

# OKI electronic components

## OCS40

### Optical PNP Switches with OFF Function

#### GENERAL DESCRIPTION

The OCS40 adds an OFF function to the standard optical PNP switch to provide an optically controlled ON-OFF function. In addition to standard latch functions, the OCS40 also offers a pulse-drive-controlled ON-OFF capability.

#### FEATURES

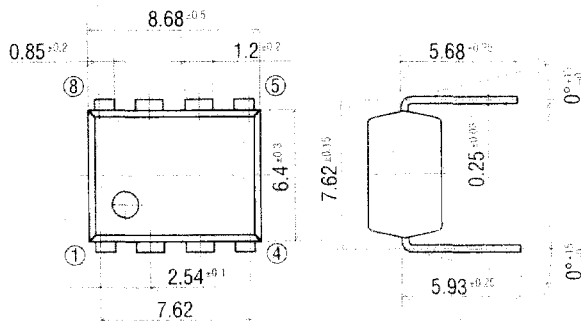
- ON-OFF control using pulse
- Low drive current ( $I_{CON}$ ,  $I_{GOFF}$ : 10 mA Max.)
- High blocking voltage ( $V_{BO}$ ,  $V_{BD}$ : 350 V Min.)
- Total I/O isolation

#### APPLICATIONS

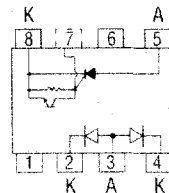
- Electronic automatic exchange
- Key telephone system
- Home electronics
- Measuring instrument
- Substitute for latching relay
- Optically coupled circuits

#### PIN CONFIGURATION

(Unit: mm)



#### • Pin Connection Diagram



- |                  |                 |
|------------------|-----------------|
| 1: NC            | (No connection) |
| 2: OFF Cathode   | (LED)           |
| 3: ON, OFF Anode | (LED)           |
| 4: ON Cathode    | (LED)           |
| 5: PNPN Anode    |                 |
| 6: NC            | (No connection) |
| 7: PIN cut       |                 |
| 8: PNPN Cathode  |                 |

## ABSOLUTE MAXIMUM RATINGS

	Parameter	Symbol	Test Condition	Rating	Unit
Input (LED)	Forward Current	$I_G$		60	mA
	Reverse Voltage	$V_{RL}$		5	V
	Forward Blocking Current	$V_{BC}$		350	V
Output (PNPN)	Reverse Voltage	$V_{BD}$	$T_a=25^\circ\text{C}$	350	V
	Continuous ON-State Current	$I_F$		100	mA
	Surge ON-State Current	$I_{SUG}$		1.4	A
Isolation Voltage	$V_{in-out}$			1500	V
Operating Temperature	$T_{OP}$	—		-20 to +70	$^\circ\text{C}$
Storage Temperature	$T_{stg}$	—		-55 to +125	$^\circ\text{C}$

\* A single 1 ms pulse

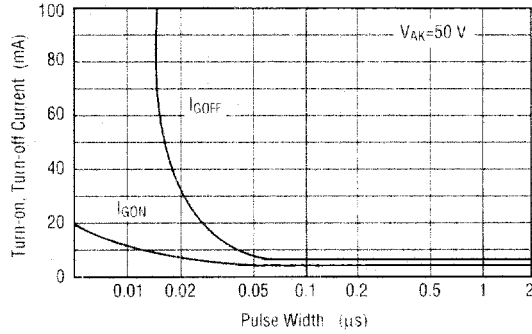
## ELECTRICAL CHARACTERISTICS

(Ambient Temperature  $T_a=25^\circ\text{C}$ )

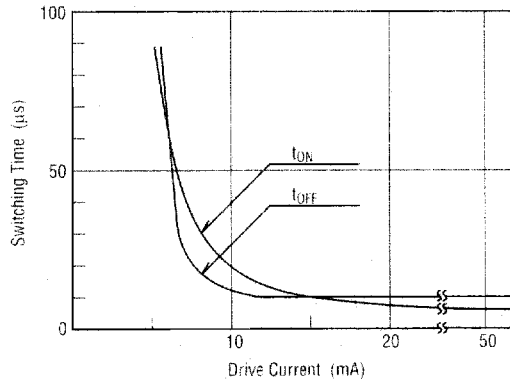
	Parameter	Symbol	Test Condition	Min.	Typ.	Max.	Unit
Input Characteristics	Forward Voltage	$V_{FL}$	$I_G=40\text{ mA}$	—	—	1.4	V
	Reverse Current	$I_{RL}$	$V_{RL}=5\text{ V}$	—	—	5	$\mu\text{A}$
	OFF-State Current	$I_{BO}$	$V_{BD}=320\text{ V}$	—	—	5	$\mu\text{A}$
Output Characteristics	Reverse Current	$I_{BD}$	$V_{BC}=320\text{ V}$	—	—	5	$\mu\text{A}$
	ON-State Voltage	$V_F$	$I_F=20\text{ mA}, I_G=40\text{ mA}$	—	—	1.0	V
	dV/dt Capability	dV/dt	—	80	—	—	V/ $\mu\text{s}$
	Holding Current	$I_H$	ON to OFF $V_{AK}=50\text{ V}$	—	—	1.3	mA
Coupled Characteristics	Turn on Current	$I_{GON}$	$V_{AK}=50\text{ V}, I_{G\text{OFF}}=0.35\text{ mA}$	—	—	10	mA
	Turn off Current	$I_{G\text{OFF}}$	$I_F=100\text{ mA}$	—	—	10	mA

TYPICAL CHARACTERISTICS

- Turn-on, Turn-off Current vs. Pulse Width ( $T_a=25^\circ\text{C}$ )

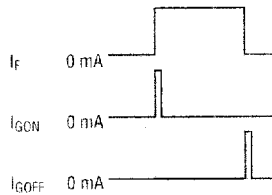


- Switching Time vs. Drive Current ( $T_a=25^\circ\text{C}$ )



- Drive Example

i) Pulse Drive



ii) Offset Drive  
(High  $dV/dt$  capability is obtained)

