This version: Jan. 1998
Previous version: May. 1997

OKI electronic components

OC800

Reflector-Type Photo Interrupter

GENERAL DESCRIPTION

The OC800 is a reflector-type photo interrupter that contains a high-output infrared light emitting diode and high-sensitivity phototransistor.

FEATURES

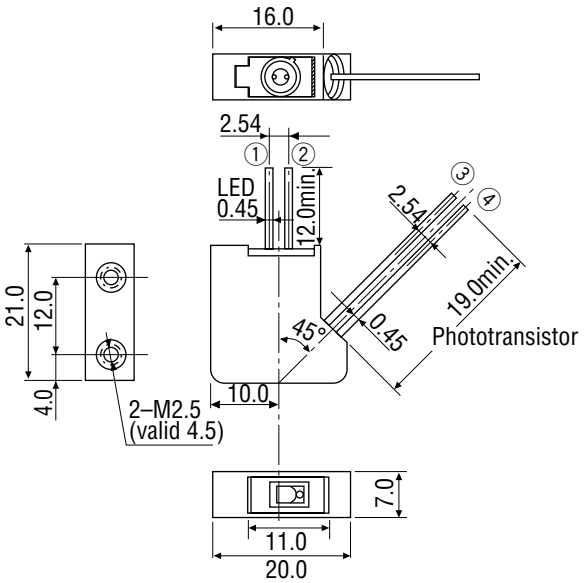
- High output current
- High resolution (capable of reading 0.25 mm bar codes)
- Outstanding durability and high reliability

APPLICATIONS

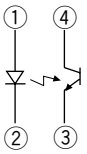
- Bar code reader
- Photoswitch
- Position detector
- Paper edge sensor

PIN CONFIGURATION

(Unit: mm)



• Pin Connection Diagram



1: Anode
2: Cathode
3: Emitter
4: Collector

ABSOLUTE MAXIMUM RATINGS

Parameter		Symbol	Test Condition	Rating	Unit
Input	Foward Current	I_F	Ta=25°C	100	mA
	Pulse Forward Current *1	I_{FRM}		1	A
	Reverse Voltage	V_R		6	V
	Power Dissipation	P_D		200	mW
Output	Collector-emitter Voltage	V_{CEO}		20	V
	Emitter-collector Voltage	V_{ECO}		5	V
	Power Dissipation	P_C		150	mW
Operating Temperature		T_{opr}	—	–20 to +65	°C
Storage Temperature		T_{stg}	—	–20 to +85	°C

*1 Pulse width tw=100 μs, cycle T=10 ms

- **Wavelength at Peak Emission/Sensitivity**
  Light source : 910 nm
  Photodetector : 800 nm

ELECTRICAL AND OPTICAL CHARACTERISTICS

(Ambient Temperature Ta=25°C)

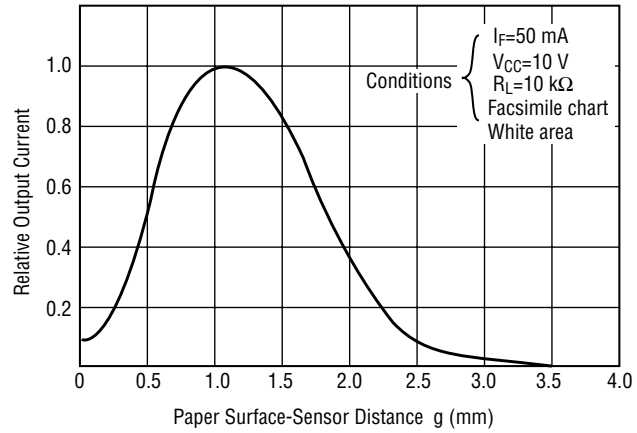
Parameter		Symbol	Min.	Typ.	Max.	Unit	Test Condition
Input	Foward Voltage	V_F	—	1.55	2.0	V	I_F=100 mA
	Reverse Current	I_R	—	—	10	μA	V_R=6 V
Output	Dark Current	I_D	—	—	100	nA	V_{CE}=9 V
Coupled	Photocurrent	I_P	4.0	—	100	μA	*1
	S/N	—	2.5	—	—	—	
	Photocurrent	I_P	5.5	—	120	μA	*2

*1 I_F=50 mA, V_{CC}=10 V, R_L=10 kΩ; distance between paper surface and sensor g=1.0 mm
Facsimile chart 0.25mm bar code

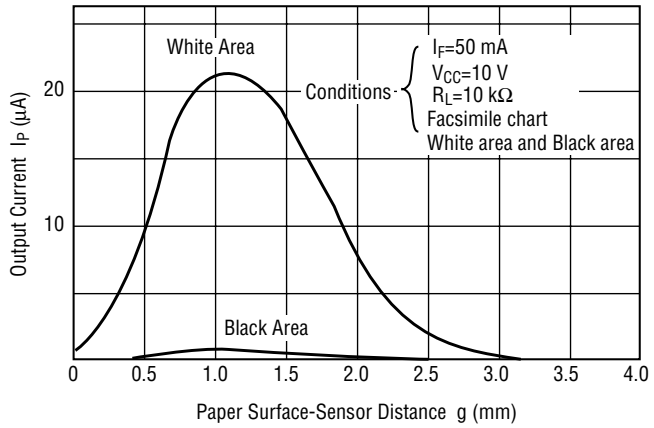
*2 I_F=50 mA, V_{CC}=10 V, R_L=10 kΩ; distance between paper surface and sensor g=1.0 mm
White area of facsimile chart

TYPICAL CHARACTERISTICS

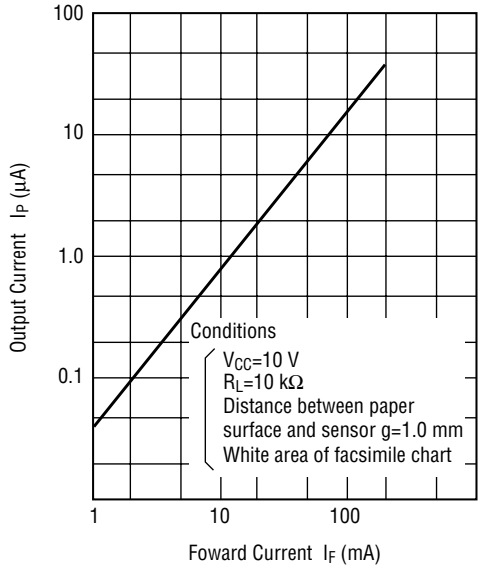
- **Output Current vs. Paper Surface-Sensor Spacing (Ta=25°C)**



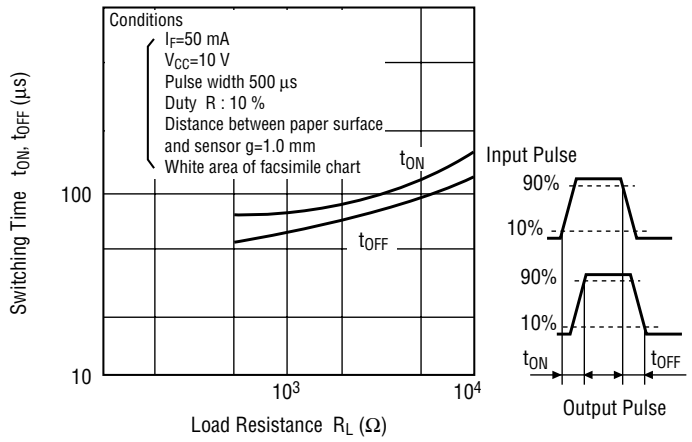
- **Output Current vs. Paper Surface-Sensor Spacing (Ta=25°C)**



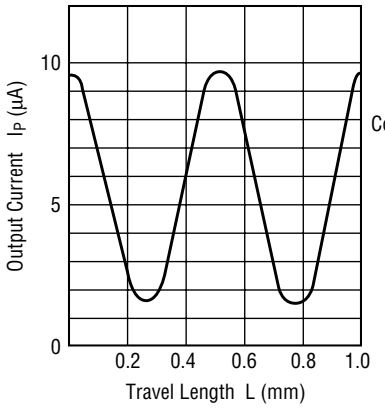
- **Output Current vs. Forward Current (Ta=25°C)**



- **Switching Time vs. Load Resistance (Ta=25°C)**

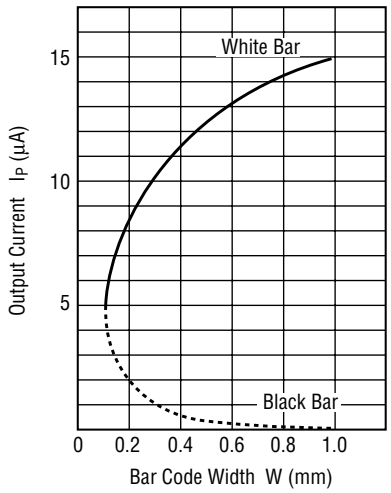


- **Bar Code (0.25 mm) Output Current vs. Travel Length (Ta=25°C)**



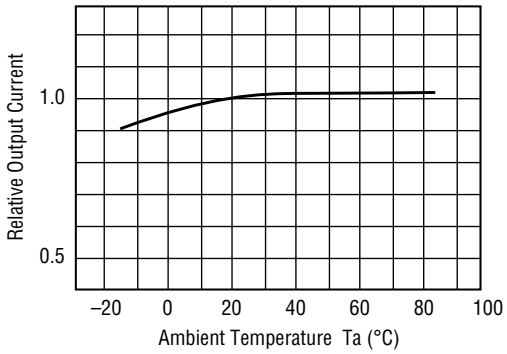
Conditions
I_F=50 mA
V_{CC}=10 V
R_L=10 kΩ
Distance between paper surface and sensor g=1.0 mm
Facsimile chart bar code 0.25 mm

- **Output Current vs. Bar Code Width (Ta=25°C)**



Conditions
I_F=50 mA
V_{CC}=10 V
R_L=10 kΩ
Distance between paper surface and sensor g=1.0 mm
Facsimile chart bar code

- **Output Current vs. Ambient Temperature**



Conditions
I_F=50 mA
V_{CC}=10 V
R_L=10 kΩ
Distance between paper surface and sensor g=1.0 mm
White area of facsimile chart

- **Test Circuit**