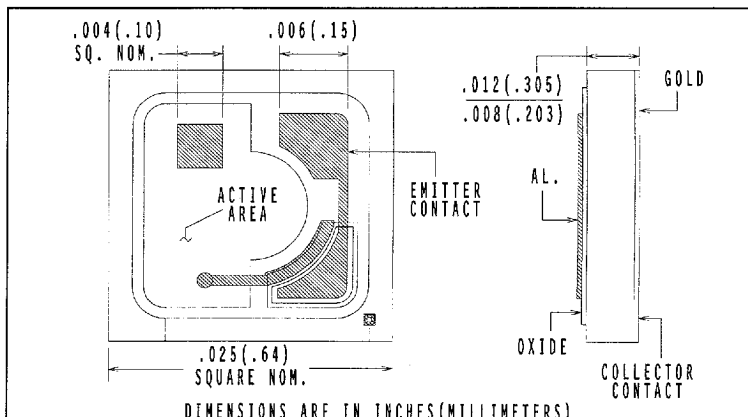
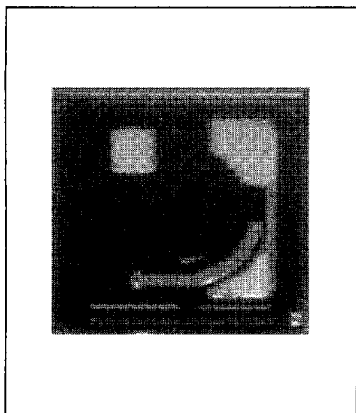


NPN Silicon Photodarlington Chip Type OPC300R



Features

- High Collector Current
- Improved current sinking characteristics
- Silicon nitride passivation
- Enhanced low current gain

Description

Optek Technology photosensor chips are fabricated using the latest silicon planar diffused technology and are silicon nitride passivated for long term stability. All photosensors have an anti-reflective coating over the active area to ensure maximum absorption of irradiated light. Metal traces are passivated to protect against mechanical damage.

Optek chip warranty excludes any damage resulting from improper bonding or alloying techniques.

Packaging Options

OPC300RVP Vials
OPC300RTP Sawn on Tape
OPC300RWP Wafer Pack
OPC300RSP Unsawn Slice
Special packaging and testing available upon request.

Absolute Maximum Ratings⁽¹⁾ ($T_A = 25^\circ\text{C}$ unless otherwise noted)

Operating Temperature	-40° C to +85° C
Storage Temperature	-65° C to +150° C
Collector-Emitter Voltage	30 V
Emitter-Collector Voltage	5.0 V
Power Dissipation	50 mW ⁽²⁾

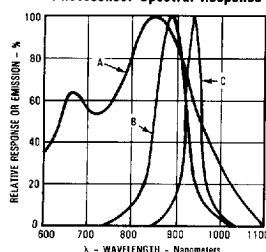
Electrical Characteristics ($T_A = 25^\circ\text{C}$ unless otherwise noted)

SYMBOL	PARAMETER	MIN	TYP	MAX	UNITS	TEST CONDITIONS
$V_{(BR)CEO}$	Collector-Emitter Breakdown Voltage	30	60		V	$I_C = 100\ \mu\text{A}$
$V_{(BR)ECO}$	Emitter-Collector Breakdown Voltage	7.0	12.5		V	$I_E = 100\ \mu\text{A}$
I_{CEO}	Collector Dark Current		<10	100	nA	$V_{CE}=10\ \text{V}, \Phi=0\ \mu\text{W}$
R_λ	Responsivity		0.2		A/W	$\Phi=10\ \mu\text{W}^{(3)}\text{plain}$
h_{FE}	Current Gain	3K				$V_{CE}=5\ \text{V}, I_b=1\ \mu\text{A}$

Notes: (1) All maximum ratings are determined with the chip mounted on a dimpled TO-18 header using Optek techniques. (2) Maximum power dissipation is a function of the package in which the chip is housed and the environment in which the assembled package will be used. (3) Light source is a GaAs LED, $\lambda_P = 935\ \text{nm}$, typical.

Typical Performance Curves

Photosensor Spectral Response



Test Conditions (LED):
 $T_A = 25^\circ\text{C}$, $I_F = 100\ \text{mA}$, $DC = 0.1\ \text{A}$, $PW = 100\ \mu\text{s}$
Peak Wavelength - λ_P : (A) XSTR - 850 ± 30 nm
(B) LED GaAs - 890 ± 20 nm
(C) LED GaAs - 935 ± 15 nm