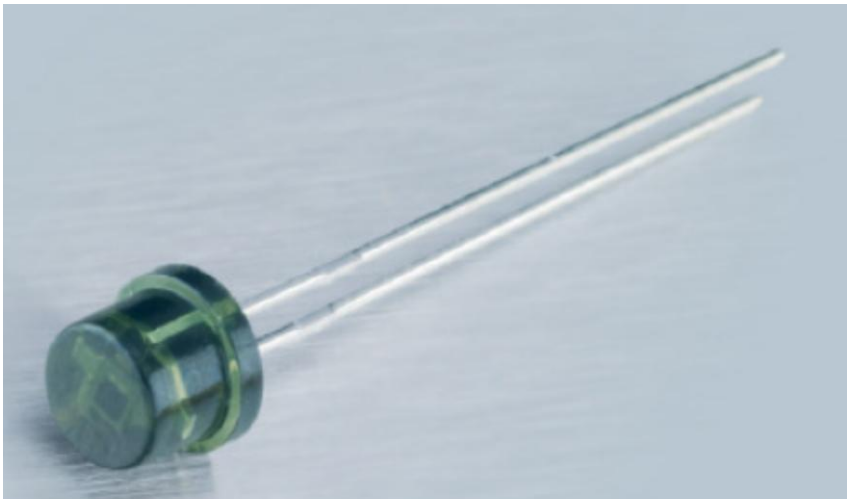
VTT9812FH and VTT9814FH

IR-Bloc™ Ambient Light Sensor
IR-Blocking Silicon Phototransistor



The IR-Bloc™ family is the only ambient light sensor family on the market that comes in a low cost package with the IR-blocking feature incorporated in a plastic epoxy package. The spectral response is similar to the human eye and a photocell, making it ideal for applications where the response should only be influenced by the visible light.

As part of the IR-Bloc family of ambient light sensor, the VTT9812FH and the VTT9814FH are silicon phototransistors in a standard flat T-1 ¾ end-looking package. It offers the time-proven VTT silicon phototransistor chip that customers have come to rely upon over the years, with the additional IR blocking feature incorporated in the plastic epoxy package. As such it gives an excellent response in the visible spectral range, giving a RoHs compliant alternative to Cadmium Sulfide photocells.

The VTT9812FH is specified for dusk/dawn switched at low light levels around 0.2 to 1fc (2 to 10lux).

The VTT9814FH, with its narrow light current tolerance, is especially suited for ambient light control applications around 50 to 100fc (500 to 1000lux).

Key Features

- Visible light response with IR-blocking feature incorporated in the cast epoxy
- RoHS-compliant alternative to photocells
- Low dark current

Applications

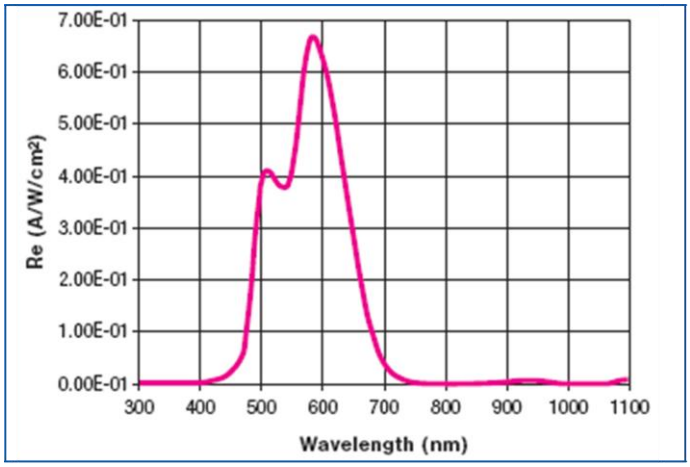
- Street light switching
- Interior and exterior light control (dusk/dawn switch)
- Automotive headlight dimmer
- Contrast control
- Oil burner flame monitoring

EXCELITAS TECHNOLOGIES

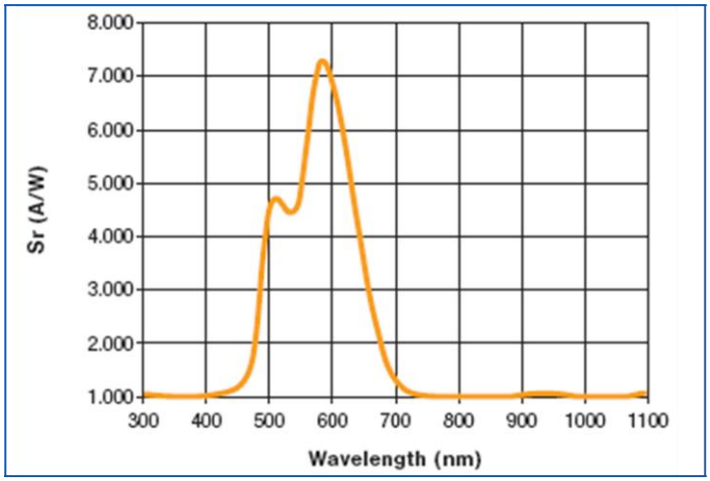
General Characteristics and Electro-optical specifications at 25°C

Parameter	Min	Typical	Max	Units	Conditions
Storage Temperature	-40		100	°C	
Operating Temperature	-40		100	°C	
Maximum Continuous Power Dissipation		50		mW	
Maximum Current		25		mA	
Dark Current		1	50	nA	V_{CE} = 5V
Collector Breakdown	30			V	I_C = 100µA
Emitter Breakdown	5			V	I_E = 100µA
Saturation Voltage			0.25	V	I_C = 1mA, 400fc
Rise/Fall Time		1.5		µs	I_C = 1mA, R_L = 100kΩ
Peak Spectral Response		585		nm	
Sensitivity at peak		7		A/W	
Angular Response		±5		°	At 50% response
VTT9812FH					
Short Circuit Current	60			µA	100fc, 2850K, V_{CE} = 5V
VTT9814FH					
Short Circuit Current	80		120	µA	100fc, 2850K, V_{CE} = 5V

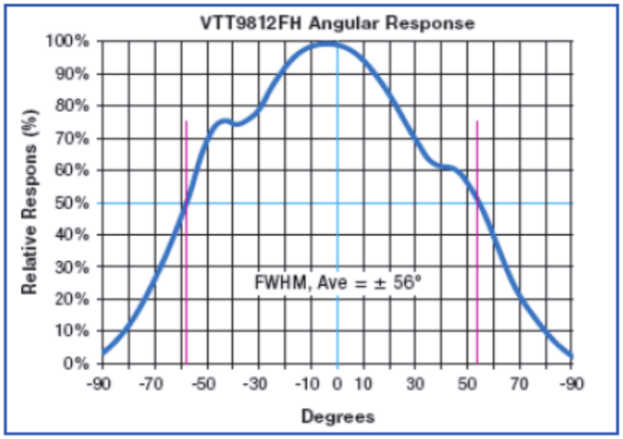
Typical Spectral Responsivity at 25°C



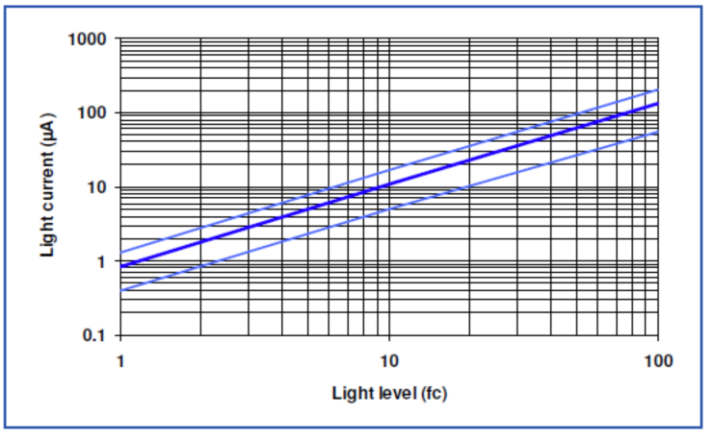
Typical Spectral Responsivity at 25°C



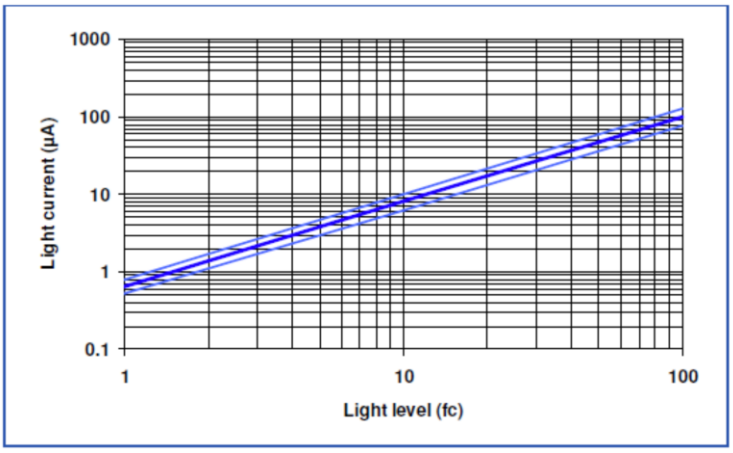
Typical Angular Response



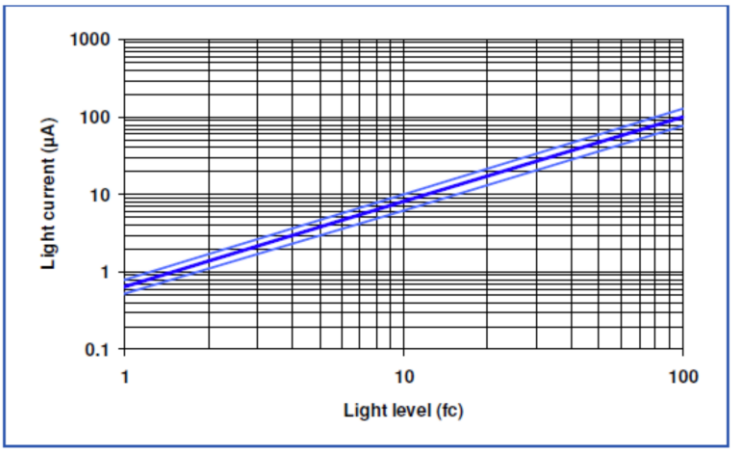
VTT9812FH Output Light Current vs Light Level with min/max bands



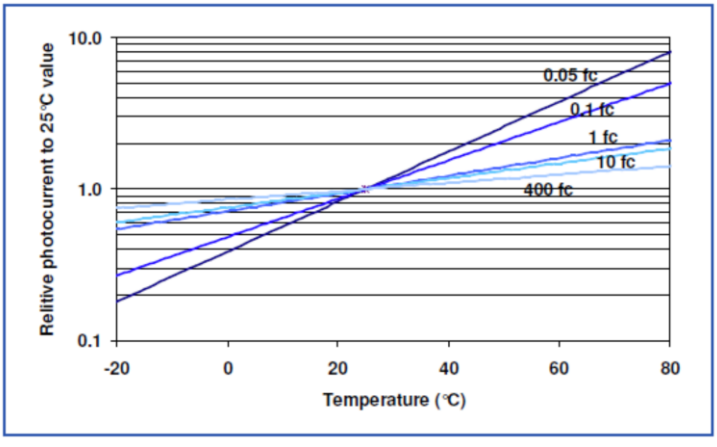
VTT9814FH Output Light Current vs Light Level with min/max bands



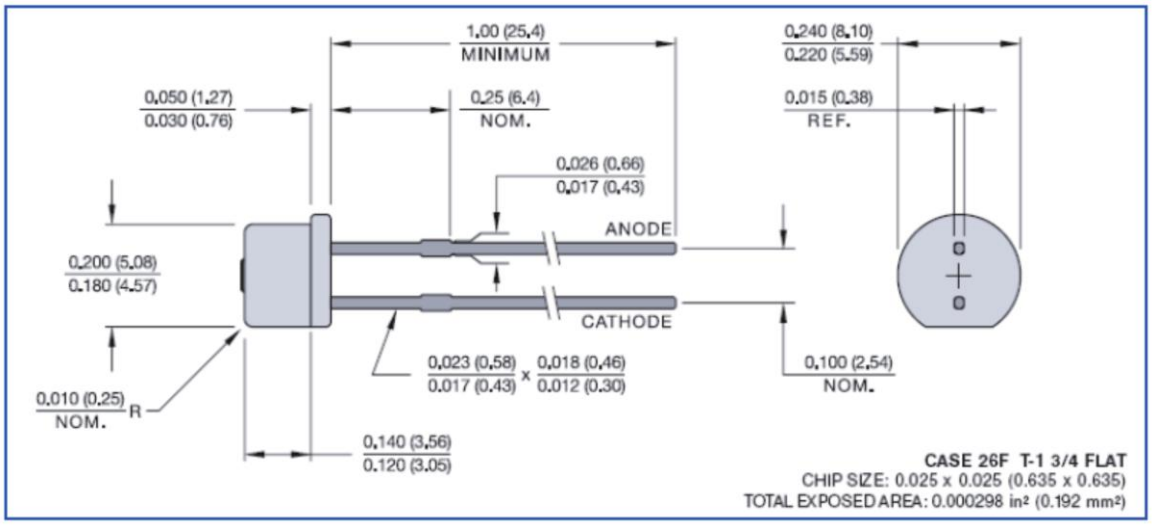
VTT9814FH Output Light Current vs Light Level with min/max bands



Typical Photocurrent Change vs Temperature at Different Light Levels – Normalized to 25°C



Mechanical Characteristics



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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.

From analytical instrumentation to clinical diagnostics, medical, industrial, safety and security, and aerospace and defense applications, Excelitas Technologies is committed to enabling our customers' success in their specialty end-markets. Excelitas Technologies has approximately 3,000 employees in North America, Europe and Asia, serving customers across the world.

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