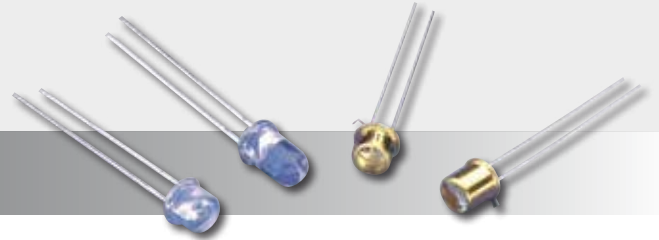


Infrared Emitting Diodes

For High-volume Applications

INFRARED EMITTING DIODES ■

Infrared Emitting Diodes (IREDs) VTE



Infrared Emitting Diodes (IREDs) – VTE

Applications

- Consumer coin readers
- Lottery card readers
- Position sensors – joysticks
- Safety shields
- Encoders – measure speed and direction
- Printers – margin control
- Copiers – monitor paper position or paper stack height

Features and Benefits

- End and side radiating configurations
- Selection of emission angle spread using molded lenses
- Narrow band of emitted wavelengths
- Minimal heat generation
- Low power consumption

Product Description

IREDs are solid state light sources emitting in the near infrared part of the spectrum. The emission wavelength is closely matched to the response peak of silicon photodiodes and phototransistors. The product line provides a broad range of mounting lens and power output options. Both end and side radiating cases are available. Wide arrays of emission beam profiles are available. Devices may be operated in either CW or pulsed operating modes.

IREDs can be combined with Excelitas detectors or phototransistors in integrated assemblies for optoisolators, optical switches and retro sensors. Optical isolators are useful when electrical isolation is required, for example to transmit control logic signals to high power switching circuits (which can be noisy). In an optical switch, an object is detected when it passes between the IRED and detector/phototransistor, for example a coin counter. In a retro sensor, an object is detected when the IRED emitted beam is reflected onto the detector/photodetector. The retro sensor is used in applications where the object changes the reflectance, for example detecting the end of a plywood sheet or other manufactured material.

Our core competencies include: LPE wafer growth; wafer processing of the grown GaAs wafers; assembly using either epoxy die attach; epoxy encapsulation of the IRED LEDs on lead frame; hermetically-sealed package.

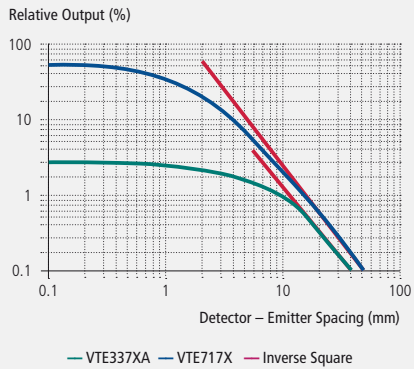
Product Table

Infrared Emitting Diodes (IREDs) – VTE

Part Number		Irradiance			Min. Radiant	Typical Total Peak	Forward Test Current	Max. Forward Voltage	Max Pulsed Forward		Half Power
Symbol		E _e typ.	Distance	Diameter	Intensity	Power	Pulsed	Drop	Current	Wavelength	Beam Angle
Unit	Package	(mW/cm ²)	(mm)	(mm)	(mW/sr)	(mW)	(mA)	(V)	(mA)	(nm)	°
VTE1013H	TO-46	2.7	36	6.4	27	30	1000	2.5	3000	940	±35°
VTE1063H	TO-46	5	36	6.4	49	80	1000	3.5	3000	880	±35°
VTE1113H	TO-46	15	36	6.4	156	30	1000	2.5	3000	940	±10°
VTE1163H	TO-46	28	36	6.4	285	110	1000	3.5	3000	880	±10°
VTE1291-1H	T-1 3/4 lensed (5 mm)	3.3	36	6.4	32	20	100	2	2500	880	±12°
VTE1291-2H	T-1 3/4 lensed (5 mm)	6.5	36	6.4	65	25	100	2	2500	880	±12°
VTE1291W-1H	T-1 3/4 lensed (5 mm)	1.6	36	6.4	16	20	100	2	2500	880	±25°
VTE1291W-2H	T-1 3/4 lensed (5 mm)	3.3	36	6.4	32	25	100	2	2500	880	±25°
VTE1295H	T-1 3/4 lensed (5 mm)	5.5	36	6.4	39	20	100	2	2500	895	±8°
VTE7172H	Lateral	0.6	16.7	4.6	1.1	2.5	20	1.8	2500	880	±25°
VTE7173H	Lateral	0.8	16.7	4.6	1.7	5	20	1.8	2500	880	±25°
VTE3372LAH	T-1 lensed (3 mm)	2.6	10.16	2.1	2	3	20	1.8	2500	880	±10°
VTE3374LAH	T-1 lensed (3 mm)	5.2	10.16	2.1	4.1	5	20	1.8	2500	880	±10°
VTE3375LA	T-1 lensed (3 mm)	"2 (Min.)"	10.16	2.1		3	20	1.8	2500	880	±12.5°
VTE3322LAH	T-1 lensed (3 mm)	1.3	10.16	2.1	1	1.5	20	1.6	3000	940	±10°
VTE3324LAH	T-1 lensed (3 mm)	2.6	10.16	2.1	2	2.5	20	1.6	3000	940	±10°
CR10IRD	SMD	-	-	-	-	6.3	50	2.05	800	770	±90°
CR50IRDA	SMD	-	-	-	-	20	50	1.8	800	870	±90°
CR50IRH	SMD	-	-	-	-	10.6	50	1.85	800	870	±90°
CR50IRK	SMD	-	-	-	-	11.4	50	1.7	800	950	±90°

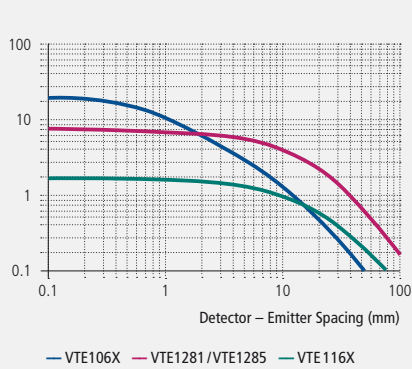
Graph 1

On Axis Rel. Irradiance T-1/Lateral Packages



Graph 2

On Axis Relative Irradiance



Graph 3

Angular Emission

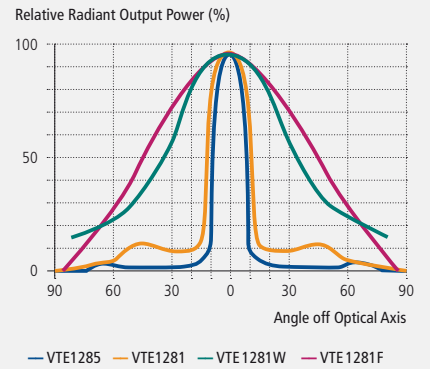
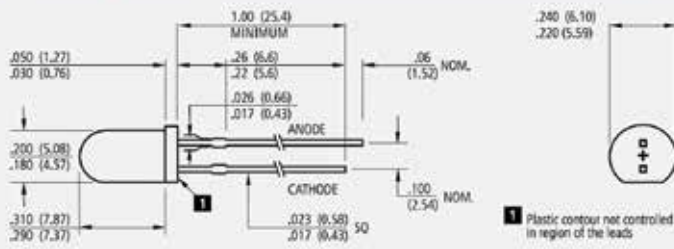


Figure 1

Housing / Package Drawing – VTE1291



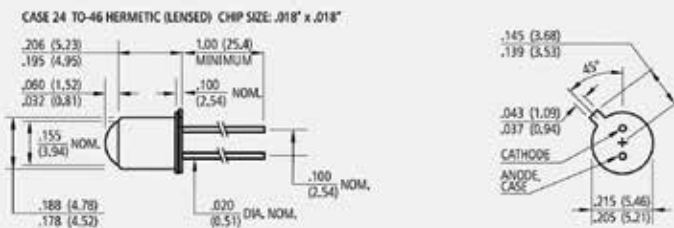
VTE1291H



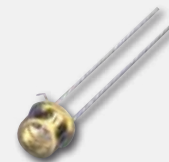
Narrow beam angle T-1¼ bullet package

Figure 2

Housing / Package Drawing – VTE1113H



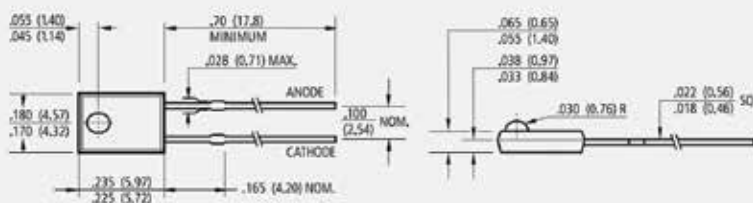
VTE1113H



TO-46 lensed cap

Figure 3

Housing / Package Drawing – VTE7172



VTE7172H



Molded lateral package