

photodiodes



Features

- Low-cost visible and near-IR photodetector
- Excellent linearity in output photocurrent over 7 to 9 decades of light intensity
- Fast response times
- Available in a wide range of packages including epoxy-coated, transfer-molded, cast, and hermetic packages, as well as in chip form
- Low noise
- Mechanically rugged, yet compact and lightweight
- Available as duals, quads or as linear arrays
- Usable with almost any visible or near-infrared light source such as solid state laser diodes, neon, fluorescent, incandescent bulbs, lasers, flame sources, sunlight, etc.
- Can be designed and tested to meet the requirements of your application



Typical Applications

- Fiber-Optic Communications
- Instrumentation
- High-Speed Switching
- Spot Position Tracking and Measurement
- Photometry
- Data Transmission
- UV Light Meters
- Fluorescent Light Detection
- Laser Range Finding
- Barcode Scanning
- Laser Safety Scanning
- Distance Measurement

Datasheets available upon request

Description

PerkinElmer Optoelectronics offers a broad array of Silicon and InGaAs PIN and APDs.

InGaAs Avalanche Photodiodes

The high-quality InGaAs avalanche photodiodes (APDs) are packaged in hermetically sealed TO cans and ceramic blocks designed for the 900 to 1700 nm wavelength region.

InGaAs PIN Photodiodes

High-quality Indium Gallium Arsenide photodiodes designed for the 900 to 1700 nm wavelength region, these photodiodes are available in standard sizes ranging from 50 microns to 5 mm in diameter. Packages include ceramic submount, TO packages, and chip form.

Silicon Avalanche Photodiodes

These are reliable, high-quality detectors in hermetically sealed TO packages designed for high-speed and high-gain applications. A “reach-through” structure is utilized which provides very low noise performance at high gains, and a full range of active areas is available.

Silicon PIN Photodiodes

Offered for low- to high-speed applications, these PINs are designed for the 250 nm to 1100 nm range. Standard sizes range from 100 microns to 10 mm in diameter.

Silicon PN Photodiodes

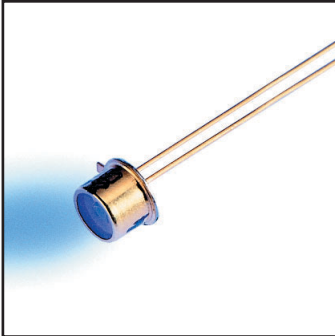
This format includes a variety of high-volume, low-cost silicon photodiodes that meet the demanding requirements of today’s commercial and consumer markets.

Alternate Source/Second Source Photodiodes

PerkinElmer’s nearest equivalent devices are selected on the basis of general similarity of electro-optical characteristics and mechanical configuration. Interchangeability in any particular application is not guaranteed, suitability should be determined by the customer’s own evaluation.

Detector Modules

Preamplifier modules are hybrid devices with a photodiode and a matching amplifier in a compact hermetic TO package. An integral amplifier allows for better ease of use and noise bandwidth performance. 14-pin, DIL, and/or fibered packaged modules are available on a custom basis.



Indium Gallium Arsenide PIN Photodiodes, Large-Area, and Small-Area Indium Gallium Arsenide APDs

- High Responsivity
- Low Capacitance for High Bandwidths
- Available in Various Hermetic Packages

InGaAs APDs—900 nm to 1700 nm

Technical Specification

Part Number	Standard Package	Photo Sens. Diam. μm	Resp. A/W @1300 nm	Resp. A/W @1550 nm	Dark Curr. Id (nA)	Spect. Noise Curr. Dens. In (pA/ $\sqrt{\text{Hz}}$)	Cap. @100 kHz Cd (pF)	Bandwidth GHz into 50 W	NEP @ 1550 nm pW/ $\sqrt{\text{Hz}}$	VOP for Gain=10 V
C30644E	TO window	50	8.4	9.4	6	0.15	1	2	0.03	40-90
C30644ECER	Ceramic	50	8.4	9.4	6	0.15	0.8	2	0.03	40-90
C30645E	TO window	80	8.4	9.4	10	0.25	1.2	1	0.13	40-90
C30645ECER	Ceramic	80	8.4	9.4	10	0.25	1	1	0.13	40-90
C30662E	TO window	200	8.4	9.4	200	1.4	2.5	0.2	0.15	40-90
C30662ECER	Ceramic	200	8.4	9.4	200	1.4	2.5	0.2	0.15	40-90
C30733ECER	Ceramic	30	8.4	9.4	5	<0.1	0.25	3	0.01	40-90

Test conditions: T = 22°C

InGaAs PIN Large-Area—900 nm to 1700 nm

Technical Specification

Part Number	Standard Package	Photo Sens. Diam. mm	Resp. A/W @850 nm	Resp. A/W @1300 nm	Resp. A/W @1550 nm	Dark Curr. Id (nA)	NEP @ 1300 nm pW/ $\sqrt{\text{Hz}}$	Cap. @100 kHz Cd (pF)	Bandwidth MHz into 50 W	Max. Power for .15 dB Linearity (dBm)	Bias Volt for these Specs V
C30619G	TO-18	0.5	0.2	0.86	0.95	5	<0.1	8	350	>+13	5
C30641G	TO-18	1	0.2	0.86	0.95	5	<0.1	40	75	>+13	2
C30642G	TO-5	2	0.2	0.86	0.95	10	0.1	350	20	+11	0
C30665G	TO-5	3	0.2	0.86	0.95	25	0.2	1000	3	+11	0
C30723G	TO-8	5	0.2	0.86	0.95	30	0.3	2500	2.5	+11	0

Test conditions: T = 22°C

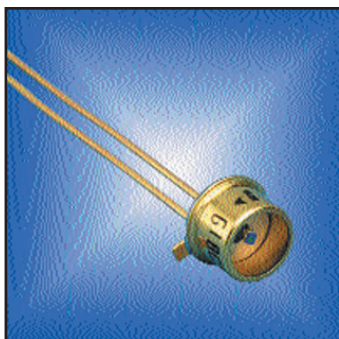
InGaAs PIN Small-Area—900 nm to 1700 nm

Technical Specification

Part Number	Standard Package	Photo Sens. Diam. μm	Resp. A/W @1300 nm	Resp. A/W @1550 nm	Dark Curr. Id (nA)	Spect. Noise Curr. Dens. In (pA/ $\sqrt{\text{Hz}}$)	Cap. @100 kHz Cd (pF)	Bandwidth GHz into 50 W	NEP @ 1550 nm pW/ $\sqrt{\text{Hz}}$	Bias Volt for these Specs V
C30616ECER	Ceramic	50	0.86	0.95	0.5	<0.02	0.35	>3.5	<0.02	5
C30637ECER	Ceramic	75	0.86	0.95	0.8	<0.02	0.4	3.5	<0.02	5
C30617ECER	Ceramic	100	0.86	0.95	1	<0.02	0.55	3.5	<0.02	5
C30617B	Ball lens	100	0.8	0.9	1	<0.02	0.8	3.5	<0.02	5
C30618ECER	Ceramic	350	0.86	0.95	2	0.02	4	0.8	0.02	5
C30618G	TO window	350	0.86	0.95	2	0.02	4	0.8	0.02	5

Test conditions: T = 22°C

photodiodes



Silicon Avalanche Photodiodes

- Hermetically Sealed Packages

Si APD—Standard Types—400 nm to 1100 nm

Technical Specification

Part Number	Standard Package	Photo Sens. Diam. mm	Resp. 900 nm A/W	Dark Curr. Id (nA)	Spect. Noise Curr. Dens. In (pA/√Hz)	Cap. @100 kHz: Cd (pF)	Resp. Time tr (ns)	NEP @ 900 nm fW/√Hz	VOP Range V
C30817E	TO-5	0.8	75	50	0.5	2	2	7	275-425
C30872E	TO-8	3	45	100	0.5	10	2	11	275-425
C30902E	TO-18	0.5	77 (@ 830 nm)	15	0.23	1.6	0.05	3 (@ 830 nm)	180-250
C30902S	TO-18	0.5	128 (@ 830 nm)	15	0.11	1.6	0.05	0.86 (@ 830 nm)	180-250
C30916E	TO-5	1.5	70	100	0.5	3	2	8	275-425

Test conditions: T = 22°C

Si APD—Arrays Quadrant and Linear—400 nm to 1100 nm

Technical Specification

Part Number	Standard Package	Photo Sens. Diam. mm	Resp. @830 nm A/W	Dark Curr. Id (nA)	Spect. Noise Curr. Dens. In (pA/√Hz)	Cap. @100 kHz: Cd (pF)	Resp. Time tr (ns)	NEP @ 830 nm fW/√Hz	VOP Range V
C30927E-01	TO-8	1.5 total	62 (@900 nm)	25	0.25	1	3	16 (@900 nm)	275-425
C30927E-02	TO-8	1.5 total	62 (@900 nm)	25	0.25	1	3	16 (@900 nm)	275-425
C30927E-03	TO-8	1.5 total	62 (@900 nm)	25	0.25	1	3	16 (@900 nm)	275-425
C30985E	Custom	0.3 pitch	31	1	0.1	0.5	2	3	250-425

Test conditions: T = 22°C

Si APD—Low Cost, High Volume—400 nm to 1000 nm

Technical Specification

Part Number	Standard Package	Photo Sens. Diam. mm	Resp. @900 nm A/W	Dark Curr. Id (nA)	Spect. Noise Curr. Dens. In (pA/√Hz)	Cap. @100 kHz: Cd (pF)	Resp. Time tr (ns)	NEP @ 900 nm fW/√Hz	VOP Range V
C30724E	TO-18	0.5	9 (@ M=15)	25	0.1	1	5	11	120-200
C30724P	Plastic	0.5	9 (@ M=15)	25	0.1	1	5	11	120-200
C30737E	TO-18	0.5	47 (@ I=800 nm M=100)	20	0.3	2.5	0.3	6.4 (@ 800 nm M=100)	120-200

Test conditions: T = 22°C

Si APD—TE-Cooled

Technical Specification

Part Number	Standard Package	Photo Sens. Diam. mm	Resp. @830 nm A/W	Dark Curr. Id (nA)	Spect. Noise Curr. Dens. In (pA/√Hz)	Cap. @100 kHz: Cd (pF)	Resp. Time tr (ns)	NEP @ 830 nm fW/√Hz	ADP VOP Range V
C30902S-TC	TO-66	0.5	128	2	0.04	1.6	0.5	0.3	160-250
C30902S-DTC	TO-66	0.5	128	1	0.02	1.6	0.5	0.16	160-250

Test conditions: T = 0°C for -TC and -20°C for -DTC

ADP VOP Range: temperature dependent



Silicon Avalanche Photodiodes

- Low Cost, High Volume

Si APD—NIR-Enhanced—400 nm to 1100 nm

Technical Specification

Part Number	Standard Package	Photo Sens. Diam. mm	Resp. @1060 nm A/W	Dark Curr. Id (nA)	Spect. Noise Curr. Dens. In (pA/√Hz)	Cap. @100 kHz Cd (pF)	Resp. Time tr (ns)	NEP @ 900 nm m=15 fW/√Hz	VOP Range V
C30954E	TO-5	0.8	36	50	0.5	2	2	14	275-425
C30955E	TO-5	1.5	34	100	0.5	3	2	15	275-425
C30956E	TO-8	3	25	100	0.5	10	2	20	275-425

Test conditions: T = 22°C

Si APD—Lightpipe

Technical Specification

Part Number	Standard Package	Photo Sens. Diam. mm	Resp. @830 nm A/W	Dark Curr. Id (nA)	Spect. Noise Curr. Dens. In (pA/√Hz)	Cap. @100 kHz Cd (pF)	Resp. Time tr (ns)	NEP @ 830 nm fW/√Hz	VOP Range V
C30921E	TO-18	0.5	77	15	0.23	1.6	0.05	3	180-250
C30921S	TO-18	0.5	128	15	0.11	1.6	0.05	0.86	180-250

Test conditions: T = 22°C

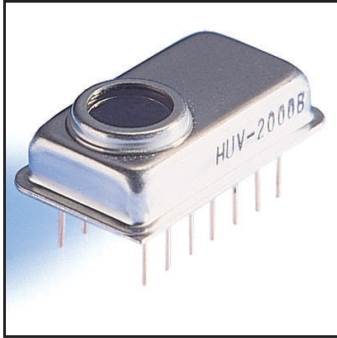
Si APD—Radiation Detection

Technical Specification

Part Number	Photo Sens. Diam. mm	Resp. A/W	Dark Curr. Id (nA)	Spect. Noise Curr. Dens. In (pA/√Hz)	Cap. @100 kHz Cd (pF)	Resp. Time tr (ns)	NEP @ Peak fW/√Hz	VOP Range V
C30626	5x5	22 (@900 nm)	250	0.5	30	5	23 (@900 nm)	275-425
C30703	10x10	16 (@530 nm)	10	0.7	120	5	40 (@530 nm)	275-425

Test conditions: T = 22°C

photodiodes



Silicon PIN Photodiodes and Modules

- Broad Range of Photosensitive Areas
- Low Operating Voltage
- Hermetically Sealed Packages

Si PINs—Window and Lightpipe Packages, Fast Response—400 nm to 1100 nm

Technical Specification

Part Number	Standard Package	Photo Sens. Diam. mm	Resp. @830 nm A/W	Dark Curr. Id nA	Spect. Noise Curr. Dens. In (fA/√Hz)	Cap. @100 kHz Cd (pF)	Resp. Time tr (ns)	NEP @ 830 nm fW/√Hz	Bias Volt for These Specs V
C30971E	TO-18	0.5	0.5	10	57	1.6	0.5	113	100
C30971EL	TO-18 Lightpipe	0.25	0.5	10	57	1.6	0.5	113	100

Test conditions: T = 22°C

Si PINs—Large Area, Fast Response—400 nm to 1100 nm

Technical Specification

Part Number	Standard Package	Photo Sens. Diam. mm	Resp. @900 nm A/W	Dark Curr. Id nA	Spect. Noise Curr. Dens. In (fA/√Hz)	Cap. @100 kHz Cd (pF)	Resp. Time tr (ns)	NEP @ 900 nm fW/√Hz	Bias Volt for These Specs V
FFD-100	TO-5	2.5	0.58	2	25	8.5	3.5	44	15
FFD-200	TO-8	5.1	0.58	4	36	30	5	62	15

Test conditions: T = 22°C

Si PINs—Quadrant—220 nm to 1100 nm

Technical Specification

Part Number	Standard Package	Photo Sens. Diam. total mm	Resp. @900 nm A/W	Dark Curr. Id nA	Spect. Noise Curr. Dens. In (fA/√Hz)	Cap. @100 kHz Cd (pF)	Resp. Time tr (ns)	NEP @ 900 nm fW/√Hz	Bias Volt for These Specs V
C30845E	TO-5	8	0.6	7	47	8	6	79	45
UV-140BQ-4	TO-5	1.3x1.3 (x4)	0.58	—	4	34	<1 μsec	7	0
YAG-444-4A	Custom	11.4	0.4 @1.06 μm	40	118	9	25	295	180

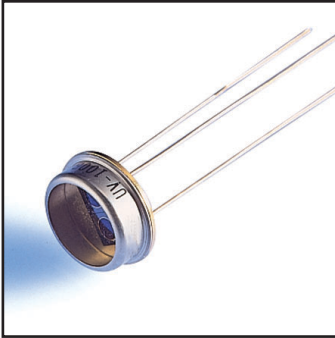
Test conditions: T = 22°C

Si PINs—Standard N-Type—400 nm to 1100 nm

Technical Specification

Part Number	Standard Package	Photo Sens. Diam. mm	Resp. @900 nm A/W	Dark Curr. Id nA	Spect. Noise Curr. Dens. In (fA/√Hz)	Cap. @100 kHz Cd (pF)	Resp. Time tr (ns)	NEP @ 900 nm fW/√Hz	Bias Volt for These Specs V
C30807E	TO-18	1	0.6	1	18	2.5	3	30	45
C30808E	TO-5	2.5	0.6	3	31	6	5	52	45
C30822E	TO-8	5	0.6	5	40	17	7	67	45
C30809E	TO-8	8	0.6	7	47	35	10	79	45
C30810E	Custom	11.4	0.6	30	98	70	12	163	45

Test conditions: T = 22°C



Silicon PINs—UV Enhanced

Si PINs—UV Enhanced, Low Noise—220 nm to 1100 nm

Technical Specification

Part Number	Standard Package	Photo Sens. Diam. mm	Resp. A/W		Shunt Resis. Rd MW	Spect. Noise Curr. Dens.: In (fW/√Hz)	Cap. @100 kHz: Cd (pF)	NEP @ 900 nm fA/√Hz
			@250 nm	@900 nm				
UV-040BQ	TO-8	1	0.12	0.58	2000	3	25	5
UV-100BQ	TO-8	2.5	0.12	0.58	1000	4	120	7
UV-215BQ	TO-8	5.4	0.12	0.58	250	8	450	25
UV-245BQ	TO-8	4.4x4.7	0.12	0.58	375	7	375	20
UV-140BQ-2	TO-5	2.5x1.3 (x2)	0.12	0.58	1000	4	68	7
UV-140BQ-4	TO-5	1.3x1.3 (x4)	0.12	0.58	1000	4	34	7

Test conditions: T = 22°C

Si PIN Modules—Low Bandwidth—1 kHz to 50 kHz

Technical Specification

Part Number	Standard Package	Photo Sens. Diam. mm	Resp. MV/W		Spect. Noise Volt. Dens. Vn (μV/√Hz)	NEP @ 900 nm pW/√Hz	Bandwidth kHz into 50 W	Bias Volt for These Specs V
			@250 nm	@900 nm				
HUV-2000B	Custom	5.4	24	116	2.5	0.02	2	0
HUV-1100BG	TO-5	2.5	24	116	20	0.17	20	0

Test conditions: T = 22°C

Si PIN Modules—High Bandwidth—40 MHz to 100 MHz

Technical Specification

Part Number	PIN or APD Used	Standard Package	Photo Sens. Diam. mm	Resp. kV/W @900 nm	Lin. Volt. Out Swing (V)	Spect. Noise Volt. Dens. Vn (nV/√Hz)	NEP @900 nm pW/√Hz	Bandwidth MHz (3 dB, into 50 W)	Photo. Diode Bias Volt V
C30608E	C30971	TO-5	0.5	32 (@ 830 nm)	0.7	60	1.8 (@ 830 nm)	50	12
C30659-1550-R2A	C30662	TO-8	0.2	340 (@ 1550 nm)	2	35	0.103 (@ 1550 nm)	50	40-90
C30950E	C30817	TO-8	0.8	560	0.7	20	.036	50	275-425
C30919E	C30817	Custom	0.8	1000	0.7	25	.025	40	275-425

Test conditions: T = 22°C

photodiodes



Silicon PN Photodiodes

Table Key

I_{SC}	Short-Circuit Current H=100 fc, 2850 K
$TC I_{SC}$	I_{SC} Temperature Coefficient, 2850 K
V_{OC}	Open-Circuit Voltage H=100 fc, 2850 K
$TC V_{OC}$	V_{OC} Temperature Coefficient, 2850 K
I_D	Dark Current H=0, $V_R=10, 50, 100$ V
R_{SH}	Shunt Resistance H=0, $V=10$ mV
C_J	Junction Capacitance H=0, $V=0, 3, 15$ V
R_E	Responsivity 880-940 nm
S_R	Sensitivity @ Peak
λ_{range}	Spectral Application Range
λ_p	Spectral Response @ Peak
V_{BR}	Breakdown Voltage

Table Key

I_{SC}	Short-Circuit Current H=1000 lux, 2850 K
$TC I_{SC}$	I_{SC} Temperature Coefficient H=1000 lux, 2850 K
I_D	Dark Current H=0, $V_R=100$ mV
$TC I_D$	I_D Temperature Coefficient H=0, $V_R=100$ mV
R_{SH}	Shunt Resistance H=0, $V_R=10$ mV
C_J	Junction Capacitance H=0, $V=0$ V, 1 MHz
S_R	Sensitivity @ 400 nm
R_E	Responsivity 400 nm, 0.18 A/W
t_R/t_F	Rise/Fall Time @ 1 K Ω load $V_R=1$ V, 830 nm
V_{OC}	Open-Circuit Voltage H=1000 lux, 2850 K
$TC V_{OC}$	V_{OC} Temperature Coefficient H=1000 lux, 2850 K

Silicon PN—VTP Series

Technical Specification

Part Number	I_{SC} μA	$TC I_{SC}$ %/C	V_{OC} mV	$TC V_{OC}$ mV/C	I_D nA max.	R_{SH} G Ω	C_J pF	R_E A/(W/cm ²)	S_R A/W	λ_{range} nm	λ_p nm	V_{BR} V
VTP100	55	0.24	300	-2	30	0.25	50 max.	0.047	0.5	725-1150	925	140
VTP100C	70	0.2	350	-2	30	0.25	50 max.	0.05	0.55	400-1150	925	140
VTP1012	17	0.2	350	-2	7	0.5	6 max.	0.011	0.55	400-1150	925	140
VTP1112	90	0.2	350	-2	7	0.5	6 max.	0.033	0.55	400-1150	925	140
VTP1188S	200	0.2	330	-2	30	67	180	—	0.55	400-1100	925	—
VTP1232	100 min.	0.2	420 min.	-2	25	—	180 max.	0.076	0.6	400-1100	920	—
VTP3310LA	36	0.2	350	-2	35	10	25 max.	0.015	0.55	400-1150	925	140
VTP3410LA	22	0.26	350	-2	35	10	25 max.	0.013	0.55	700-1150	925	140
VTP4085	200	0.2	330	-2	100	2	350	—	0.55	400-1100	925	—
VTP4085S	200	0.2	330	-2	50	4	350	—	0.55	400-1100	925	—
VTP5050	70	0.2	350	-2	18	0.25	24 max.	0.05	0.55	400-1150	925	140
VTP6060	200	0.2	350	-2	35	100	60 max.	0.14	0.55	400-1150	925	140
VTP7110	9	0.2	350	-2	35	7	25 max.	0.015	0.55	400-1150	925	140
VTP7210	7	0.26	350	-2	35	7	25 max.	0.015	0.55	700-1150	925	140
VTP7840	70	0.2	325	-2	20	0.25	40 max.	—	0.55	725-1150	925 1@10 mA	—
VTP8350	80	0.2	350	-2	30	100	50 max.	0.06	0.55	400-1150	925	140
VTP8440	55	0.2	350	-2	15	0.5	15 max.	0.025	0.55	400-1150	925	140
VTP8551	70	0.2	350	-2	30	0.15	50 max.	0.05	0.55	400-1150	925	140
VTP8651	55	0.24	300	-2	30	0.15	50 max.	0.045	0.5	725-1150	925	140
VTP9412	17	0.2	350	-2	7	0.4	6 max.	0.011	0.55	400-1150	925	140

Electro-optical characteristics @ 25°C

Silicon PN—VTS Series

Technical Specification

Part Number	I_{SC} mA	$TC I_{SC}$ %/C	I_D nA	$TC I_D$ %/C	R_{SH} M Ω	C_J nF	S_R A/W	R_E A/(W/cm ²)	t_R/t_F μ sec	V_{OC} V	$TC V_{OC}$ mV/C
VTS_80	3	0.2	200	+11	0.3	7.5	0.2	0.7	13	0.45	-2.6
VTS_81	1.5	0.2	100	+11	0.6	3.5	0.2	0.34	6.4	0.45	-2.6
VTS_82	0.69	0.2	50	+11	1.2	1.75	0.2	0.16	3.4	0.45	-2.6
VTS_83	0.64	0.2	50	+11	1.2	1.75	0.2	0.15	3.4	0.45	-2.6
VTS_84	0.33	0.2	40	+11	1.5	1	0.2	0.07	1.8	0.45	-2.6
VTS_85	0.16	0.2	20	+11	3	0.5	0.2	0.04	1.2	0.45	-2.6
VTS_86	0.080	0.2	10	+11	6	0.25	0.2	0.02	0.75	0.45	-2.6

Electro-optical characteristics @ 25°C

Table Key

I_{SC}	Short-Circuit Current 940 nm, H=0.5 mW/cm ² (VTD205, VTD206) H=5 mW/cm ² , 2850 K (VTD31AA, VTB Series) 100 Lux, 2850 K (VTD34, VTD205K) 100 Lux, 2856 K (VTD206K)
TC I_{SC}	I_{SC} Temperature Coefficient 2850 K (VTD31AA, VTD34, VTD34F, VTB Series) 2856 K (VTD205, VTD205K, VTD206, VTD206K)
V_{OC}	Open-Circuit Voltage 940 nm, H=0.5 mW/cm ² (VTD 205, VTD205K, VTD206, VTD206K) 2850 K (VTD31AA, VTD34, VTD34F)
TC V_{OC}	V_{OC} Temperature Coefficient 2850 K (VTD31AA, VTD34, VTD34F, VTB Series) 2856 K (VTD205, VTD205K, VTD206, VTD206K)
I_D	Dark Current H=0, $V_R=2$ V (VTB Series) H=0, $V_R=10$ V (VTD34, VTD34F, VTD205, VTD205K, VTD206, VTD206K, VTB100) H=0, $V_R=15$ V (VTD31AA)
R_{SH}	Shunt Resistance H=0, $V=10$ mV (VTB Series)
TC R_{SH}	R_{SH} Temperature Coefficient H=0, $V=10$ mV (VTB Series)
C_j	Junction Capacitance H=0, $V_R=0$ V, 1 MHz (VTD205, VTD205K, VTD206, VTD206K) @ 1 MHz, $V_R=0$ V (VTD34, VTD34F)
t_R/t_F	Rise/Fall Time H=0, $V=0$ V (VTD31AA, VTB Series) @ $R_L=50 \Omega$, $V_R=5$ V, 850 nm (VTD205, VTD205K, VTD206, VTD206K) @ $R_L=1$ k Ω Lead, $V_R=10$ V, 833 nm (VTD34, VTD34F)
S_R	Sensitivity @ Peak 365 nm (VTB Series)
λ_{range}	Spectral Application Range
λ_p	Spectral Response @ Peak
V_{BR}	Breakdown Voltage

Silicon PN—VTD Series

Technical Specification

Part Number	I_{SC} μ A	TC I_{SC} %/°C	V_{OC} mV	TC V_{OC} mV/°C	I_D nA max.	C_j pF	t_R/t_F nsec	S_R A/W	λ_{range} nm	λ_p nm	V_{BR} V
VTD31AA	150-225	0.2	350	-2	50	500 max.	—	0.55	400-1150	860	5 min.
VTD34	70	0.2	365	-2	30	60	50	0.6	400-1100	900	40 min.
VTD34F	—	—	350	-2	30	60	50	0.6	725-1150	940	40 min.
VTD205	25	0.2	350	-2.6	30	72	20	0.6	800-1100	925	50
VTD205K	80	0.2	365	-2.6	30	72	20	0.6	400-1100	925	50
VTD206	25	0.2	350	-2.6	30	72	20	0.6	750-1100	925	50
VTD206K	80	0.2	365	-2.6	30	72	20	0.6	400-1100	925	50

Electro-optical characteristics @ 25°C

Silicon PN—VTB Series

Technical Specification

Part Number	I_{SC} μ A	TC I_{SC} %/°C	V_{OC} mV	TC V_{OC} mV/°C	I_D pA max.	R_{SH} G Ω	TC R_{SH} %/°C	C_j nF	S_R A/W	λ_{range} nm	λ_p nm	V_{BR} V
VTB100	65	0.12	490	-2	500	1.4	-8	2 max.	0.1	320-1100	920	40
VTB1012	13	0.12	490	-2	100	0.25	-8	0.31	0.09	320-1100	920	40
VTB1012B	1.3	0.02	420	-2	100	0.25	-8	0.31	—	330-720	580	40
VTB1013	13	0.12	490	-2	20	7	-8	0.31	0.09	320-1100	920	40
VTB1013B	1.3	0.02	420	-2	20	7	-8	0.31	—	330-720	580	40
VTB1112	60	0.12	490	-2	100	0.25	-8	0.31	0.19	320-1100	920	40
VTB1112B	6	0.02	420	-2	100	0.25	-8	0.31	—	330-720	580	40
VTB1113	60	0.12	490	-2	20	7	-8	0.31	0.19	320-1100	920	40
VTB1113B	6	0.02	420	-2	20	7	-8	0.31	—	330-720	580	40
VTB4051	200	0.12	490	-2	250	0.56	-8	3	0.1	320-1100	920	40
VTB5051	130	0.12	490	-2	250	0.56	-8	3	0.1	320-1100	920	40
VTB5051B	13	0.02	420	-2	250	0.56	-8	3	—	330-720	580	40
VTB5051J	130	0.12	490	-2	250	0.56	-8	3	0.1	320-1100	920	40
VTB5051UV	130	0.12	490	-2	250	0.56	-8	3	0.1	200-1100	920	40
VTB5051UVJ	130	0.12	490	-2	250	0.56	-8	3	0.1	200-1100	920	40
VTB6061	350	0.12	490	-2	2000	0.1	-8	8	0.1	320-1100	920	40
VTB6061B	35	0.02	420	-2	2000	0.1	-8	8	—	330-720	580	40
VTB6061CIE	12	—	—	—	2000	0.1	-8	8	—	475-650	555	—
VTB6061J	350	0.12	490	-2	2000	0.1	-8	8	0.1	320-1100	920	40
VTB6061UV	350	0.12	490	-2	2000	0.1	-8	8	0.1	200-1100	920	40
VTB6061UVJ	350	0.12	490	-2	2000	0.1	-8	8	0.1	200-1100	920	40
VTB8341	60	0.12	490	-2	100	1.4	-8	1	0.1	320-1100	920	40
VTB8440	45	0.12	490	-2	2000	0.07	-8	1	0.1	320-1100	920	40
VTB8440B	5	0.02	420	-2	2000	0.07	-8	1	—	330-720	580	40
VTB8441	45	0.12	490	-2	100	1.4	-8	1	0.1	320-1100	920	40
VTB8441B	5	0.02	420	-2	100	1.4	-8	1	—	330-720	580	40
VTB9412	13	0.12	490	-2	100	0.25	-8	0.31	0.09	320-1100	920	40
VTB9412B	1.3	0.02	420	-2	100	0.25	-8	0.31	—	330-720	580	40
VTB9413	13	0.12	490	-2	20	7	-8	0.31	0.09	320-1100	920	40
VTB9413B	1.3	0.02	420	-2	20	7	-8	0.31	—	330-720	580	40