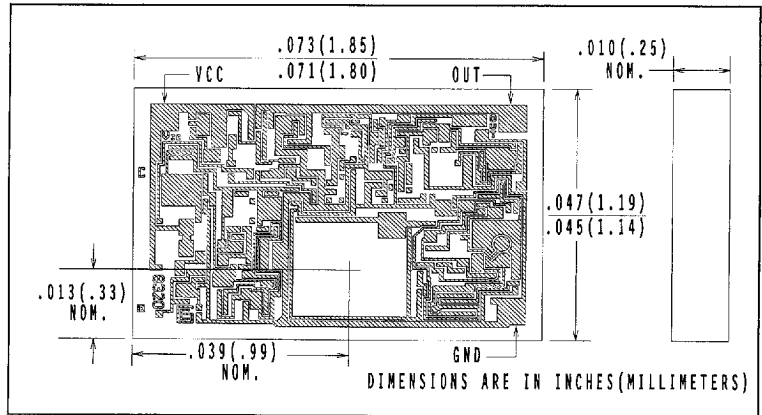
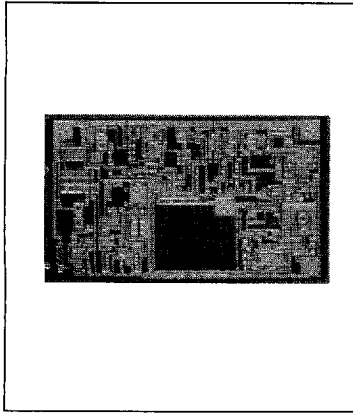


Photologic® Chips

Types OPC8320, OPC8321, OPC8322, OPC8323



Features

- Internal voltage regulator for 4.5V to 18V operation
- Open collector or totem-pole output
- Drive up to 10 TTL loads
- Data rates to 250 kBaud

Description

The OPC8320 family of photologic® chips are bipolar monolithic integrated circuits consisting of a photodiode, a voltage regulator, a linear amplifier, and a Schmitt trigger on a single silicon chip. Four output options are available, buffer-totem pole (OPC8320), buffer-open collector (OPC8321), inverter-open collector (OPC8322), and inverter-totem pole (OPC8323). Featured is logic level output and up to 16mA of sink current for direct driving up to 10 TTL loads. The Schmitt trigger provides hysteresis for high noise immunity.

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

Packaging Options for 8320 Series

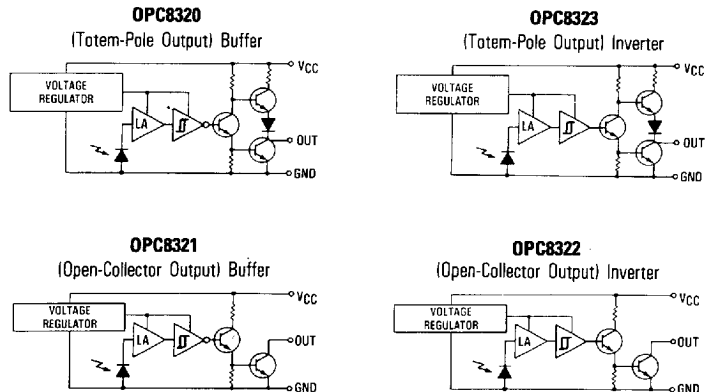
OPCXXXXTP Sawn on Tape
OPCXXXXWP Waffle Pack
OPCXXXXSP Unsawn Slice
Special packaging and testing available upon request. Call Optek for availability of other logic chips.

Absolute Maximum Ratings (TA = 25° C unless otherwise noted)

Operating Temperature	-40° C to +85° C
Storage Temperature	-55° C to +125° C
Supply Voltage, VCC	18 V
Junction Temperature	125° C

Notes: (1) Light level sufficient to cause high level output (see Φ_{T+}). Light source is a GaAs LED, $\lambda_P = 935$ nm. (2) Light level sufficient to cause low level output (see Φ_{T-}). Light source is a GaAs LED, $\lambda_P = 935$ nm, typical.

Schematics



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Types OPC8320, OPC8321, OPC8322, OPC8323

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

SYMBOL	PARAMETER	MIN	TYP	MAX	UNITS	TEST CONDITIONS
OPC8320 (Buffer Totem-Pole)						
I_{CCH}	High Level Supply Current		8.0	10	mA	$V_{CC} = 18\text{ V}, \Phi = 8\text{ }\mu\text{W}$
V_{OH}	High Level Output Voltage	15.5	16.5		V	$V_{CC} = 18\text{ V}, I_{OH} = -1.0\text{ mA}, \Phi = 8\text{ }\mu\text{W}$
V_{OL}	Low Level Output Voltage		280	400	mV	$V_{CC} = 4.5\text{ V}, I_{OL} = 16\text{ mA}, \Phi = 0\text{ }\mu\text{W}$
Φ_{T+}	Incident Radiant Power Threshold ⁽¹⁾	0.5	1.5	3	μW	$V_{CC} = 5.0\text{ V}$
Φ_{T+}/Φ_{T-}	Hysteresis	1.1	1.5	2		$V_{CC} = 5.0\text{ V}$
OPC8321 (Buffer Open-Collector)						
I_{CCH}	High Level Supply Current		8.0	10	mA	$V_{CC} = 18\text{ V}, \Phi = 8\text{ }\mu\text{W}$
I_{OH}	High Level Output Current		<1	100	μA	$V_{CC} = 18\text{ V}, V_{OH} = 32\text{ V}, \Phi = 8\text{ }\mu\text{W}$
V_{OL}	Low Level Output Voltage		280	400	mV	$V_{CC} = 4.5\text{ V}, I_{OL} = 16\text{ mA}, \Phi = 0\text{ }\mu\text{W}$
Φ_{T+}	Incident Radiant Power Threshold ⁽¹⁾	0.5	1.5	3	μW	$V_{CC} = 5.0\text{ V}$
Φ_{T+}/Φ_{T-}	Hysteresis	1.1	1.5	2		$V_{CC} = 5.0\text{ V}$
OPC8322 (Inverter Open-Collector)						
I_{CCL}	Low Level Supply Current		8.0	10	mA	$V_{CC} = 18\text{ V}, \Phi = 0\text{ }\mu\text{W}$
I_{OH}	High Level Output Current		<1	15	μA	$V_{CC} = 18\text{ V}, V_{OH} = 32\text{ V}, \Phi = 0\text{ }\mu\text{W}$
V_{OL}	Low Level Output Voltage		280	400	mV	$V_{CC} = 4.5\text{ V}, I_{OL} = 16\text{ mA}, \Phi = 8\text{ }\mu\text{W}$
Φ_{T-}	Incident Radiant Power Threshold ⁽²⁾	0.5	1.5	3	μW	$V_{CC} = 5.0\text{ V}$
Φ_{T-}/Φ_{T+}	Hysteresis	1.1	1.5	2		$V_{CC} = 5.0\text{ V}$
OPC8323 (Inverter Totem-Pole)						
I_{CCH}	High Level Supply Current		8.0	10	mA	$V_{CC} = 18\text{ V}, \Phi = 0\text{ }\mu\text{W}$
V_{OH}	High Level Output Voltage	15.5	16.5		V	$V_{CC} = 18\text{ V}, I_{OH} = -1.0\text{ mA}, \Phi = 0\text{ }\mu\text{W}$
V_{OL}	Low Level Output Voltage		280	400	mV	$V_{CC} = 4.5\text{ V}, I_{OH} = 16\text{ mA}, \Phi = 8\text{ }\mu\text{W}$
Φ_{T-}	Incident Radiant Power Threshold ⁽²⁾	0.5	1.5	3	μW	$V_{CC} = 5.0\text{ V}$
Φ_{T-}/Φ_{T+}	Hysteresis	1.1	1.5	2		$V_{CC} = 5.0\text{ V}$

EMITTER &
PHOTOSENSOR
CHIPS

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Optek reserves the right to make changes at any time in order to improve design and to supply the best product possible.

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