

OKI electronic components

OC340

PHOTO COUPLER

GENERAL DESCRIPTION

The OC340 is a photo coupler formed by combining a GaAs infrared light emitting diode and a phototransistor. Encased in a 6-pin plastic package, the OC340 is suitable for such applications as an interface between circuits with different phases or for isolation of ground loops.

FEATURES

- Current transfer ratio: 30% min.
- Isolation voltage: 2,500 V min.
- High-speed response
- Available for direct coupling with TTL or MOS IC
- 6-pin plastic DIP
- UL recognized — File number E86831

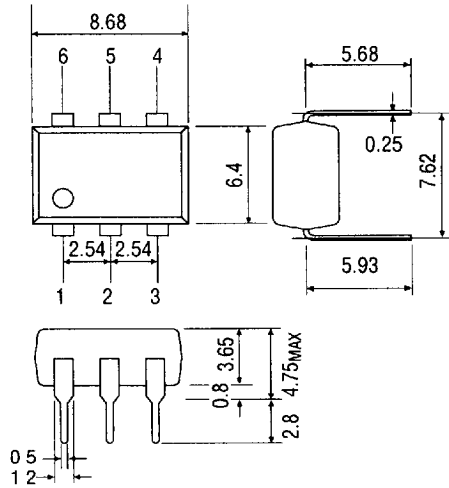
APPLICATIONS

- Pulse transformer
- Power separating circuit
- Level conversion circuit
- Optically coupled transistor circuit

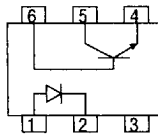
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PIN CONFIGURATION

(Unit: mm)



• Pin Connection Diagram



- | | |
|--------------|--------------------|
| 1. Anode | (LED) |
| 2. Cathode | (LED) |
| 3. NC | |
| 4. Emitter | (Photo transistor) |
| 5. Collector | (Photo transistor) |
| 6. Base | (Photo transistor) |

ABSOLUTE MAXIMUM RATINGS

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

	Parameter	Symbol	Rating	Unit
Input Diode (LED)	Power Dissipation	P_D	100	mW
	Derate Linearly from 25°C	$\Delta P_D/^{\circ}\text{C}$	1.0	mW/ $^{\circ}\text{C}$
	Forward Current	I_F	60	mA
	Pulse Forward Current *	I_{FM}	0.5	A
	Reverse Voltage	V_R	3.0	V
Output Transister (Photo-Tr)	Power Dissipation	P_C	150	mW
	Derate Linearly from 25°C	$\Delta P_C/^{\circ}\text{C}$	1.5	mW/ $^{\circ}\text{C}$
	Collector-Base Voltage	V_{CBO}	40	V
	Collector-Emitter Voltage	V_{CEO}	30	V
	Emitter-Base Voltage	V_{EBO}	5	V
Isolation Voltage		V_{in-out}	2500	V
Operating Temperature		T_{opr}	-20 to +100	$^{\circ}\text{C}$
Storage Temperature		T_{stg}	-55 to +100	$^{\circ}\text{C}$

* At pulse width 100 μs , cycle 10 ms

- Wavelength at Peak Emission**

Light source : 940 nm

Photodetector: 800 nm

ELECTRICAL CHARACTERISTICS

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

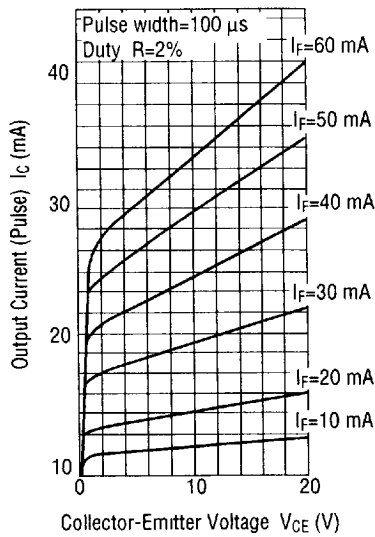
	Parameter	Symbol	Text Conditions	Min.	Typ.	Max.	Unit
Input Characteristics	Forward Voltage	V_F	$I_F=50\text{ mA}$	—	1.2	1.6	V
	Reverse Current	I_R	$V_R=3.0\text{ V}$	—	—	10	μA
Output Characteristics	Collector-Emitter Breakdown Voltage	BV_{CEO}	$I_C=0.5\text{ mA}$	30	—	—	V
	Collector-Base Breakdown Voltage	BV_{CBO}	$I_C=10\text{ }\mu\text{A}$	40	—	—	V
	Emitter-Base Breakdown Voltage	BV_{EBO}	$I_E=10\text{ }\mu\text{A}$	5	—	—	V
	DC Forward Current Gain	h_{FE}	—	—	600	—	—
	Dark Current	I_{CEO}	$I_F=0\text{ mA}$, $V_{CE}=10\text{ V}$	—	—	100	nA
Transfer Characteristics	Output Current	I_C	$V_{CE}=5\text{ V}$, $I_F=5\text{ mA}$	1.5	—	20	mA
	Collector-Emitter Saturation Voltage	$V_{CE(SAT)}$	$I_C=2\text{ mA}$, $I_F=16\text{ mA}$	—	—	0.4	V
	Isolation Resistance	R_{in-out}	$V_{in-out}=1\text{ kV}$	10^{11}	—	—	Ω
	Input to Output Capacitance	C_{in-out}	—	—	1.3	—	pF
Response Characteristics	Rise Time	t_r	—	—	4	—	μs
	Fall Time	t_f	—	—	4	—	μs

* Specifications are subject to change without notice.

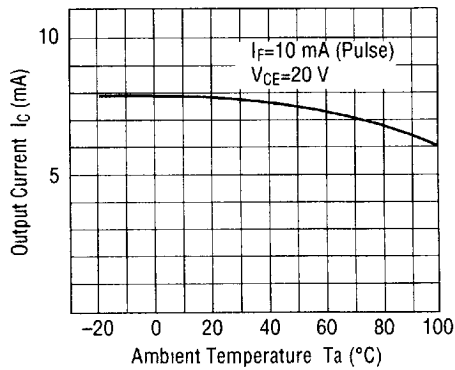
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TYPICAL CHARACTERISTICS

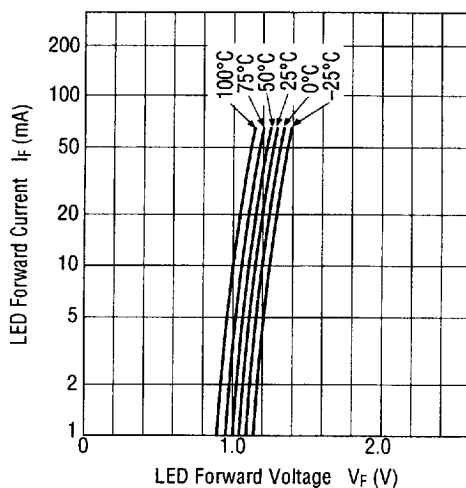
• Output Current vs. Collector-Emitter Voltage (Ta=25°C)



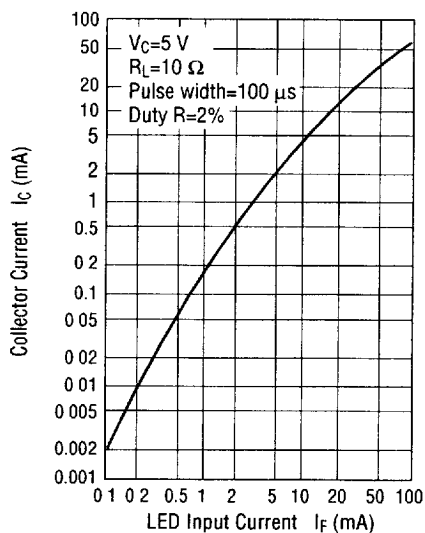
• Output Current vs. Ambient Temperature



- LED Forward Current vs. LED Forward Voltage

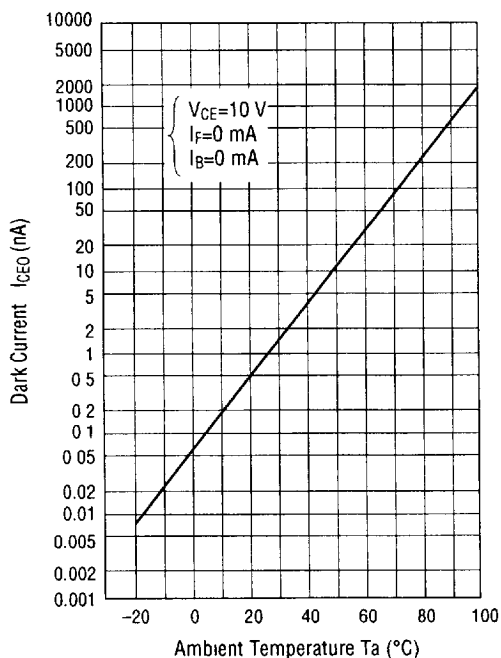


- Output Current vs. LED Input Current



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- Dark Current vs. Ambient Temperature



- Switching Time vs. Load Resistance

