PerkinElmer™ optoelectronics.

# SILICON PHOTODIODE
# VTP8740STRH

## FEATURES

- *Surface mount package*
- *Low capacitance*
- *Fast response*
- *High shunt impedance*
- *Tape & reel supplied*

## PRODUCT DESCRIPTION

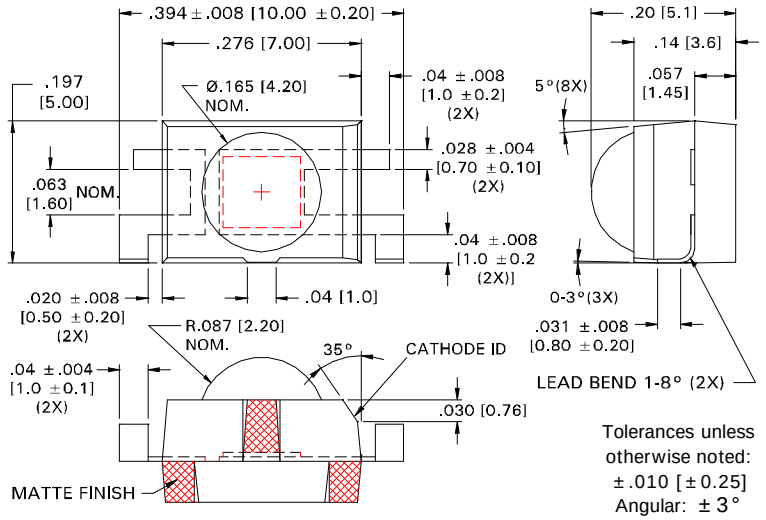
This planar silicon photodiode features a lensed, water clear epoxy package suitable for surface mount assembly in a “side mounted” orientation.

These photodiodes exhibit performance characteristics which make them suitable for a wide range of near-IR sensing applications. Devices are shipped taped & reeled on a 24 mm embossed carrier.

## ELECTRO-OPTICAL CHARACTERISTICS @ 25° C

| PARAMETER | SYMBOL | MIN. | TYP. | MAX. | UNITS |
|---|---|---|---|---|---|
| SHORT CIRCUIT CURRENT @ 100 fc, 2850 K | $I_{SC}$ | 75 | 90 | | µA |
| DARK CURRENT @ $V_R$ = 10 V | $I_D$ | | | 20 | nA |
| SHUNT RESISTANCE @ H = 0, V = 10 mV | $R_{SH}$ | | 0.25 | | GΩ |
| JUNCTION CAPACITANCE @ $V_R$ = 3 V | $C_J$ | | | 50 | pF |
| OPEN CIRCUIT VOLTAGE @ 100 fc, 2850 K | $V_{OC}$ | 325 | | | mV |
| ANGULAR RESPONSE (50% RESPONSE POINT) | $\theta_{1/2}$ | | ±42 | | Degrees |

## PACKAGE DIMENSIONS inch (mm)

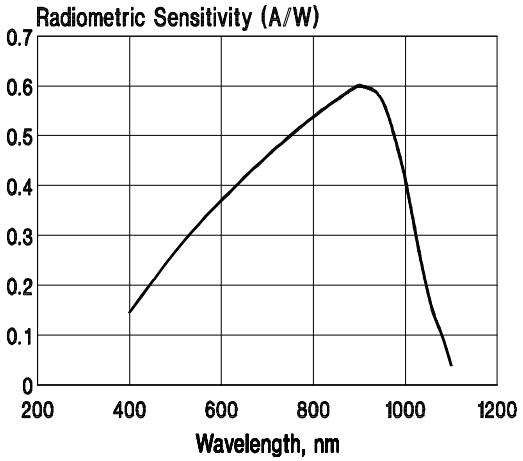



Tolerances unless otherwise noted:
± .010 [± 0.25]
Angular: ± 3°

CHIP SIZE: .100 x .116 (2.54 x 2.94)
EXPOSED ACTIVE AREA: .0082 in$^2$ (5.269 mm$^2$)

## RoHS Compliant

TYPICAL SPECTRAL RESPONSE




VTP8740STRDS Rev. A 09011

## GENERAL CHARACTERISTICS

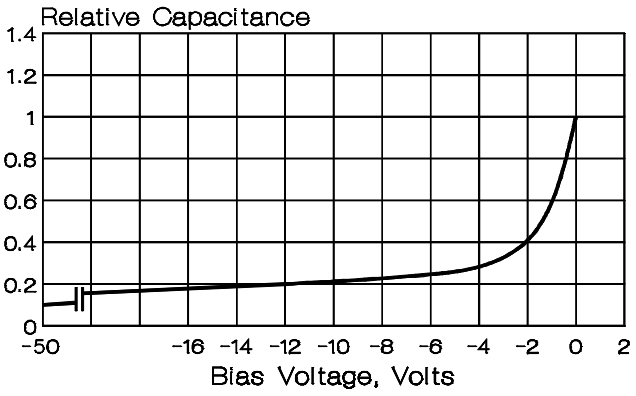
| PARAMETER | SYMBOL | TYPICAL RATING | UNITS |
|---|---|---|---|
| PEAK SPECTRAL RESPONSE @ 25°C | $\lambda_P$ | 925 | nm |
| RADIOMETRIC SENSITIVITY @ PEAK, 25°C | $S_{RPK}$ | 0.6 | A / W |
| NOISE EQUIVALENT POWER | NEP | $2.0 \times 10^{-13}$ | W/ $\sqrt{Hz}$ |
| SPECIFIC DETECTIVITY | D* | $1.2 \times 10^{12}$ | cm $\sqrt{Hz}$ /W |
| TEMPERATURE COEFFICIENT | | | |
| SHORT CIRCUIT CURRENT @ 2850 K SOURCE | TC $I_{SC}$ | +0.22 | %/°C |
| OPEN CIRCUIT VOLTAGE @ 2850 K SOURCE | TC $V_{OC}$ | – 2.0 | mV/ C |
| DARK CURRENT | TC $I_D$ | +15.0 | %/°C |

## ABSOLUTE MAXIMUM RATINGS

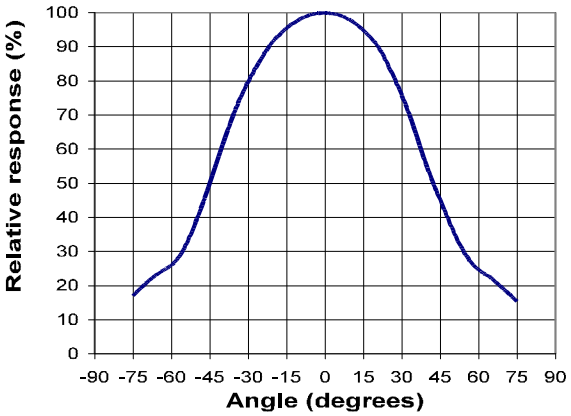
| PARAMETER | SYMBOL | RATING | UNITS |
|---|---|---|---|
| TEMPERATURE RANGE OPERATING AND STORAGE | $T_{AMB}$ | – 40 to +85 | °C |
| LEAD SOLDER TEMPERATURE (1.6 mm FROM CASE, 5 SECONDS MAX.) | $T_{LS}$ | 260° | °C |
| BREAKDOWN VOLTAGE @ 25°C | $V_{BR}$ | 33 | Volts |
| POWER DISSIPATION | $P_D$ | 150 | mW |

## TYPICAL CHARACTERISTIC CURVES

RELATIVE JUNCTION CAPACITANCE vs BIAS VOLTAGE
(REFERRED TO ZERO BIAS)




ANGULAR RESPONSE



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