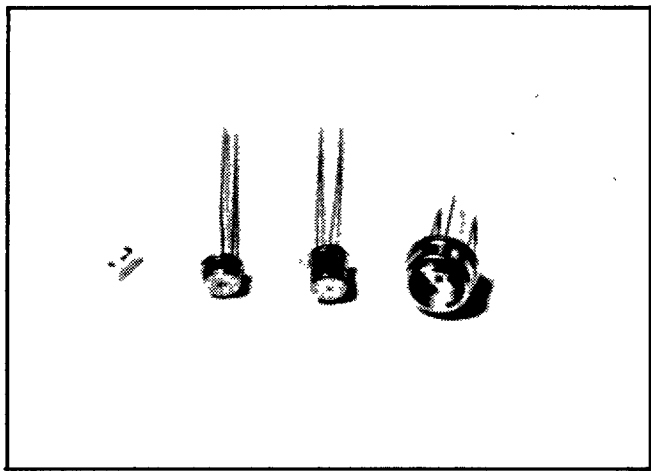


# RCA Electro Optics

# Photodiodes C30618, C30619, C30641, C30642

## DATA SHEET

### Large Area Planar PIN InGaAs Photodiodes



- Large areas with uniform responsivity (0.10 to 3.14 mm<sup>2</sup>)
- Spectral response range - 1100 to 1700 nm
- High responsivity
- Low capacitance
- Fast response time
- Low dark current and noise
- Available in a variety of convenient packages

RCA's new low capacitance, high speed InGaAs photodetectors utilize the latest passivation and contact technologies to provide lower dark current and noise, with negligible series resistance. 200°C purging, extended lifetest, and periodic qualification programs assure high quality, reliable devices ideally suited for today's demanding electro-optics and communications industries.

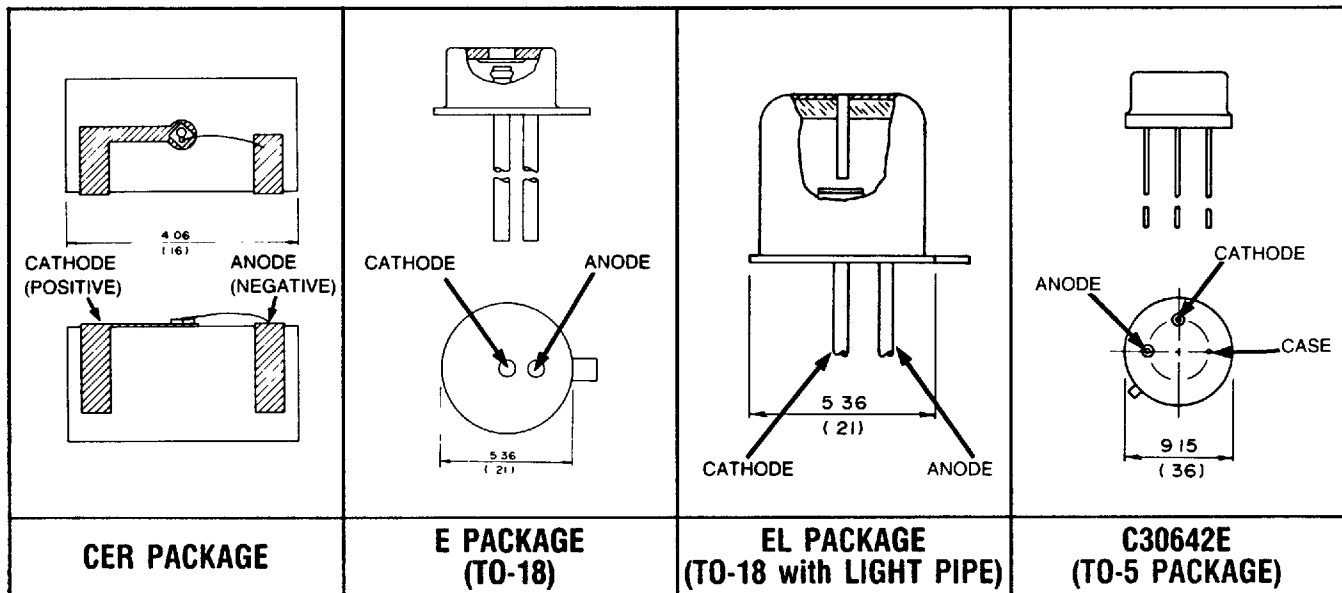
#### Absolute Maximum Ratings <sup>1</sup>

	Sym.	Pkg	C30618		C30619		C30641		C30642		UNITS
			Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	
Forward Current	I <sub>F</sub>	(All)	25		50		100		200		mA
Ambient Temp.: Storage	T <sub>STG</sub>	CER	-60	+125	-60	+125	-60	+125	-60	+125	°C
		E (TO18)	-60	+125	-60	+125					°C
		E (TO5)					°C				
		EL	-60	+125	-60	+125	°C				
Operating	T <sub>A</sub>	CER	-40	+80	-40	+80	-40	+80	-40	+80	°C
		E (TO18)	-40	+80	-40	+80					°C
		E (TO5)					°C				
		EL	-40	+80	-40	+80	°C				
Soldering (10s)	T <sub>sd</sub>	(All)	250		250		250		250		°C

<sup>1</sup> These are limiting values of operating and environmental conditions. Exceeding these values can cause damage to the device.

**Electrical Characteristics**  
 (T<sub>A</sub> = 25°C, V<sub>r</sub> = V<sub>r</sub> (Typ.))

	Sym.	Pkg.	C30618			C30619			C30641			C30642			UNITS			
			Min.	Typ.	Max.	Min.	Typ.	Max.	Min.	Typ.	Max.	Min.	Typ.	Max.				
Operating Voltage	V <sub>r</sub>	(all)	0	5	10	0	5	10	0	2	5	0	2	5	V			
Breakdown Voltage	V <sub>b</sub>	(all)	20	40		20	40		20	30		15	25		V			
Responsivity at 1300 nm	R <sub>1.3</sub>	CER	.80	.86		.80	.86		.78	.84		.78	.84		A/W			
		E (T018)	.78	.84		.78	.84								A/W			
		E (T05)													A/W			
		EL	.70	.75		.70	.75								A/W			
Responsivity at 1550 nm	R <sub>1.55</sub>	CER	.85	.90		.85	.90		.83	.88		.83	.88		A/W			
		E (T018)	.83	.88		.83	.88											A/W
		E (T05)																A/W
		EL	.75	.80		.75	.80											A/W
Dynamic Impedance	Z <sub>d</sub>	(all)	25			5.0			1.0			.25		MΩ				
Reverse Dark Current	I <sub>d</sub>	(all)		2	10		5	20		20	100		100	500	nA			
Noise Current (f = 10 kHz, Δf = 1.0 Hz)	I <sub>n</sub>	(all)		.05	.25		.1	.5		.4	2.0		2.0	10.0	pA/Hz <sup>1/2</sup>			
Capacitance	C	(all)																
		V <sub>r</sub> = V <sub>v</sub> (Typ)		4	6		8	10		40	50		125	150		pF		
		V <sub>r</sub> = 0		12	18		20	25		100	125		250	300		pF		
Rise / Fall	t <sub>r</sub> , t <sub>f</sub>	(all)		.3	1		1	3		2	6		6	15	ns			
Chip Photosensitive Surface																		
Shape		(all)		Circular			Circular			Circular			Circular					
Useful Area		(all)		.10			.20			.79			3.14		mm <sup>2</sup>			
Useful Diameter		(all)		.35			.50			1.0			2.0		mm			



Dimensions in millimeters. Dimensions in parentheses are in inches.

For further information, please contact your local RCA Electro Optics representative or RCA Inc., Electro Optics, P.O. Box 900, Vaudreuil, Canada J7V 7X3  
 Tel.: (514) 455-6191

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