

FEATURES

- Current Limit Protection
- I/O Isolation, 5300 V_{RMS}
- Typical R_{ON} 20 Ω
- Load Voltage 350 V
- Load Current 120 mA
- High Surge Capability
- Linear, AC/DC Operation
- Clean Bounce Free Switching
- Low Power Consumption
- High Reliability Monolithic Receptor
- SMD lead available on tape and reel
- Equivalent to CP Clare LCA110

AGENCY APPROVALS

- UL – File No. E52744
- BSI/BABT Cert. No. 7980
- FIMKO Approval
- CSA – Certification 093751

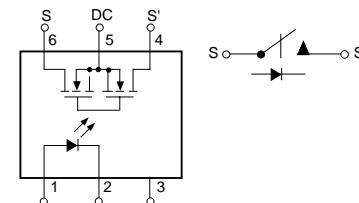
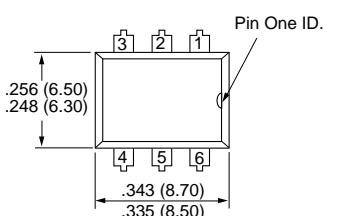
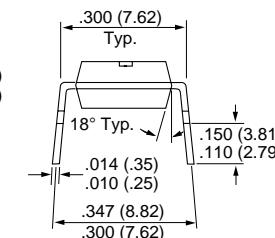
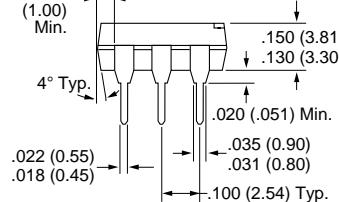
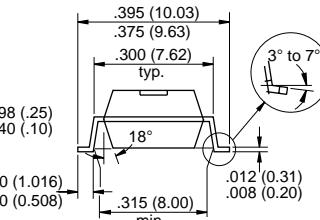
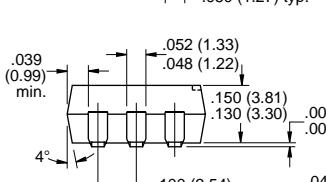
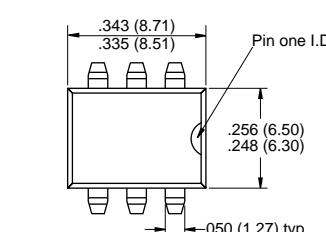
APPLICATIONS

- General Telecom Switching
 - On/off Hook Control
 - Ring Delay
 - Dial Pulse
 - Ground Start
 - Ground Fault Protection
- Instrumentation
- Industrial Controls
- See Application Note 56

DESCRIPTION

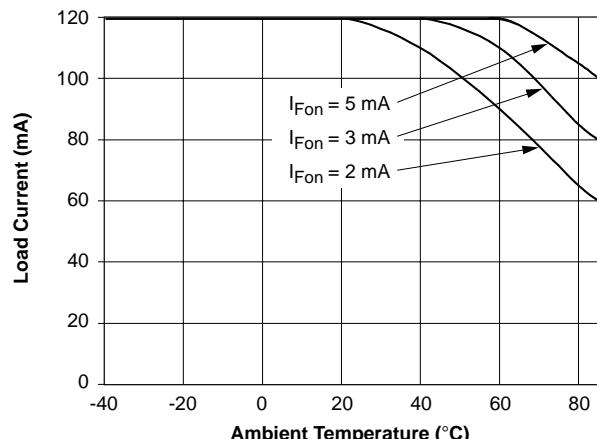
The LH1546 is robust, ideal for telecom and ground fault applications. It is a SPST normally open switch (1 Form A) that replaces electromechanical relays in many applications. It is constructed using a GaAlAs LED for actuation control and an integrated monolithic die for the switch output. The die, fabricated in a high-voltage dielectrically isolated technology, is comprised of a photodiode array, switch control circuitry and MOSFET switches. In addition, it employs current-limiting circuitry which meets FCC 68.302 and other regulatory voltage surge requirements when overvoltage protection is provided.

Package Dimensions in Inches (mm)

DIP

4° Typ.

SMD

Part Identification

Part Number	Description
LH1546AT	6-pin DIP, Tubes
LH1546AAB	6-pin SMD, Tubes
LH1546AABTR	6-pin SMD, Tape and Reel

Recommended Operating Conditions



Absolute Maximum Ratings, TA=25°C

Stresses in excess of the Absolute Maximum Ratings can cause permanent damage to the device. These are absolute stress ratings only. Functional operation of the device is not implied at these or any other conditions in excess of those given in the operational sections of the data sheet. Exposure to maximum rating conditions for extended periods can adversely affect device reliability.

Ambient Temperature Range	.....	-40 to +85°C
Storage Temperature Range	.....	-40 to +150°C
Soldering Temperature (t=10 s max.)	.....	260°C
Isolation Test Voltage (for 1.0 s)	.....	5300 V _{RMS}
Isolation Resistance	.....	≥10 ¹² Ω
V _{IO} =500 V, TA=25°C	.....	≥10 ¹¹ Ω
V _{IO} =500 V, TA=100°C	.....	550 mW
SSR Output Power Dissipation (continuous)	.....	50 mA
LED Continuous Forward Current	.....	50 mA
LED Reverse Voltage (I _R ≤10 mA)	.....	8.0 V
DC or Peak AC Load Voltage (I _L ≤50 mA)	.....	350 V
Continuous DC Load Current at 25°C	.....	120 mA
Bidirectional	.....	200 mA
Unidirectional	.....

Electrical Characteristics, TA=25°C

Minimum and maximum values are testing requirements. Typical values are characteristics of the device and are the result of engineering evaluations. Typical values are for information only and are not part of the testing requirements.

Parameter	Symbol	Min.	Typ.	Max.	Units	Test Conditions
Input						
LED Forward Current, Switch Turn-on	I _{Fon}	—	1.1	2.0	mA	I _L =100 mA, t=10 ms
LED Forward Current, Switch Turn-off	I _{Foff}	0.2	1.0	—	mA	V _L ±350 V
LED Forward Voltage	V _F	1.15	1.26	1.45	V	I _F =10 mA
Output						
ON-resistance, ac/dc: Pin 4 (±) to 6 (±)	R _{ON}	—	28	35	Ω	I _F =5.0 mA, I _L =50 mA
ON-resistance, dc: Pin 4, 6 (+) to 5 (-)		—	7.0	10.0	Ω	I _F =5.0 mA, I _L =100 mA
OFF-resistance	R _{OFF}	0.5	300	—	GΩ	I _F =0 mA, V _L =±100 V
Current Limit ac/dc	I _{LMT}	170	210	250	mA	I _F =5.0 mA, t=5.0 ms V _L =6.0 V
Off-state Leakage Current	I _O	—	0.35	200	nA	I _F =0 mA, V _L =±100 V
		—	0.096	1.0	μA	I _F =0 mA, V _L =±350 V
Output Capacitance, Pin 4 to 6	C _O	—	18	—	pF	I _F =0 mA, V _L =1.0 V
		—	6.7	—	pF	I _F =0 mA, V _L =50 V
Switch Offset	V _{OS}	—	0.3	—	μV	I _F =5.0 mA
Transfer						
Input/Output Capacitance	C _{ISO}	—	0.67	—	pF	V _{ISO} =1.0 V
Turn-on Time	t _{on}	—	1.14	3.0	ms	I _F =5.0 mA, I _L =50 mA
Turn-off Time	t _{off}	—	0.71	3.0	ms	I _F =5.0 mA, I _L =50 mA

Typical Performance Characteristics

Figure 1. LED Voltage vs. Temperature

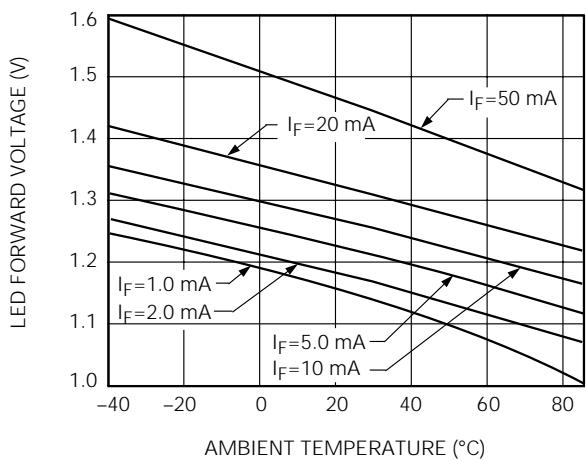


Figure 2. LED Forward Current vs. LED Forward Voltage

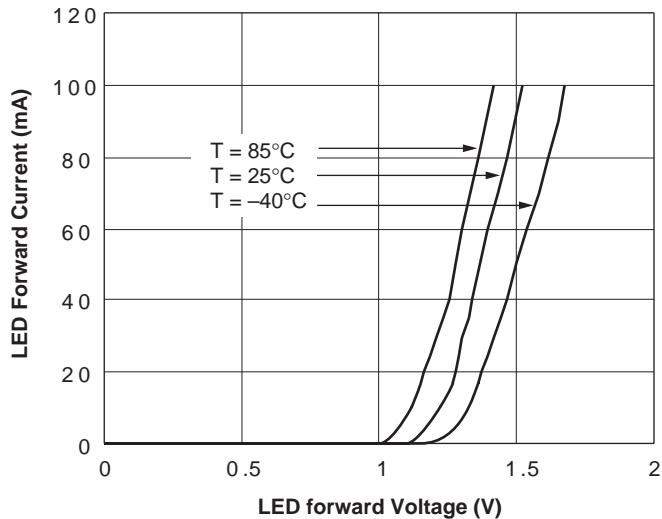


Figure 3. LED Reverse Current vs. LED Reverse Voltage

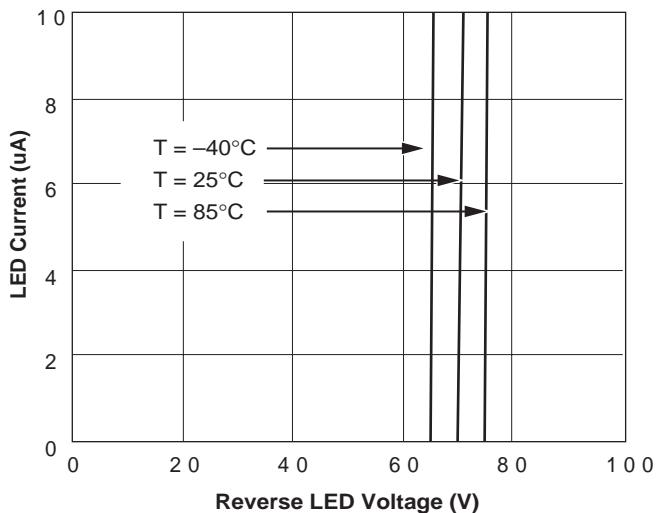


Figure 4. LED Current for Switch Turn-on vs. Temperature

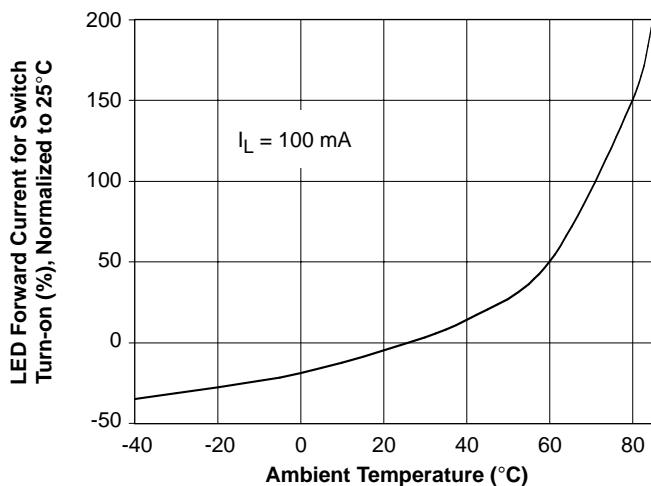


Figure 5. LED Dropout Voltage vs. Temperature

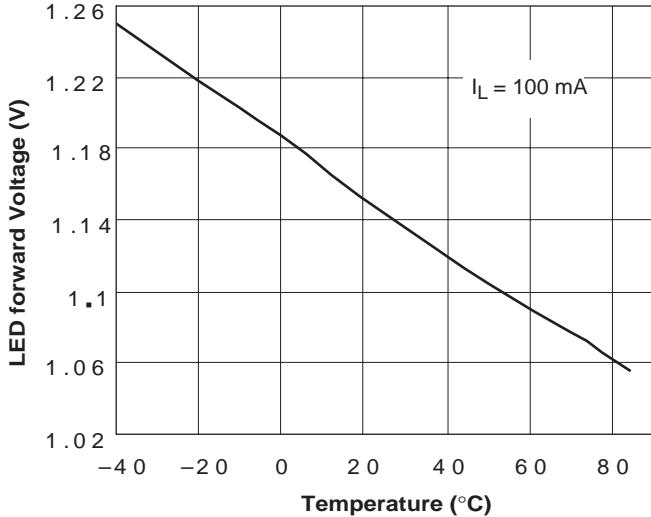


Figure 6. Load Current vs. Load Voltage

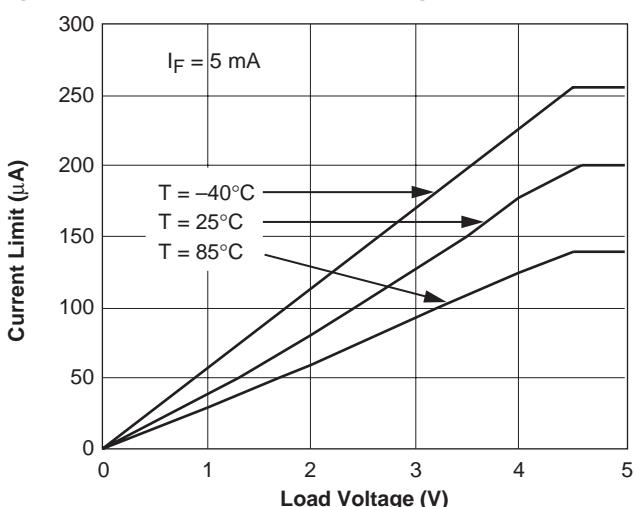


Figure 7. Current Limit vs. Temperature

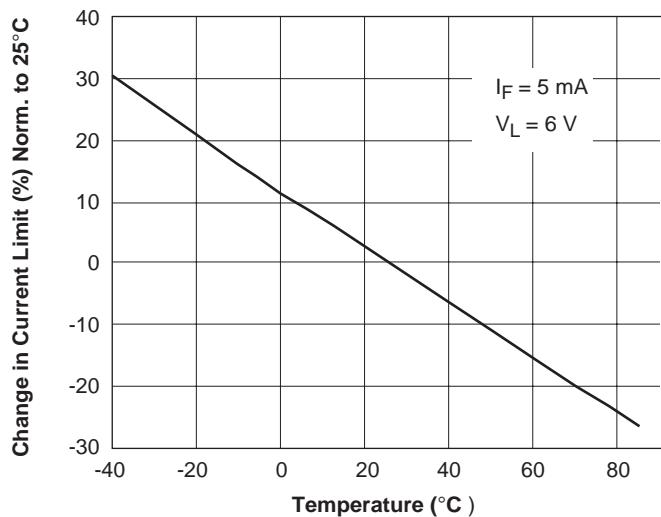


Figure 8. Switch Breakdown Voltage vs. Load Current

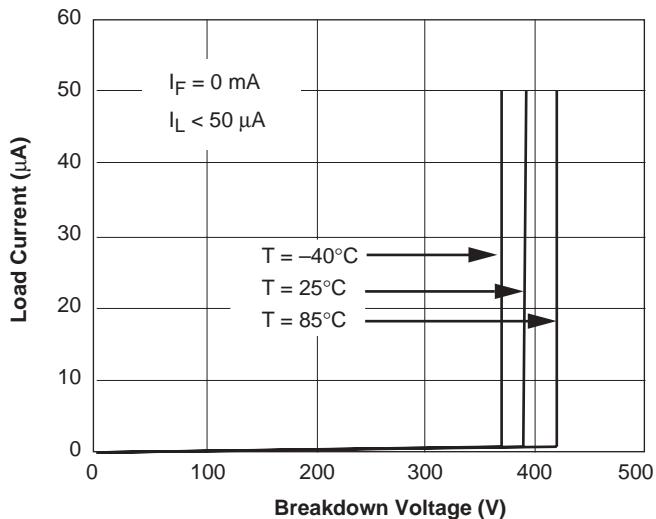


Figure 9. Switch Offset Voltage vs. LED Current

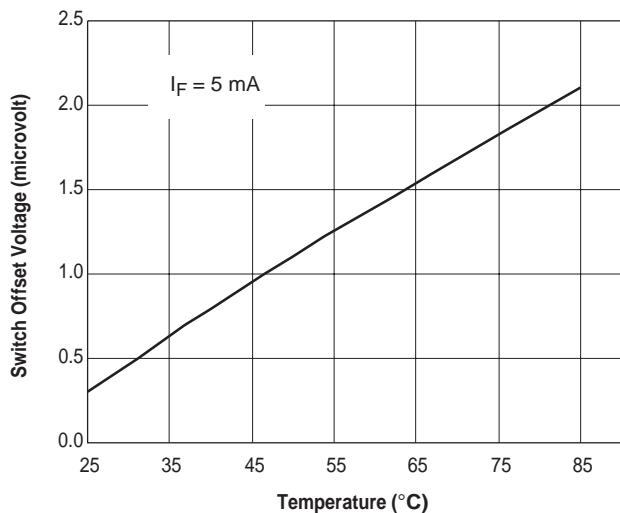


Figure 10. ON-Resistance vs. Temperature

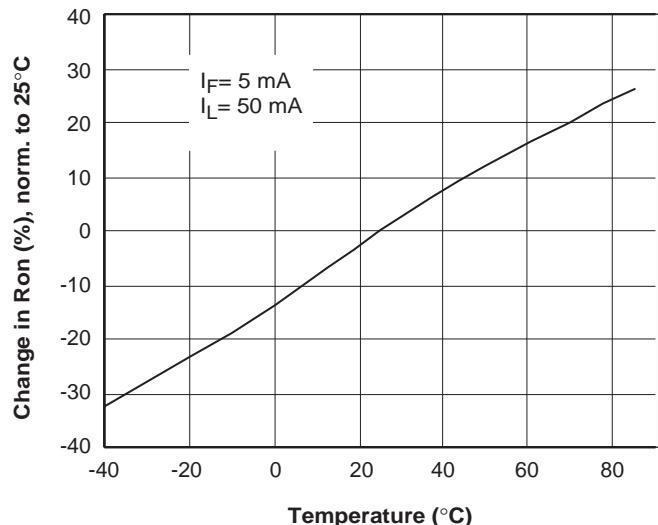


Figure 11. Variation in ON-Resistance vs. LED Current

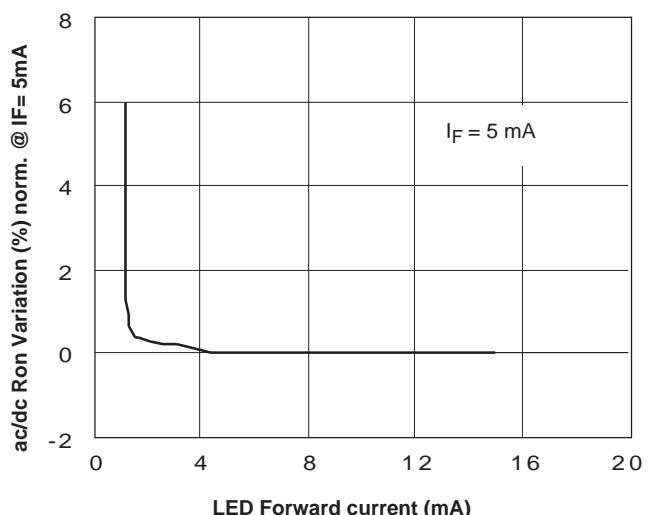


Figure 13. Insertion Loss vs. Frequency

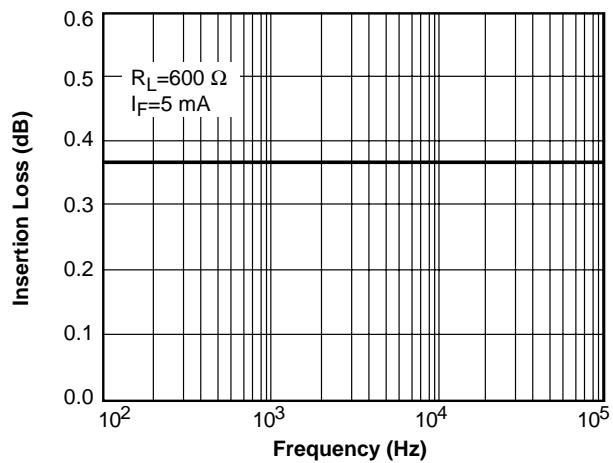


Figure 14. Output Isolation

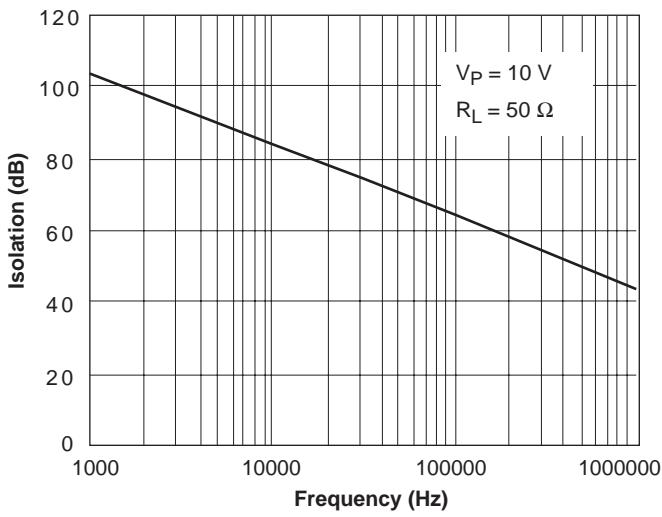


Figure 15. Leakage Current vs. Applied Voltage at Elevated Temperatures

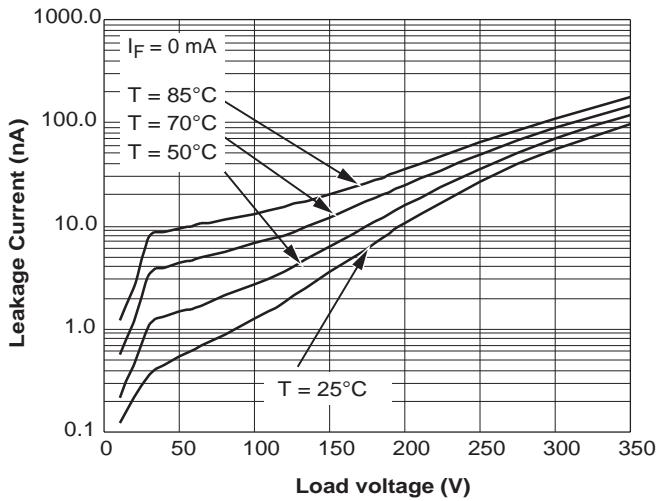


Figure 16. Switch Breakdown Voltage vs. Temperature

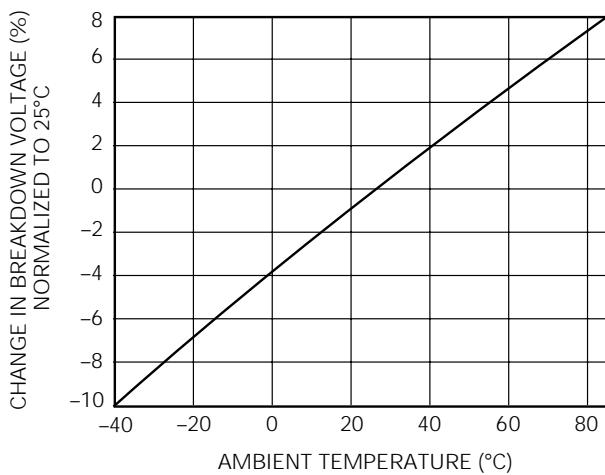


Figure 17. Switch Offset Voltage vs. Temperature

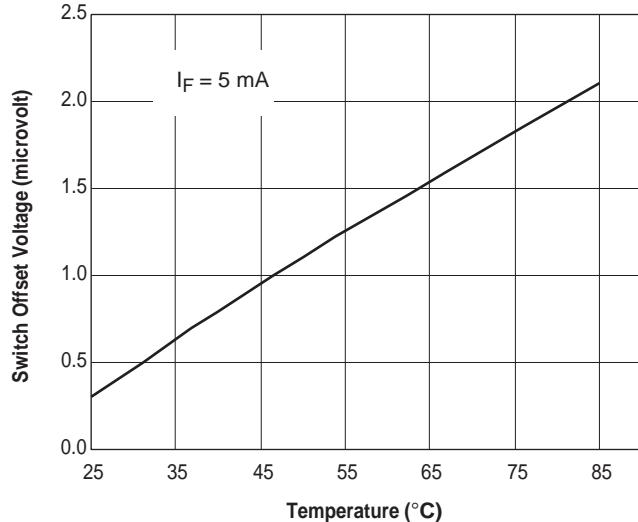


Figure 18. Turn-On Time vs. Temperature

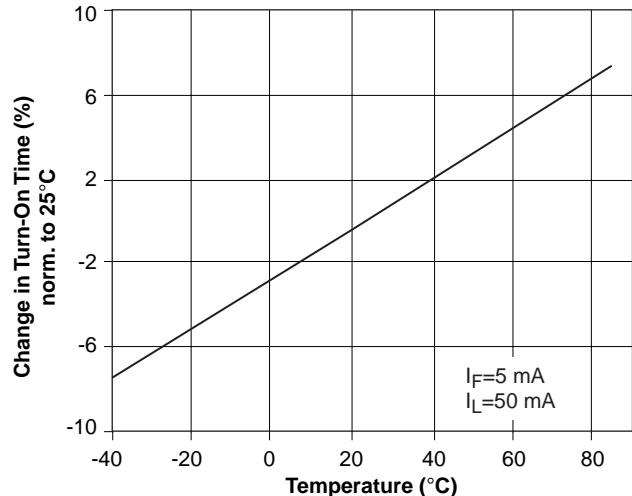


Figure 19. Turn-Off Time vs. Temperature

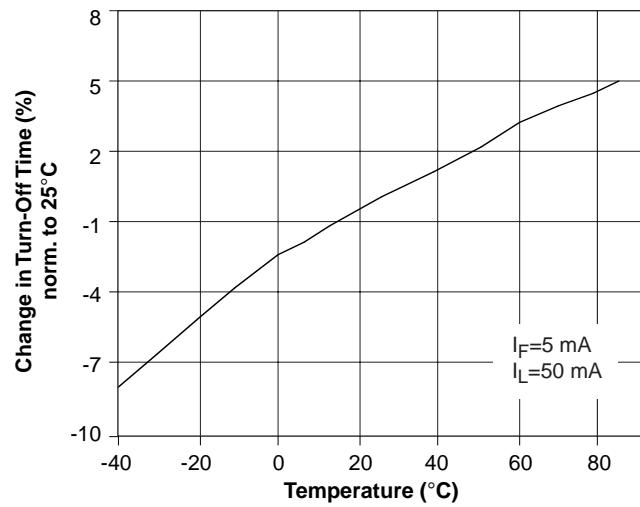


Figure 21. Turn-Off Time vs. LED Current

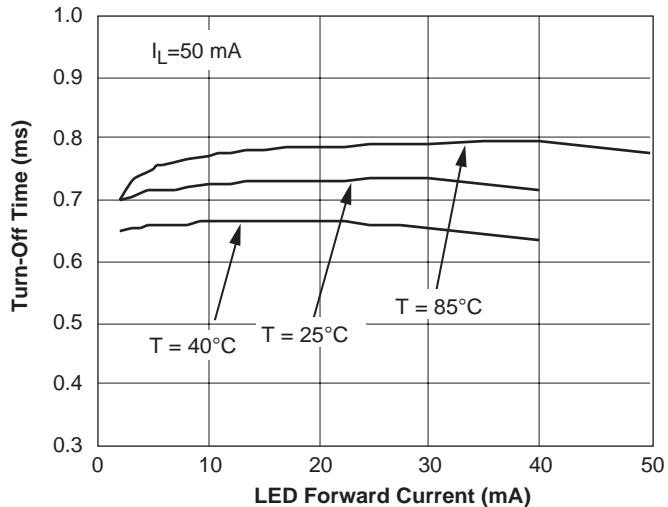
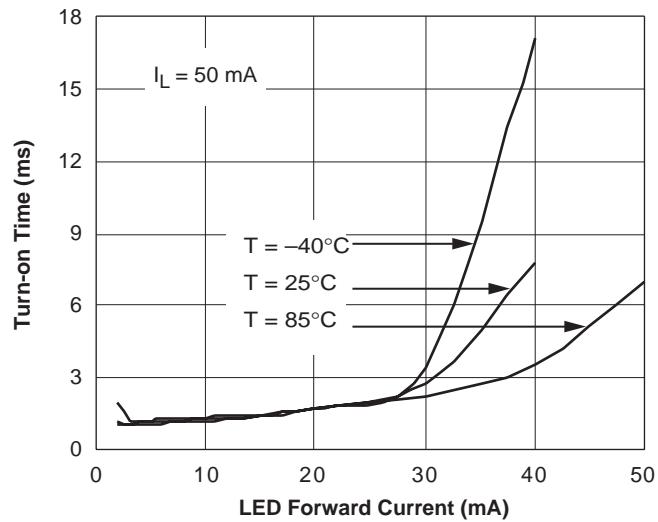


Figure 20. Turn-On Time vs. LED Current



ООО "ЛайфЭлектроникс"

"LifeElectronics" LLC

ИНН 7805602321 КПП 780501001 Р/С 40702810122510004610 ФАКБ "АБСОЛЮТ БАНК" (ЗАО) в г.Санкт-Петербурге К/С 30101810900000000703 БИК 044030703

Компания «Life Electronics» занимается поставками электронных компонентов импортного и отечественного производства от производителей и со складов крупных дистрибуторов Европы, Америки и Азии.

С конца 2013 года компания активно расширяет линейку поставок компонентов по направлению коаксиальный кабель, кварцевые генераторы и конденсаторы (керамические, пленочные, электролитические), за счёт заключения дистрибуторских договоров

Мы предлагаем:

- Конкурентоспособные цены и скидки постоянным клиентам.
- Специальные условия для постоянных клиентов.
- Подбор аналогов.
- Поставку компонентов в любых объемах, удовлетворяющих вашим потребностям.
- Приемлемые сроки поставки, возможна ускоренная поставка.
- Доставку товара в любую точку России и стран СНГ.
- Комплексную поставку.
- Работу по проектам и поставку образцов.
- Формирование склада под заказчика.
- Сертификаты соответствия на поставляемую продукцию (по желанию клиента).
- Тестирование поставляемой продукции.
- Поставку компонентов, требующих военную и космическую приемку.
- Входной контроль качества.
- Наличие сертификата ISO.

В составе нашей компании организован Конструкторский отдел, призванный помочь разработчикам, и инженерам.

Конструкторский отдел помогает осуществить:

- Регистрацию проекта у производителя компонентов.
- Техническую поддержку проекта.
- Защиту от снятия компонента с производства.
- Оценку стоимости проекта по компонентам.
- Изготовление тестовой платы монтаж и пусконаладочные работы.



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