Absolute Maximum Ratings T_A=25°C

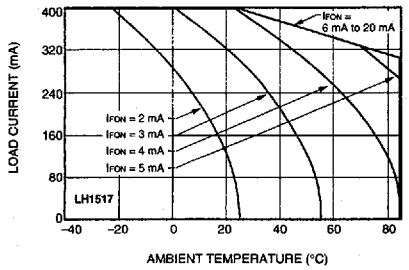
Stresses in excess of the Absolute Maximum Ratings can cause permanent damage to the device. These are absolute stress ratings only. Functional operation of the device is not implied at these or any other conditions in excess of those given in the operational sections of this document. Exposure to Absolute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

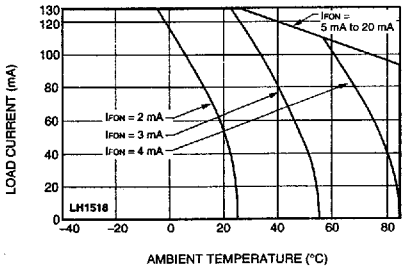
Parameter	Symbol	Test Conditions	LH1517	LH1518	LH1519	Units
Ambient Operating Temperature range	T_A	—	–40 to +85			°C
Storage Temperature Range	T_{stg}		–40 to +150			
Pin Soldering Temperature	T_S	t=10 s max	260			
Input/Output Isolation Voltage*	V_{ISO}	—	3750			Vrms
LED Continuous Forward Current	I_F		50			mA
LED Reverse Voltage	V_R	$I_R \leq 10\ \mu A$	8			V
dc or Peak ac Load Voltage	V_L	$I_L \leq 50\ \mu A$	200	250		
Continuous dc Load Current Bidirectional Operation Unidirectional Operation	I_L	—	 400 800	 155 300	 240 450	mA
Peak Load Current	I_P	t=100 ms (single shot)	1200	†	†	
Output Power Dissipation (continuous)	P_{DISS}	—	600	550		mW

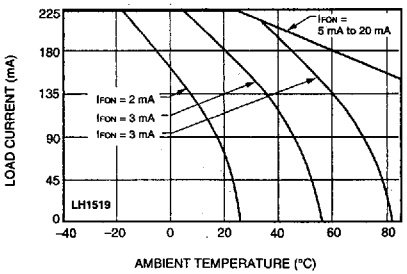
* 5300 Vrms input/output isolation voltage available on some products. Consult factory.

† Refer to Current-Limit Performance Application Note for a discussion on relay operation during transient currents.

Recommended Operating Conditions







Electrical Characteristics T_A=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 purposes only and are not part of the testing requirements.

	Parameter	Symbol	Test Conditions	Values	LH1517	LH1518	LH1519	Units
INPUT	LED Forward Current for Switch Turn-on	I_{Fon}	I_L=100 mA t=10 ms	Min	—	—	—	mA
				Typ	0.9	0.8	0.9	mA
				Max	2.0	2.0	2.0	mA
	LED Forward Current for Switch Turn-off	I_{Foff}		Min	0.2	0.2	0.2	mA
				Typ	0.8	0.7	0.8	mA
				Max	—	—	—	mA
			V_L	±	100	200	200	V
	LED Forward Voltage	V_F	I_F=10 mA	Min	1.15	1.15	1.15	V
				Typ	1.26	1.26	1.26	V
				Max	1.45	1.45	1.45	V
OUTPUT	ON-resistance ac/dc Pin 4 (±) to 6 (±) dc Pin 4, 6 (+) to 5 (±)	R_{ON}	I_F=5 mA I_L=50 mA	Min	1	10	3	Ω
				Typ	2	15	6	Ω
				Max	3	20	10	Ω
			I_F=5 mA I_L=100 mA	Min	0.25	2.50	0.75	Ω
				Typ	0.50	3.75	1.50	Ω
				Max	0.85	5.00	2.50	Ω
	OFF-resistance	R_{OFF}	I_F=0 mA V_L=±100 V	Min	0.5	0.5	0.5	GΩ
				Typ	2500	5000	2500	GΩ
				Max	—	—	—	GΩ
	ON-state Voltage	—	I_L=1 mA	Min	—	—	—	V
				Typ	—	—	—	V
				Max	—	—	—	V
			I_L=90 mA t=10 ms	Min	—	—	—	V
				Typ	—	—	—	V
				Max	—	—	—	V
	Current Limit ac/dc Pin 4 (±) to 6 (±) dc Pin 4, 6 (+) to 5 (±)	I_{LMT}	I_F=5 mA t=5 ms	Min	—	170	330	mA
				Typ	—	200	450	mA
				Max	—	280	550	mA
			VL	±	—	6	4	V
			I_F=5 mA, V_L=4 V t=5 ms	Min	—	—	—	mA
				Typ	—	—	—	mA
				Max	—	—	—	mA
	Off-state Leakage Current	—	I_F=0 mA V_L=±100 V	Min	—	—	—	nA
				Typ	0.04	0.02	0.04	nA
				Max	200	200	200	nA
			I_F=0 mA	Min	—	—	—	µA
				Typ	—	—	—	µA
				Max	1.0	1.0	1.0	µA
			V_L	±	150	250		V
	Output Capacitance Pin 4 to 6	—	I_F=0 mA V_L=1 V	Min	—	—	—	pF
				Typ	185	55	100	pF
				Max	—	—	—	pF
			I_F=0 mA V_L=50 V	Min	—	—	—	pF
				Typ	45	10	20	pF
				Max	—	—	—	pF
	Switch Offset	—	I_F=5 mA	Min	—	—	—	V
				Typ	0.1	0.15	0.1	V
				Max	—	—	—	V
TRANSFER	Input/Output Capacitance	C_{ISO}	V_{ISO}=1 V	Min	—	—	—	pF
				Typ	0.8	0.8	0.8	pF
				Max	—	—	—	pF
	Turn-on Time	t_{on}	I_F=5 mA I_L=50 mA	Min	—	—	—	ms
				Typ	1.7†	1.4	2.0	ms
				Max	3.0†	3.0	3.0	ms
	Turn-off Time	t_{off}	I_F=5 mA I_L=50 mA	Min	—	—	—	
				Typ	1.3†	0.7	0.9	ms
				Max	3.0†	3.0	3.0	ms

* I_F=1.5 mA
† I_F=10 mA
‡ I_L=25 mA

Figure 1. 6-pin DIP

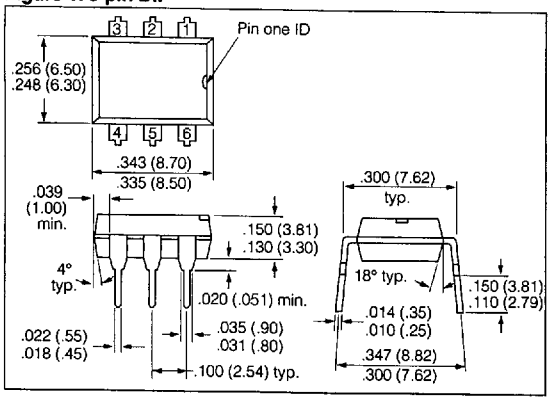


Figure 2. 6-pin, SMD

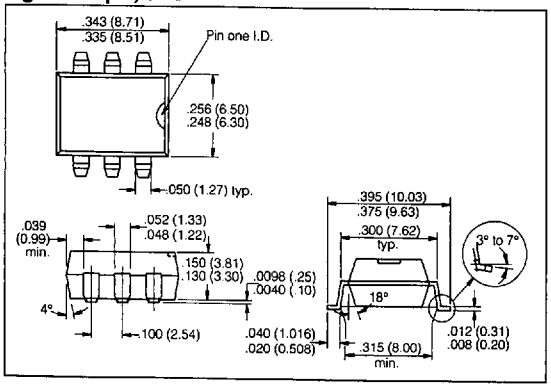


Figure 3. 8-pin DIP

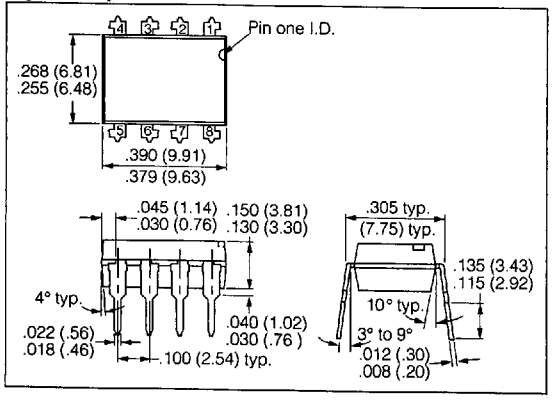


Figure 4. 8-pin, SMD

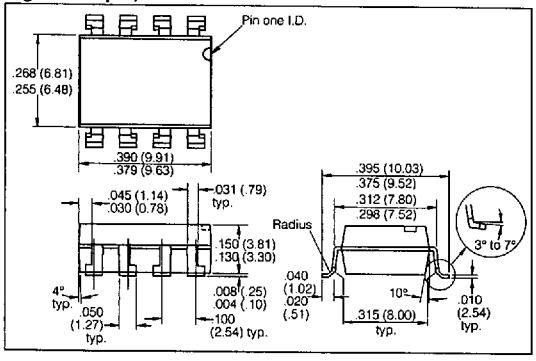


Figure 5. 8-pin SOP (PCMCIA)

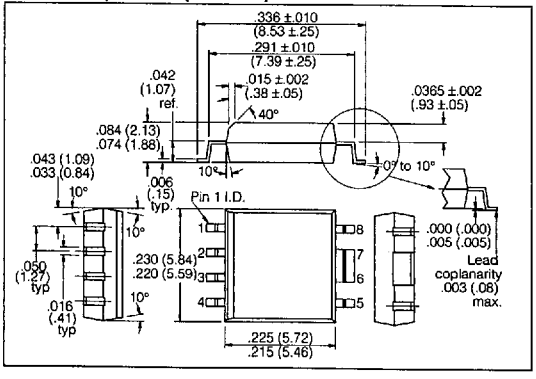


Figure 6. 18-pin SOP (PCMCIA)