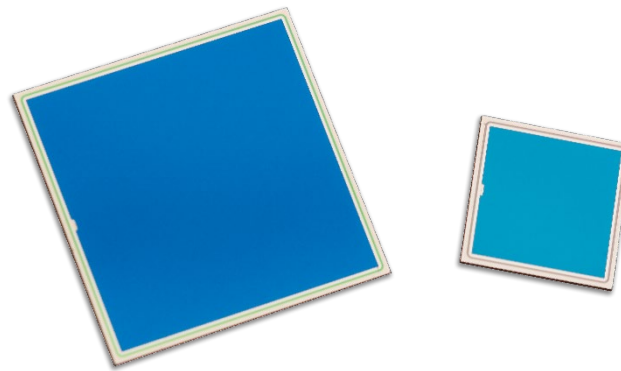


## VTH21xx series Silicon Photodiodes

### Silicon Photodiode for Alpha Particle Detection



Low capacitance silicon photodiode chip designed for alpha particle detection. Available in two sizes. Assembly compatible with conductive epoxy mount. Packaging options: chips on waffle pack or mylar or assembled on a carrier.

**Table 1: Key parameters**

Parameter	Symbol	Chip ID:	5 mm	10 mm	Unit
		Conditions			
Breakdown voltage	$V_{BR}$	100 $\mu$ A	> 100	> 100	V
Junction capacitance	$C_J$	20 V	< 30	< 120	pF
Dark current	$I_D$	20V	< 2	< 5	nA
		40 V	< 5	< 10	nA
Depletion layer thickness	t	20 V	> 0.09	> 0.09	mm
Dead layer	$t_d$	Si equivalent	< 150	< 150	nm

Nominal values at room temperature (22°C)

**Table 2: Package and Chip Dimensions**

Parameter	VTH2110	VTH2120	Unit
Chip size	5.67 x 5.67 x 0.30	10.67 x 10.67 x 0.30	mm
Active area	5 x 5	10 x 10	mm
Chip tray	4 x 4	4 x 4	in
Number of chips per tray	100	25	pcs

## VTH21xx series Silicon Photodiodes

### Silicon Photodiode for Alpha Particle Detection

Table 3: Maximum ratings

Parameter	Min	Typ	Max	Unit
Operating Temperature	-40	-	100	°C
Storage Temperature	-40	-	100	°C
Maximum Humidity (non-condensing)	-	-	60	%

Figure 1: VTH2110 mechanical drawing. Dimensions are in millimeters

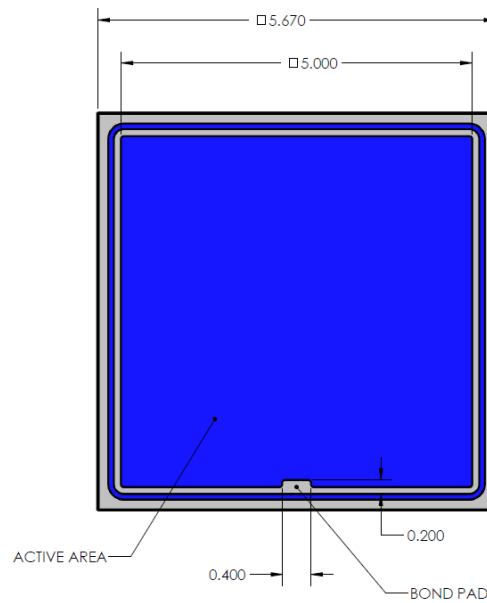
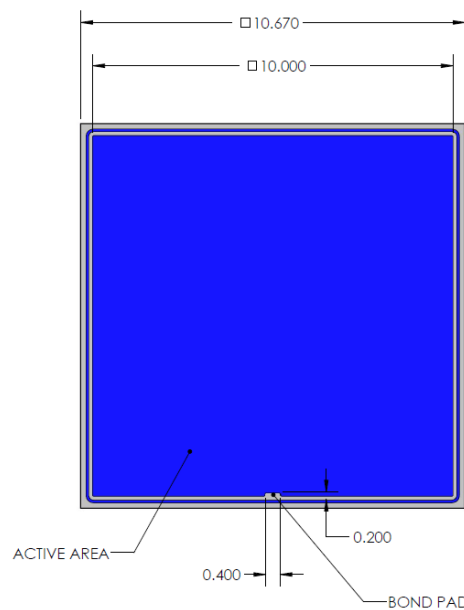


Figure 2: VTH2120 mechanical drawing. Dimensions are in millimeters



# VTH21xx series Silicon Photodiodes

## Silicon Photodiode for Alpha Particle Detection

Figure 3: Typical capacitance

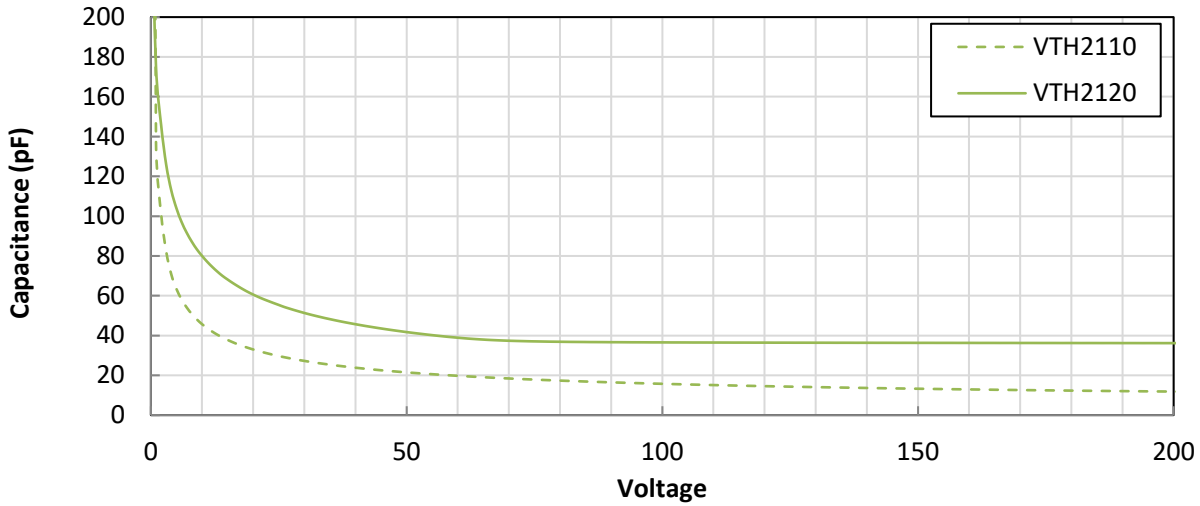


Figure 4: Typical dark current

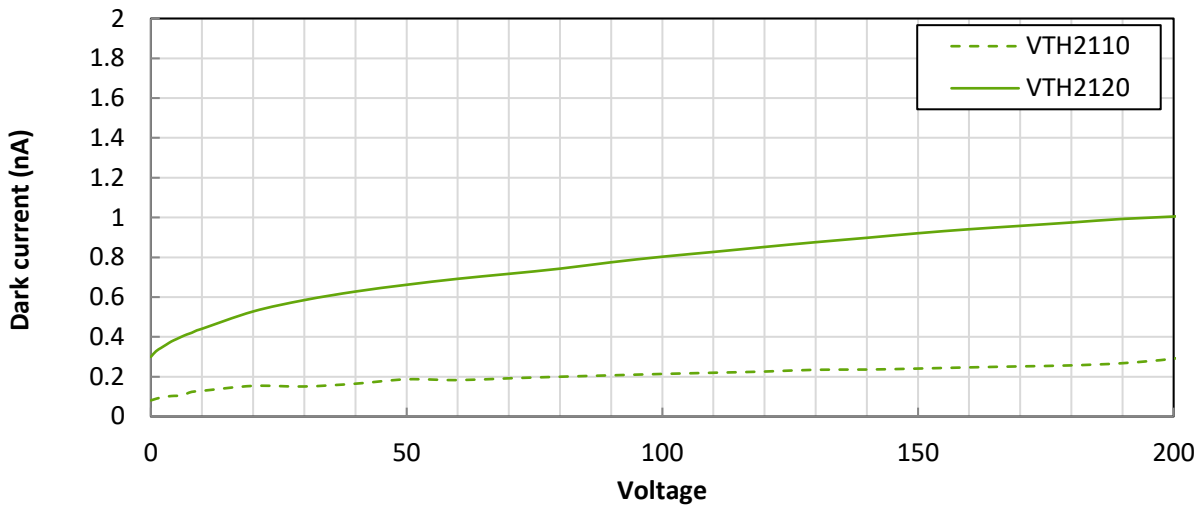
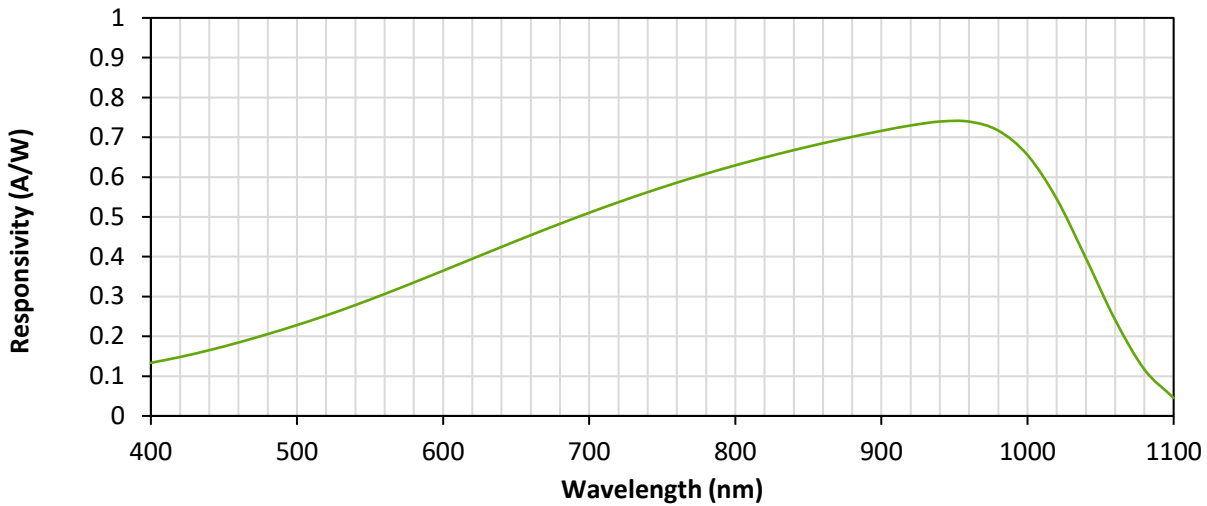


Figure 5: Typical spectral responsivity



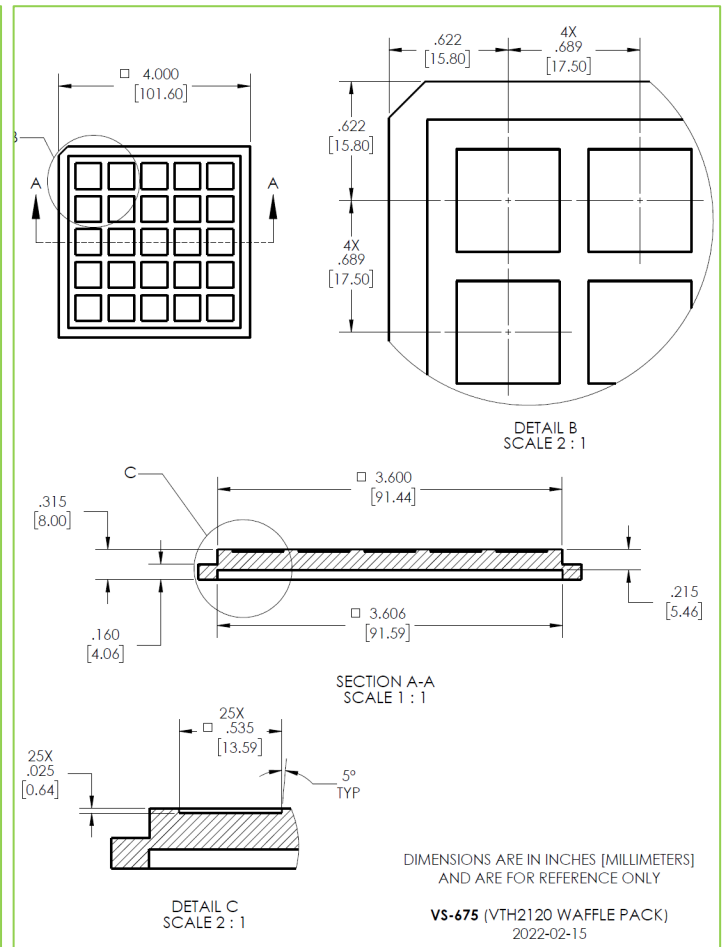
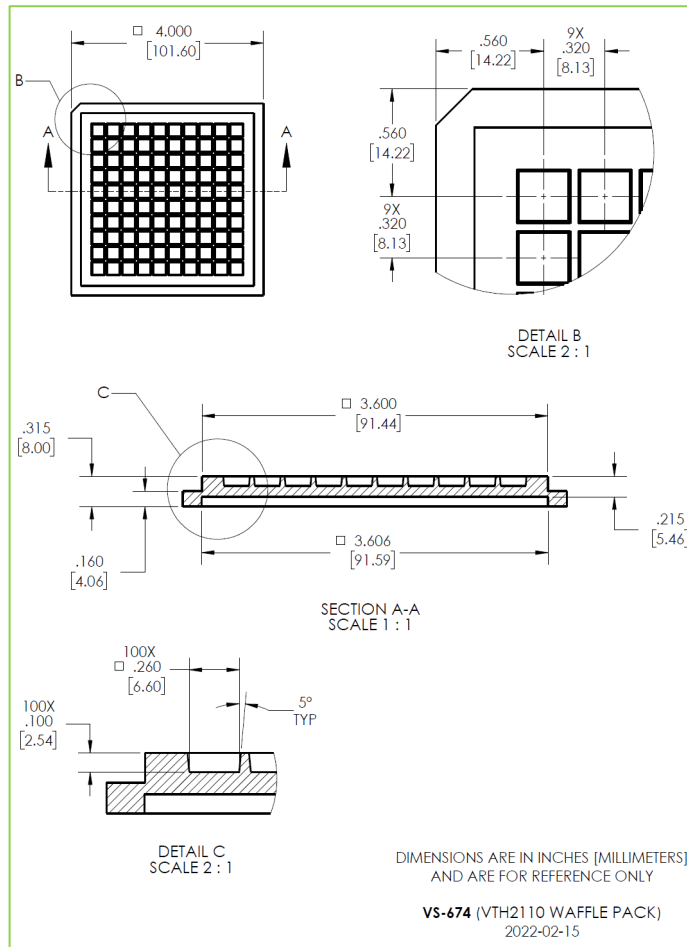
# VTH21xx series Silicon Photodiodes

## Silicon Photodiode for Alpha Particle Detection

### Packaging

The photodiodes will be packed and shipped in a 4" x 4" waffle packs.

Part Number	Entegris Part Number	Pocket Size	Number of pockets
VTH2110	H44-260-1415	6.6 x 6.6 mm	100
VTH2120	H44-535-66C02	13.6 x 13.6 mm	25



## VTH21xx series Silicon Photodiodes

### Silicon Photodiode for Alpha Particle Detection

#### About Excelitas Technologies

Excelitas Technologies is a global technology leader focused on delivering innovative, customized solutions to meet the lighting, detection and other high-performance technology needs of OEM customers.

Excelitas has a long and rich history of serving our OEM customer base with optoelectronic sensors and modules for more than 45 years beginning with PerkinElmer, EG&G, and RCA. The constant throughout has been our innovation and commitment to delivering the highest quality solutions to our customers worldwide.

From aerospace and defense to analytical instrumentation, clinical diagnostics, medical, industrial, and safety and security applications, Excelitas Technologies is committed to enabling our customers' success in their specialty end-markets. Excelitas Technologies has approximately 7,000 employees in North America, Europe and Asia, serving customers across the world.

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