OKI electronic components

OCS37

Optical PNPN Switches

GENERAL DESCRIPTION

The OCS37 is an optical PNPN switch, combining an infrared light emitting diode and PNPN elements (photothyristors) in a two-channel configuration. Encased in a 8-pin plastic package, the device is capable of withstanding high voltages.
The OCS37 consists of two output PNPN elements (bidirectional circuits), which are housed in a single package. Each of the two elements can be controlled independently.

FEATURES

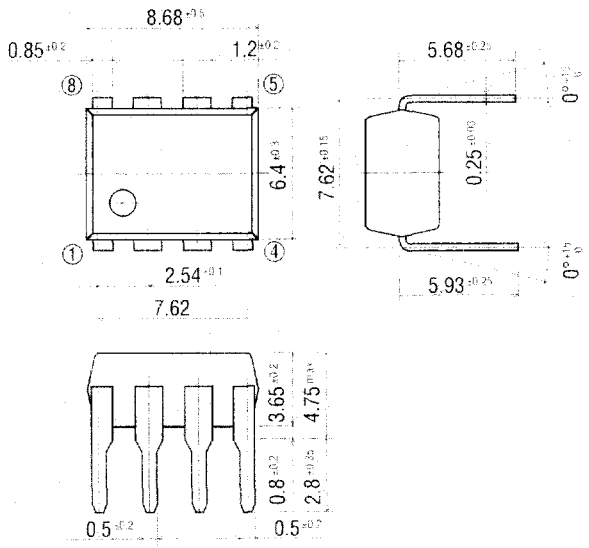
- Forward blocking voltage (V_{BO}): 320 V (Min.)
- Trigger input current (I_{GO}): 11 mA (Max.)

APPLICATIONS

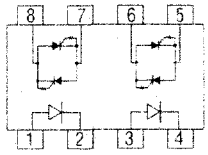
- Electronic automatic exchange
- Key telephone system
- Contactless switch
- Optically coupled circuits

PIN CONFIGURATION

(Unit: mm)



• Pin Connection Diagram



1: Anode (LED)
2: Cathode (LED)
3: Anode (LED)
4: Cathode (LED)
5: Output (PNPN)
6: Output (PNPN)
7: Output (PNPN)
8: Output (PNPN)

ABSOLUTE MAXIMUM RATINGS

Parameter		Symbol	Test Condition	Rating	Unit
Input (LED)	Forward Current	I_G	Ta=25°C	60	mA
	Reverse Voltage	V_{RL}		5	V
Output (PNPN)	Forward Blocking Voltage	V_{BO}		350	V
	Continuous ON-State Current	I_F		100	mA
	Surge ON-State Current *	I_{SUG}		1.4	A
Isolation Voltage		V_{I-O}		1500	V
Operating Temperature		T_{opr}	—	−20 to +70	°C
Storage Temperature		T_{stg}	—	−30 to +100	°C

* A single 1 ms pulse

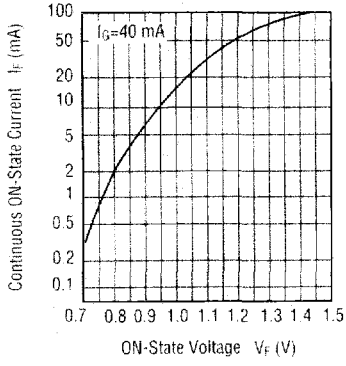
ELECTRICAL CHARACTERISTICS

(Ambient Temperature Ta=25°C)

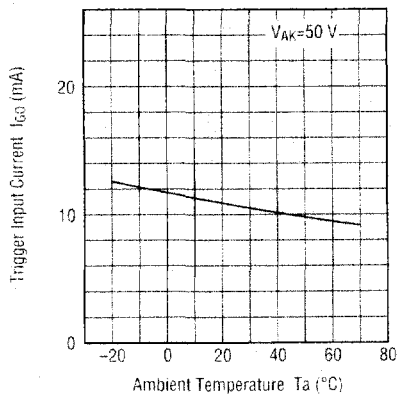
Parameter		Symbol	Test Condition	Min.	Typ.	Max.	Unit
Input Characteristics	Forward Voltage	V_{FL}	I_G=40 mA	—	—	1.4	V
	Reverse Current	I_{RL}	V_{RL}=5 V	—	—	5	μA
	OFF-State Current	I_{BO}	V_{AK}=320 V	—	—	5	μA
Output Characteristics	ON-State Voltage	V_F	I_F=20 mA, I_G=40 mA	—	—	1.3	V
	dV/dt Capability	dV/dt	dt=0.1 μs	120	—	—	V/0.1μs
	Holding Current	I_H	ON to OFF	—	—	1.3	mA
Coupled Characteristics	Trigger Input Current	I_{GO}	V_{AK}=50 VDC	—	—	11	mA

TYPICAL CHARACTERISTICS

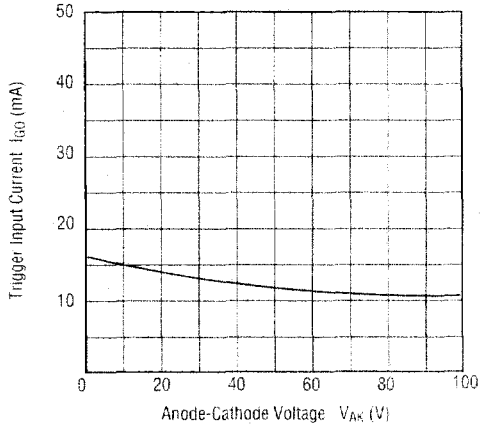
- **Continuous ON-State Current vs. ON-State Voltage (Ta=25°C)**



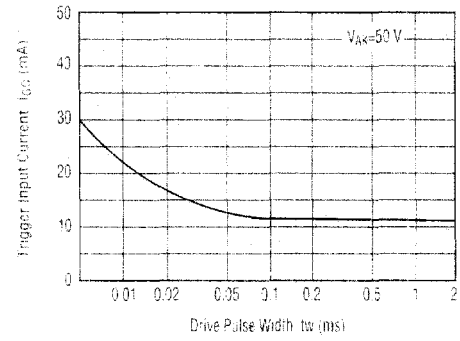
- **Trigger Input Current vs. Ambien Temperature**



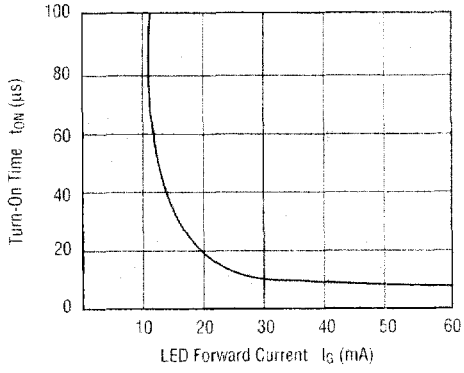
- **Trigger Input Current vs. Anode-Cathode Voltage (Ta=25°C)**



- **Trigger Input Current vs. Drive Pulse Width (Ta=25°C)**



- **Turn-On Time vs. LED Forward Current (Ta=25°C)**



- **dV/dt Capability vs. Ambient Temperature**