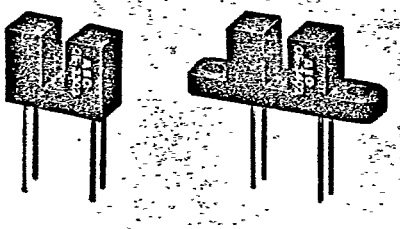
Interruptor-Type Photosensors

OS-3302/3402 • Low-cost slit type

The OS-3302 and OS-3402 are visible light cutoff-type photosensors which use a GaAs infrared emitting and high-sensitivity Si phototransistor. Their small size makes them suitable for PCB mounting and for use inside equipment.

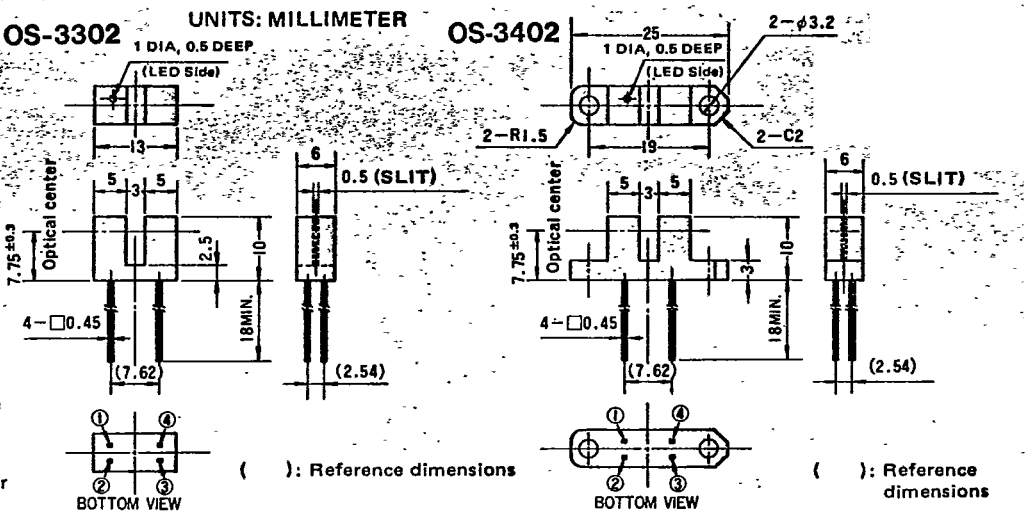
● Features
- Simple structure, suitable for a wide range of applications.
- Compact and lightweight.
- Designed for immunity to stray ambient light.

● Applications
- Timing position detection for rotating machinery such as copiers and printers.
- Start/end detection for cassette and VTR tape equipment.
- Automatic control equipment.
- Photoelectric counters and switches.

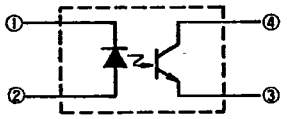


OS-3302 OS-3402

UNITS: MILLIMETER



● Connection Diagram



① Cathode
② Anode
③ Emitter
④ Collector

● Absolute Maximum Ratings (Ta = 25°C)

	Parameter	Symbol	Value	Units
Light-emitting side	Forward current	I_F	50	mA
	Reverse voltage	V_R	5	V
Light-receiving side	Collector-emitter voltage	V_{CEO}	30	V
	Emitter-collector voltage	V_{ECO}	5	V
	Collector current	I_C	50	mA
	Collector power dissipation	P_C	75	mW

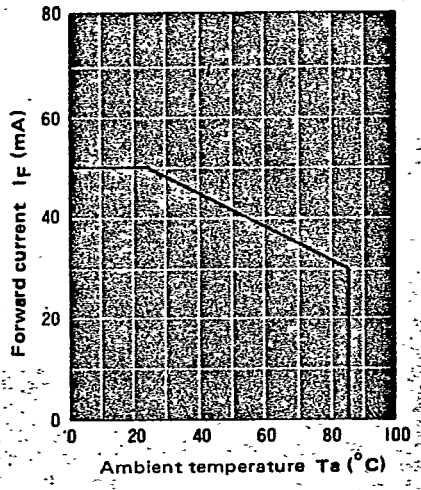
● Mechanical Characteristics

Parameter	Limits
Resistance to vibration	Vibration frequency of 10~55Hz amplitude of 1.5mmp-p, 60 sec. X, Y, Z 3 directions, 30 min.
Resistance to shock	30G
Operating temperature range (Topr)	−25°C~+85°C
Storage temperature range (Tstg)	−30°C~+100°C

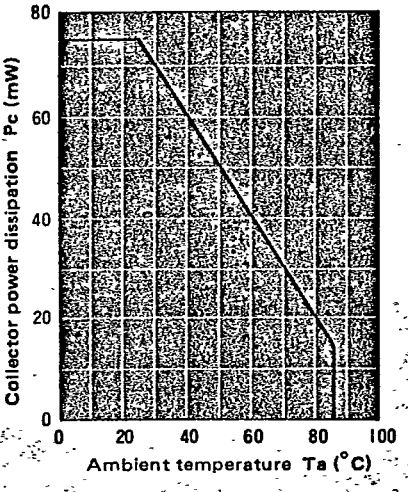
● Electrical Characteristics (Ta = 25°C)

	Parameter	Symbol	Test conditions	Min.	Typ.	Max.	Units
Light-emitting side	Forward voltage	V_F	I_F=10mA	1.00	1.15	1.30	V
	Reverse current	I_R	V_R=5V	—	—	10	μA
	Pin-to-pin capacitance	Ct	V=0, f=1MHz	—	30	—	pF
Light-receiving side	Dark current	I_D(I_{CEO})	V_{CE}=24V, I_F=0	—	5	100	nA
	Pin-to-pin capacitance	Ct	V=0, f=1MHz	—	13	—	pF
Transmitting characteristics	Collector current	I_C	I_F=20mA, V_{CE}=5V	0.5	2.0	—	mA
	Collector-emitter saturation voltage	V_{CE} (Sat)	I_F=20mA I_C=0.25mA	—	0.1	0.4	V
	Rise time	tr	V_{CC}=5V, I_C=2mA R_L=100Ω	—	6	—	μS
	Fall time	tf		—	6	—	μS

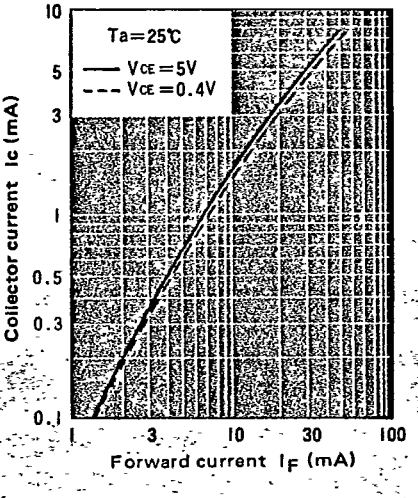
● I_F–Ta



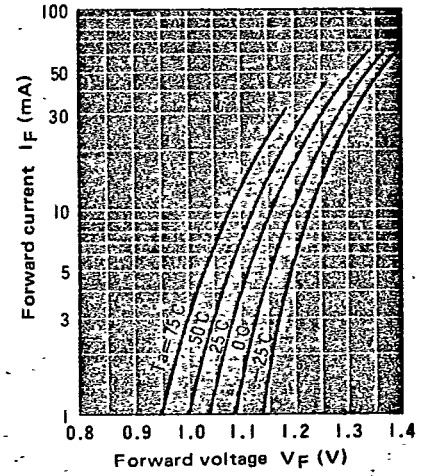
● Pc–Ta



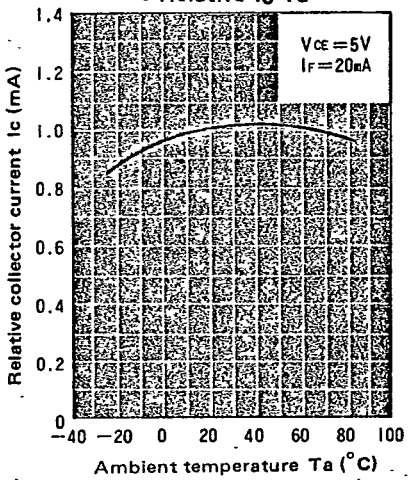
● I_C–I_F



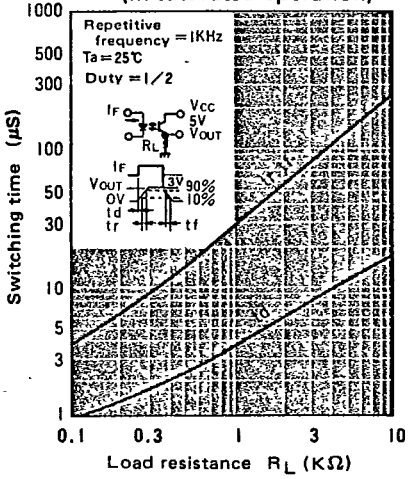
● I_F–V_F



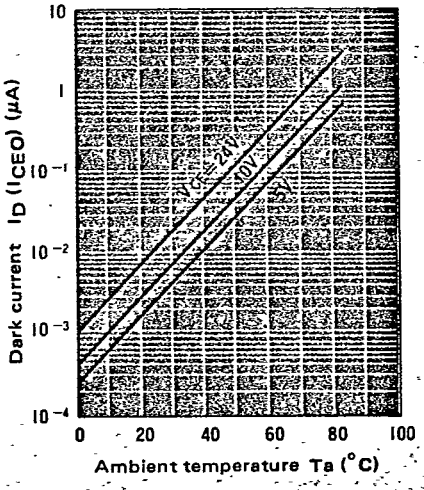
● Relative I_C-Ta



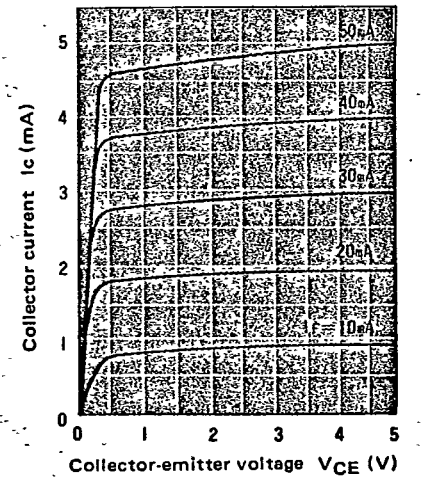
● Switching Characteristics (in-saturated operation)



● I_{CEO}–Ta



● I_C–V_{CE}



● Sensing distance characteristics