

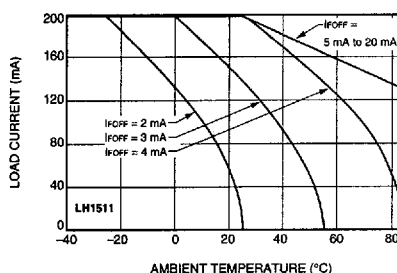
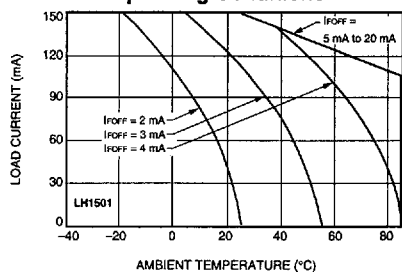
Absolute Maximum Ratings $T_A=25^\circ\text{C}$

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 this document. Exposure to Absolute Maximum Ratings for extended periods of time can adversely affect reliability.

Parameter	Symbol	Test Conditions	LH1501	LH1511	Units
Ambient Operating Temperature Range	T_A	—	-40 to +85	-40 to +85	$^\circ\text{C}$
Storage Temperature Range	T_{stg}	—	-40 to +150	-40 to +150	$^\circ\text{C}$
Pin Soldering Temperature	T_S	$t = 10 \text{ s max}$	260	260	$^\circ\text{C}$
Input/Output Isolation Test Voltage	V_{ISO}	$V_{rms} t = 1 \text{ s}$ $I_{ISO} = 10 \mu\text{A max}$	5300	5300	V_{rms}
LED Continuous Forward Current	I_F	—	50	50	mA
LED Reverse Voltage	V_R	$I_R \leq 10 \mu\text{A}$	8	8	V
dc or Peak ac Load Voltage	V_L	$I_L \leq 50 \mu\text{A}$	350	200	V
Continuous dc Load Current Bidirectional Operation	I_L	—	150	200	mA
Unidirectional Operation			250	350	mA
Peak Load Current	I_P	$t = 100 \text{ ms}$ (single shot)	400	600	mA
Output Power Dissipation (continuous)	P_{DISS}	—	550	550	mW

Recommended Operating Conditions



Electrical Characteristics $T_A=25^{\circ}\text{C}$

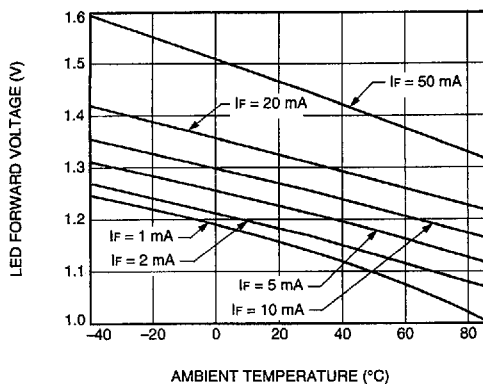
Minimum and maximum values are testing requirements. Typical values are characteristics of the device

and are the result of engineering evaluations. Typical values are for information purposes only and are not part of the testing requirements.

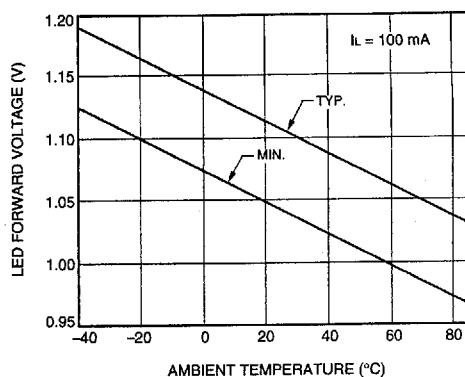
	Parameter	Symbol	Test Conditions	Values	LH1501	LH1511	Units	
INPUT	LED Forward Current for Switch Turn-off	I_{Foff}	—	Min	—	—	mA	
				Typ	1.0	1.0	mA	
				Max	2.0	2.0	mA	
	LED Forward Current for Switch Turn-on	I_{Fon}	$t=10\text{ ms}$	V_L	$\pm$	300	150	V
				Min	0.2	0.2	mA	
				Typ	0.9	0.9	mA	
	LED Forward Voltage	V_F	$I_F=10\text{ mA}$	Max	—	—	mA	
				I_L	$\pm$	150	200	mA
				Min	1.15	1.15	V	
OUTPUT	ON-resistance ac/dc Pins 4, 6 (+) to 5 (–) dc Pins 4, 6 (+) to 5 (–)	R_{ON}	$I_F=0\text{ mA}$ $I_L=50\text{ mA}$	Min	12	6	Ω	
				Typ	20	10	Ω	
				Max	25	15	Ω	
			$I_F=0\text{ mA}$ $I_L=100\text{ mA}$	Min	3.00	1.50	Ω	
				Typ	5.00	2.50	Ω	
				Max	6.25	3.75	Ω	
	OFF-resistance	R_{OFF}	$I_F=5\text{ mA}$ $V_L=\pm 100\text{ V}$	Min	0.1	0.1	$\text{G}\Omega$	
				Typ	1.4	1.4	$\text{G}\Omega$	
				Max	—	—	$\text{G}\Omega$	
	Off-state Leakage Current	—	$I_F=5\text{ mA}$ $V_L=\pm 100\text{ V}$	Min	—	—	μA	
				Typ	0.07	0.07	μA	
				Max	1.0	1.0	μA	
			$I_F=5\text{ mA}$	Min	—	—	μA	
				Typ	0.08	0.07	μA	
				Max	1.0	1.0	μA	
	Output Capacitance	—	$I_C=5\text{ mA}$ $V_L=1\text{ V}$	V_L	$\pm$	350	200	V
				Min	—	—	pF	
				Typ	45	35	pF	
			$I_C=5\text{ mA}$ $V_L=50\text{ V}$	Max	—	—	pF	
				Min	—	—	pF	
				Typ	10	15	pF	
	Switch Offset	—	$I_F=0\text{ mA}$	Max	—	—	pF	
				Min	—	—	μV	
				Typ	0.1	0.1	μV	
		Input/Output Capacitance	C_{ISO}	$V_{\text{ISO}}=1\text{ V}$	Max	—	—	μV
Min					—	—	pF	
Typ					0.8	0.8	pF	
Turn-off Time		t_{off}	$I_F=5\text{ mA}$ $I_L=50\text{ mA}$	Max	—	—	pF	
				Min	—	—	ms	
				Typ	2.0	1.0*	ms	
Turn-on Time		t_{on}	$I_F=5\text{ mA}$ $I_L=50\text{ mA}$	Max	3.0	3.0*	ms	
				Min	—	—	ms	
				Typ	1.0	1.2*	ms	
				Max	3.0	3.0*	ms	

* $I_F=10\text{ mA}$.

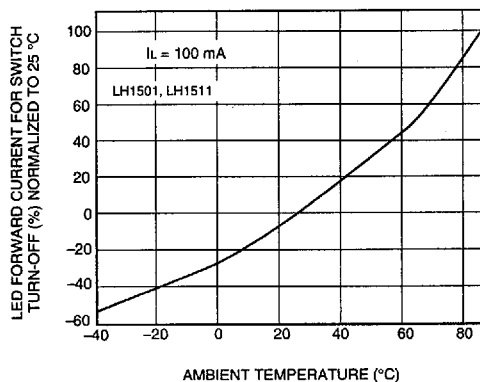
A. LED Voltage vs. Temperature



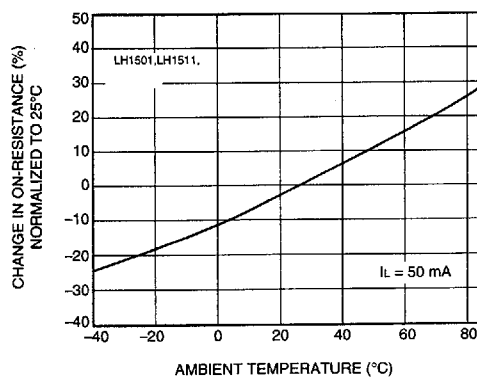
B. LED Dropout Voltage vs. Temperature



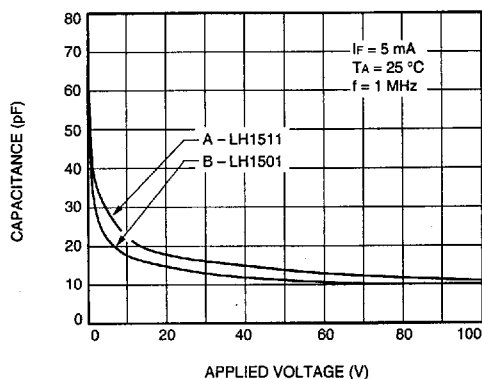
C. LED Current for Switch Turn-Off vs. Temperature



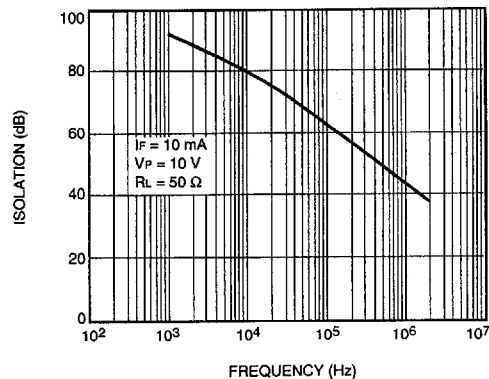
D. ON-Resistance vs. Temperature



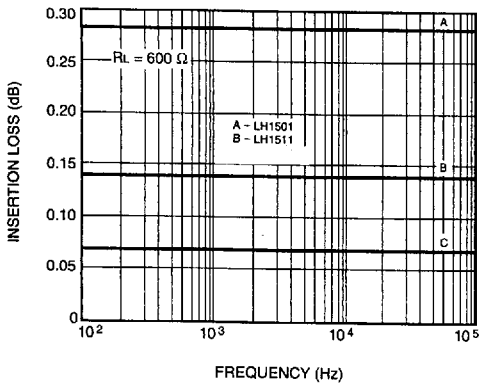
E. Switch Capacitance vs. Applied Voltage



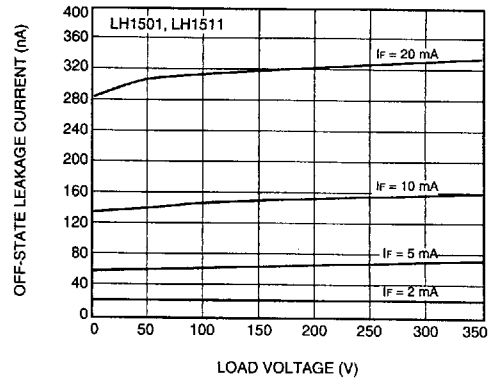
F. Output Isolation



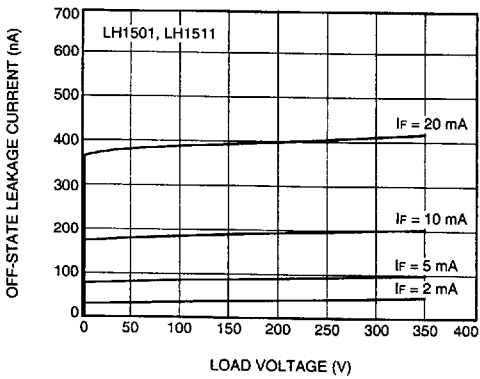
G. Insertion Loss vs. Frequency



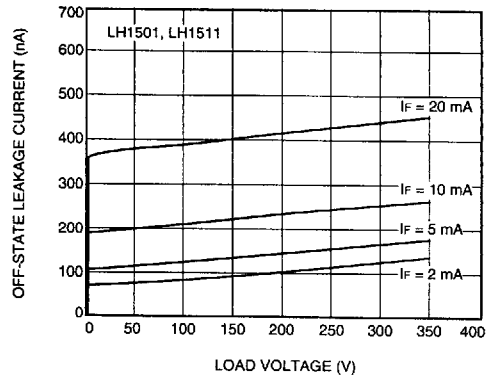
H. Leakage Current vs. Applied Voltage @ 25°C



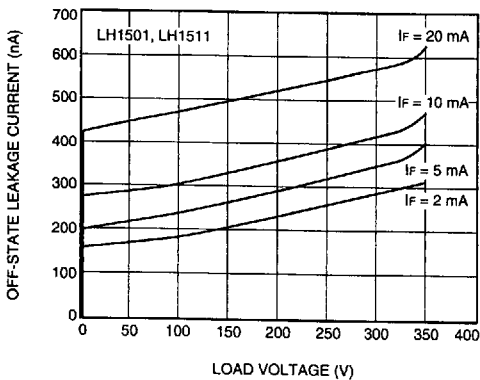
I. Leakage Current vs. Applied Voltage @ 50°C



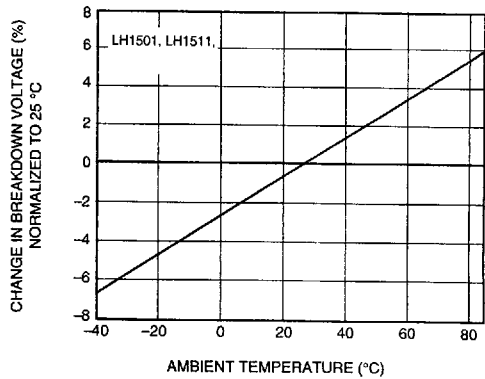
J. Leakage Current vs. Applied Voltage @ 70°C



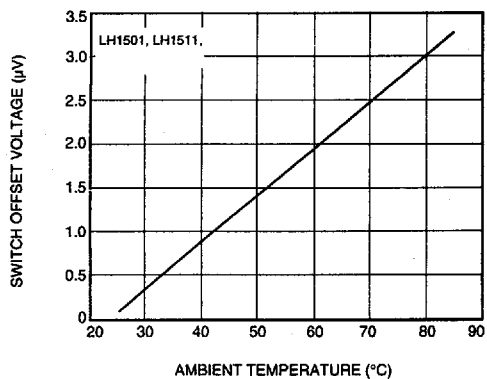
K. Leakage Current vs. Applied Voltage @ 85°C



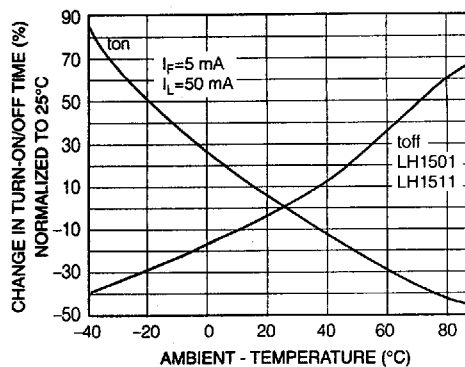
L. Switch Breakdown Voltage vs. Temperature



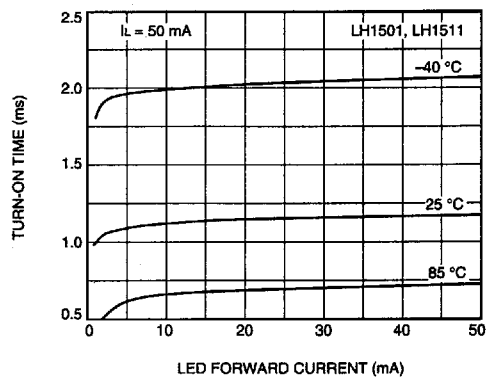
M. Switch Offset Voltage vs. Temperature



N. Turn-On/Off vs. Temperature



O. Turn-On Time vs. LED Current



P. Turn-Off Time vs. LED Current

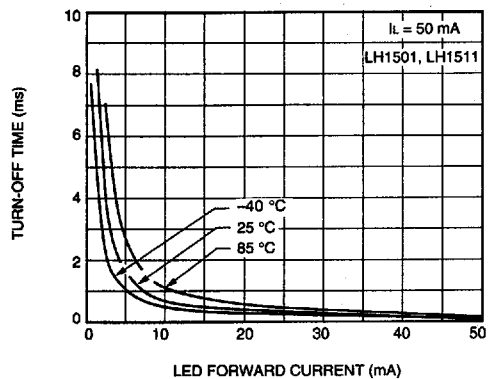


Figure 1. 6-pin DIP

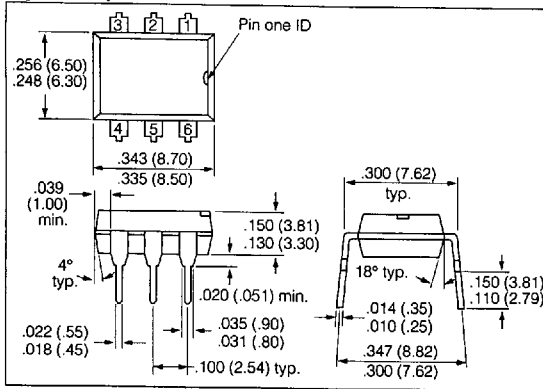


Figure 2. 6-pin, SMD

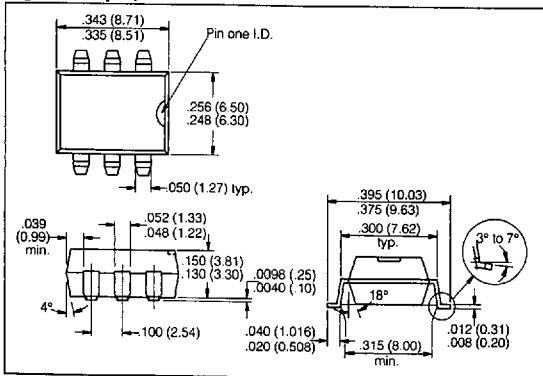


Figure 3. 8-pin DIP

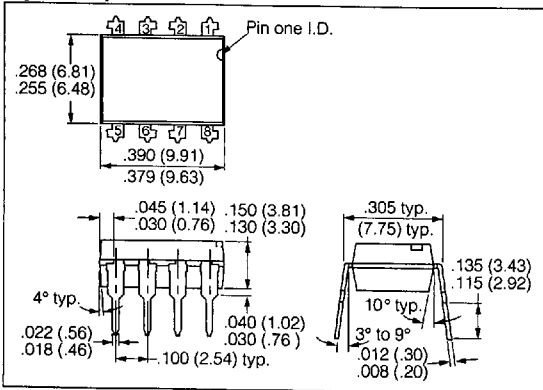


Figure 4. 8-pin, SMD

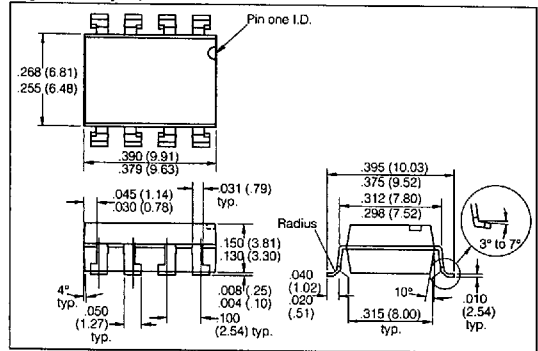


Figure 5. 8-pin SOP (PCMCIA)

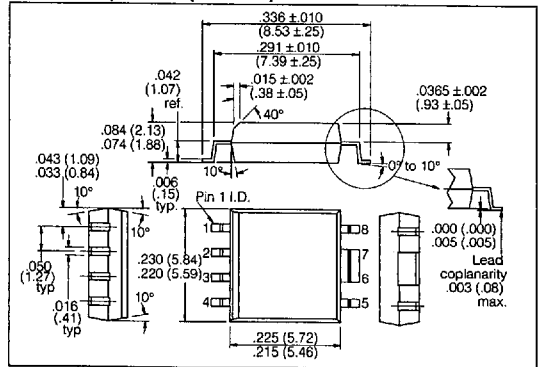


Figure 6. 18-pin SOP (PCMCIA)

