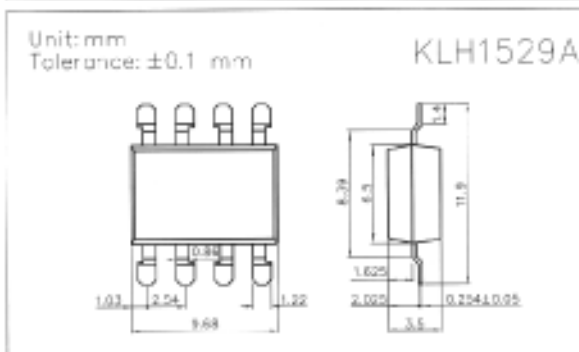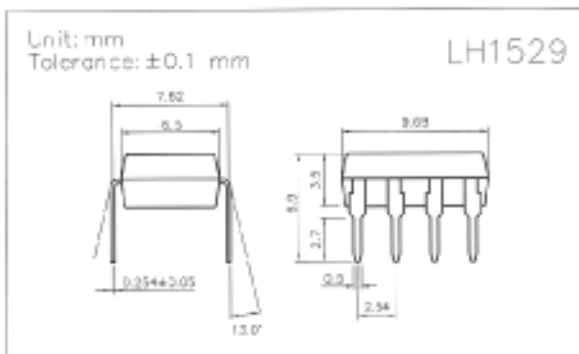**GLOBAL** Components & Controls

FEATURES

- Photo Mos Relay and Optocoupler in One Package
- Package - Single 8 Pin DIP
- I/O Isolation, 3750 V_{RMS}
- Surface Mount Option
- Optocoupler
  - Bi-directional Current Detection
- Mos Relay
  - Typical R_{ON} 20Ω
  - Load Voltage 350 V
  - Load Current 130 mA
  - High Surge Capability
  - Linear, AC/DC Operation
  - Clean Bounce Free Switching
  - Low Power Consumption
  - High Reliability Monolithic Receptor
- Applications
  - Telecommunications
  - Telecom Switching
  - Tip/Ring Circuits
  - Modem Switching (Laptop, Notebook, Pocket Size)
  - Hookswitch
  - Dial Pulsing
  - Ground Start
  - Ringer Injection
  - Loop Detect
  - Ring Detect

DESCRIPTION

The LH1529 Telecom switch consists of an optically coupled Photo Mos Relay and a bi-directional input opto-coupler. The Relay is ideal for performing switchhook and dial-pulse switching while the optocoupler performs ring detection and loop current sensing functions. Both the Relay and opto coupler provide 3750 V_{RMS} of input to output isolation.

The Relay uses high voltage DMOS technology. The Relay features low ON-resistance, high breakdown voltage that protects the relay from telephone line induced lightning surges.

The optocoupler provides bi-directional current sensing via two antiparallel GaAs infrared emitting diodes. The opto channel provides a minimum CTR of 30% at ±1 mA.

Unit: mm
Tolerance: ±0.1 mm   LH1529

Unit: mm
Tolerance: ±0.1 mm   KLH1529A

Absolute Maximum Ratings ($T_A = 25°C$)

Emitter (Input)

Reverse Voltage	5.0V
Continuous Forward Current	50mA
Peak Forward Current (1s)	1A
Power Dissipation	100mW
Derate Linearly from 25°C	1.3mW/°C

Detector (Output)

Output Breakdown Voltage	±350V
Continuous Load Current	±130mA
Power Dissipation	500mW

General Characteristics

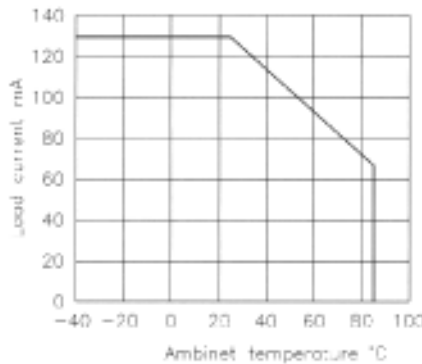|	
Isolation Test Voltage	3750VAC$_{RMS}$
Isolation Resistance $V_{IO} = 500V$, $T_A = 25°C$	≥10^{10}Ω
Total Power Dissipation	550mW
Derate Linearly from 25°C	2.5mW/°C
Storage Temperature Range	-40 to +150°C
Operating Temperature Range	-40 to +85°C
Junction Temperature	100°C
Soldering Temperature, 2mm from case, 10 sec	260°C

● Turn on/Turn off time

1 FORM A
NORMALLY OPEN

Characteristics $(T_A = 25°C)$

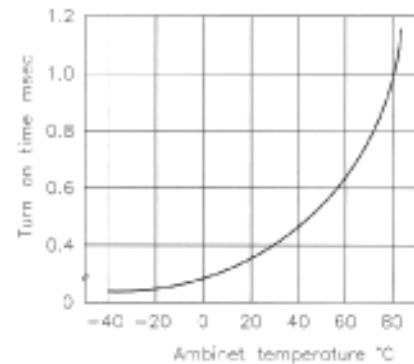| Description	Symbol	Min.	Typ.	Max.	Unit	Test Condition
Emitter (Input)						
Forward Voltage	V_F		1.8	2.0	V	$I_F = 10$ mA
Operation Input Current	I_{FON}			5	mA	$V_L = \pm 20$ V, $I_L = 100$ mA, t = 10 ms
Recovery Input Current	I_{FOFF}	0.2			mA	$V_L = \pm 20$ V, $I_L = < 5$ μA
Detector (output)						
Output Breakdown Voltage	V_B	350			V	$I_B = 50$ μA
Output Off-State Leakage	$I_{T(OFF)}$		0.2	1	μA	$V_T = 100$ V, $I_F = 0$ mA
I/O Capacitance	C_{ISO}		6		pF	$I_F = 0$, f = 1 MHz
ON Resistance	R_{ON}		20	30	Ω	$I_L = 100$ mV, $I_F = 10$ mA
Turn-on Time	T_{ON}		0.3	1.0	ms	$I_F = 10$ mA, $V_L = \pm 20$ V
Turn-off Time	T_{OFF}		0.7	1.5	ms	t = 10 ms, $I_L = \pm 100$ mA

DATA CURVE

Load current vs. ambient temperature
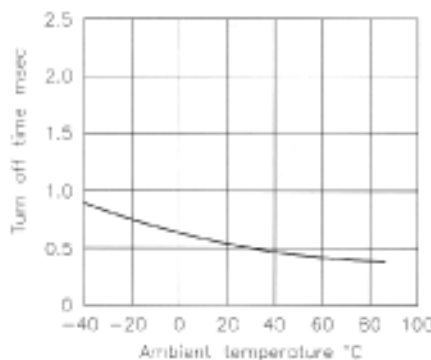Allowable ambient temperature:
-40°C to + 85°C

On resistance vs. ambient temperature
Across terminals 7 and 8 pin
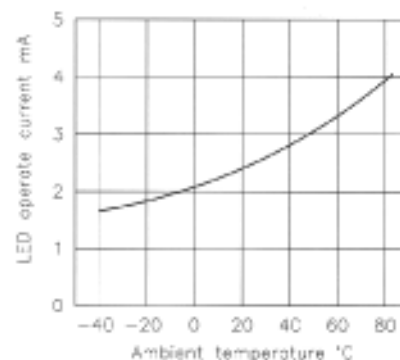LED current: 5 mA
Continuous load current: 130 mA(DC)

Turn on time vs. ambient temperature
Load voltage 350 V(DC)
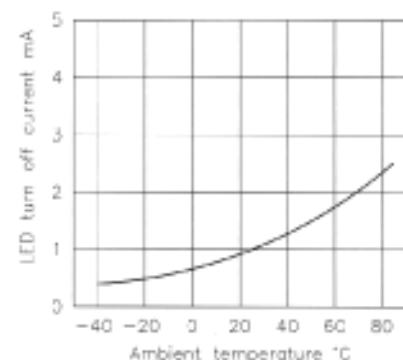LED current : 5 mA
Continuous load current: 130 mA(DC)

Turn off time vs. ambient temperature
LED current: 5 mA
Load voltage: 350V (DC)
Continuous load current: 130 mA(DC)

LED operate vs. ambient temperature
Load voltage: 350V (DC)
Continuous load current: 130 mA(DC)

LED turn off current vs. ambient temperature
Load voltage: 350V (DC)
Continuous load current: 130 mA (DC)