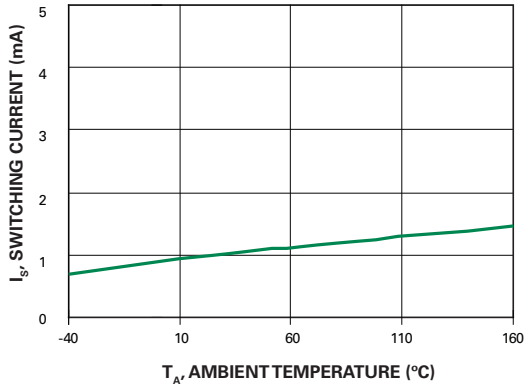
Thermal Considerations

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

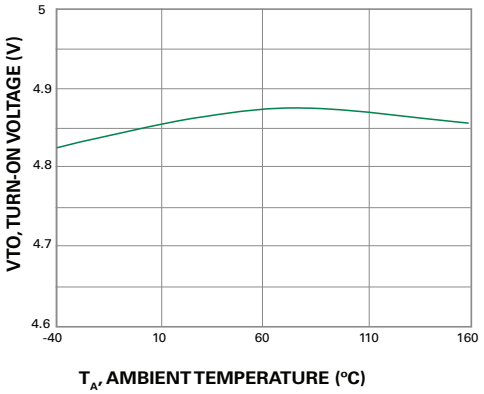
V-I Characteristics



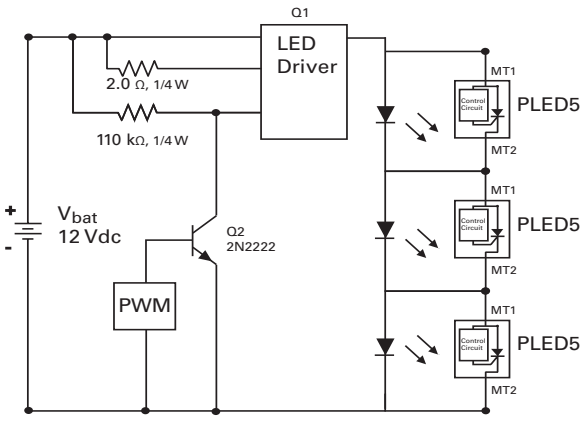
Switching Current vs Temperature



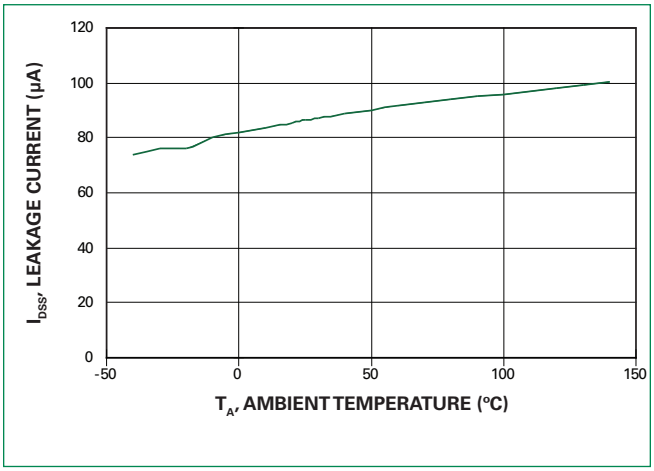
Turn On Voltage vs Temperature



LED Application and Interference Test Circuit



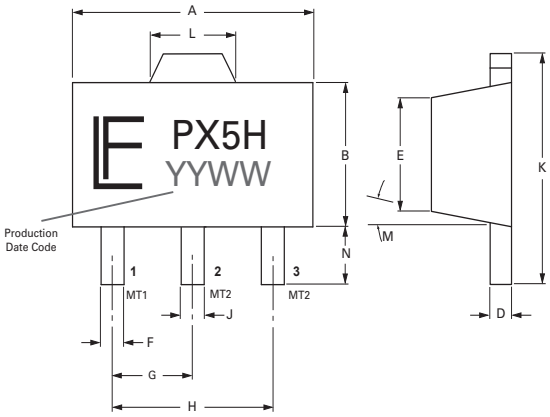
Leakage vs Temperature



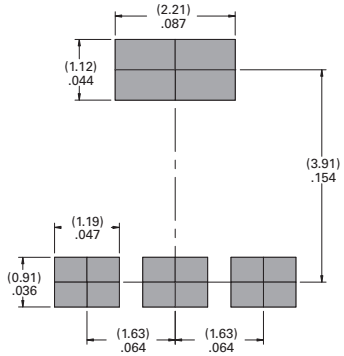
Ordering Information

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

Package Dimensions – SOT-89



Pad Layout for SOT-89



Dimension	Inches		Millimeters	
	Min	Max	Min	Max
A	0.173	0.181	4.39	4.59
B	0.090	0.102	2.28	2.59
C	0.055	0.063	1.39	1.60
D	0.015	0.017	0.38	0.43
E	0.084	0.090	2.13	2.28
F	0.016	0.019	0.33	0.48
G	0.059 BSC		1.49 BSC	
H	0.118 BSC		2.99 BSC	
J	0.018	0.022	0.45	0.55
K	0.155	0.167	3.94	4.24
L	0.067	0.072	1.70	1.82
M	0°	8°	0°	8°
N	0.035	0.047	0.89	1.19