

OKI electronic components

OPU817

Reflector-Type Photo Interrupter

GENERAL DESCRIPTION

The OPU817 is a reflector-type photo interrupter that contains a high-output infrared light emitting diode and a high-sensitivity phototransistor.

FEATURES

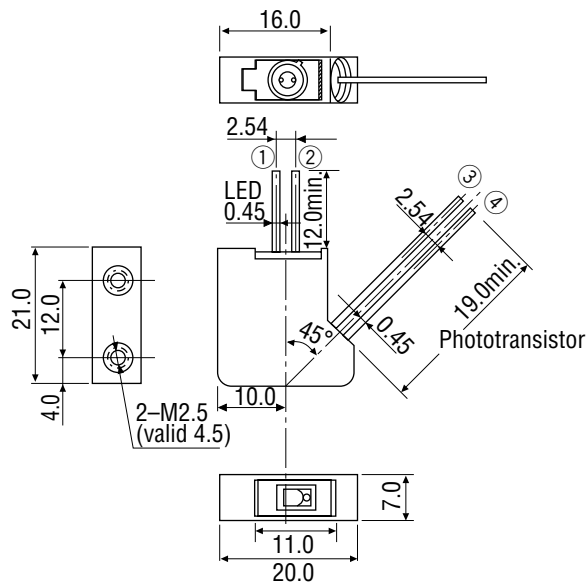
- High output current
- High resolution (capable of reading 0.17 mm bar codes)
- Outstanding durability and high reliability

APPLICATIONS

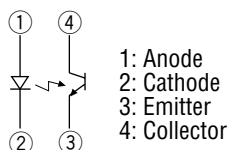
- Bar code reader
- Photoswitch
- Position detector
- Paper edge sensor

PIN CONFIGURATION

(Unit: mm)



• Pin Connection Diagram



ABSOLUTE MAXIMUM RATINGS

Parameter		Symbol	Test Condition	Rating	Unit
Input	Forward 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 $t_w=100 \mu s$, cycle $T=10 ms$

- **Wavelength at Peak Emission/Sensivity**

Light source : 910 nm

Photodetector : 800 nm

ELECTRICAL AND OPTICAL CHARACTERISTICS

(Ambient Temperature Ta=25°C)

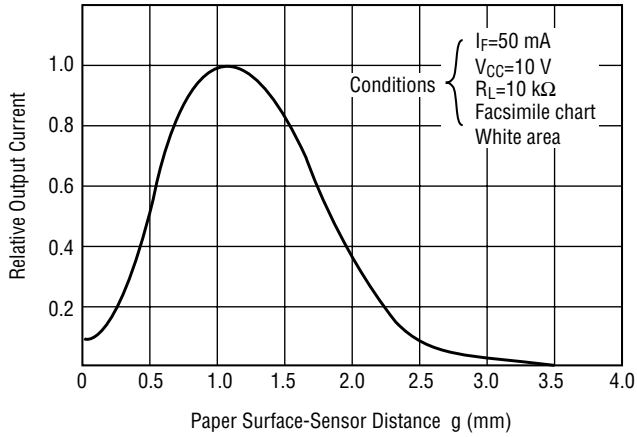
Parameter		Symbol	Min.	Typ.	Max.	Unit	Test Condition
Input	Forward Voltage	V_F	—	1.55	2.0	V	$I_F=100 mA$
	Reverse Current	I_R	—	—	10	μA	$V_R=6 V$
Output	Dark Current	I_D	—	—	100	nA	$V_{CE}=9 V$
Coupled	Photocurrent	I_P	1.5	—	40	μA	*1
	S/N	—	2.5	—	—	—	
	Photocurrent	I_P	5.5	—	120	μA	*2

*1 $I_F=50 mA$, $V_{CC}=10 V$, $R_L=10 k\Omega$; distance between paper surface and sensor $g=1.0 mm$
Facsimile chart 0.17 mm bar code

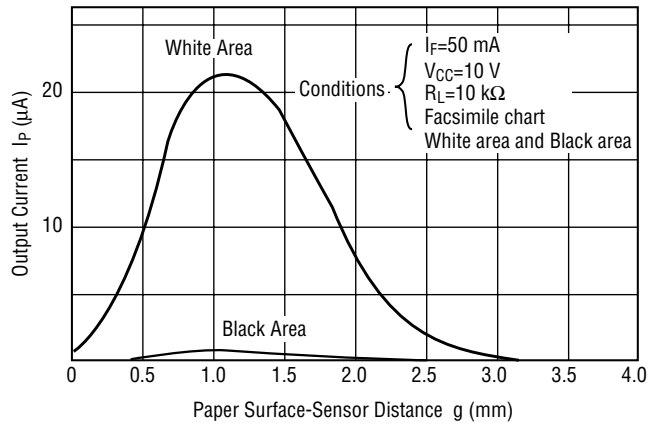
*2 $I_F=50 mA$, $V_{CC}=10 V$, $R_L=10 k\Omega$; distance between paper surface and sensor $g=1.0 mm$
White area of facsimile chart

TYPICAL CHARACTERISTICS

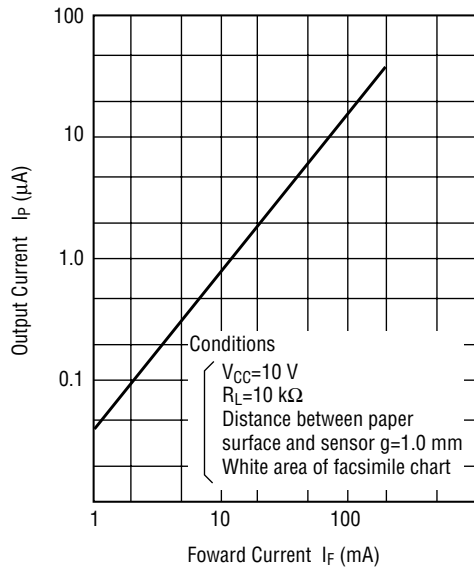
- Output Current vs. Paper Surface-Sensor Spacing ($T_a=25^\circ\text{C}$)



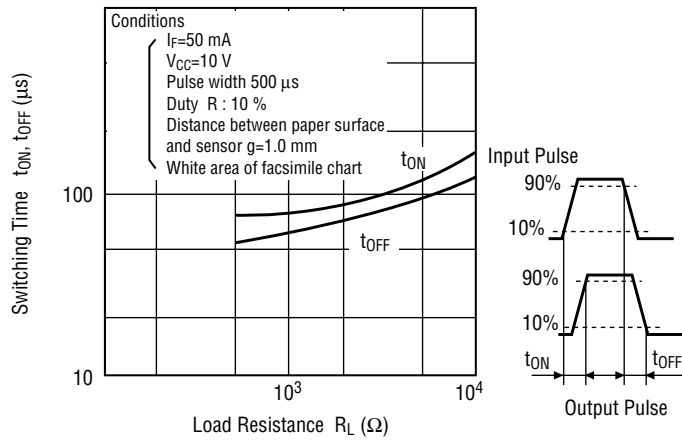
- Output Current vs. Paper Surface-Sensor Spacing ($T_a=25^\circ\text{C}$)



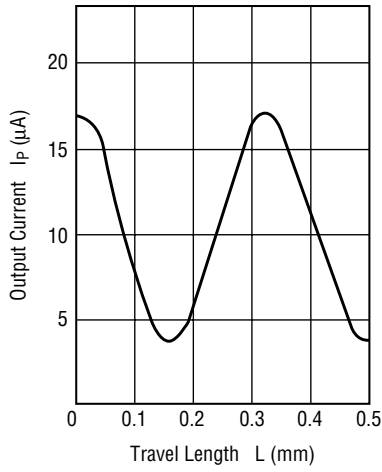
• Output Current vs. Forward Current (Ta=25°C)



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

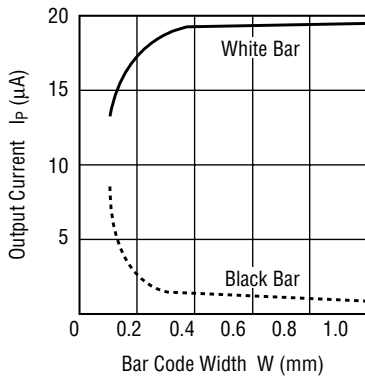


• Bar Code (0.17mm) Output Current vs. Travel Length ($T_a=25^\circ\text{C}$)



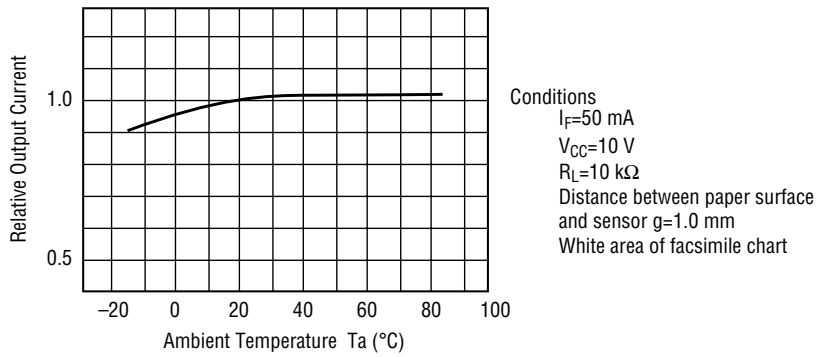
Conditions
 $I_F=50\text{ mA}$
 $V_{CC}=10\text{ V}$
 $R_L=10\text{ k}\Omega$
 Distance between paper surface
 and sensor $g=1.0\text{ mm}$
 Facsimile chart bar code 0.17 mm

• Output Current vs. Bar Code Width ($T_a=25^\circ\text{C}$)



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

- Output Current vs. Ambient Temperature



- Test Circuit

