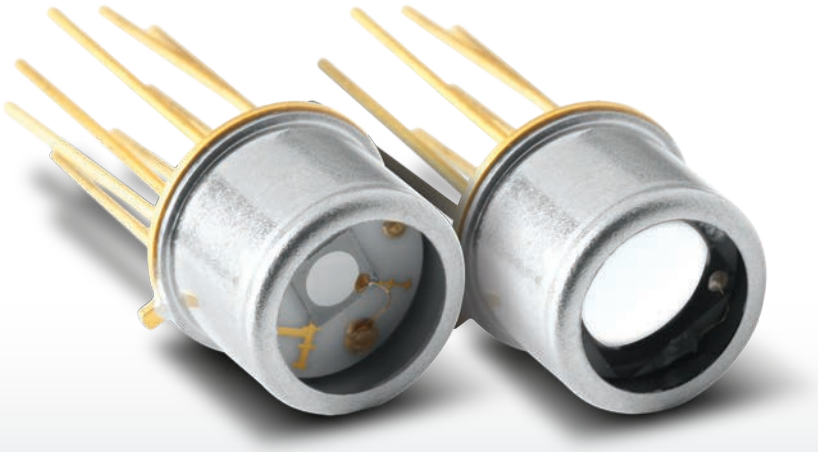
TECHNICAL NOTE

PYROELECTRIC DETECTORS
HOW TO HANDLE THOSE SENSITIVE DETECTORS



Our high performance Pyroelectric Detectors are quite fragile and require special handling when preparing for shipment, receiving, lab use and/or soldering.

APPLIES TO MODELS

- QS-H Discrete Pyros
- QS-L Discrete Pyros
- QS-IL Hybrid Pyros
- QS-FL Hybrid Pyros
- QS-VL Hybrid Pyros
- QS-THZ THz Hybrid Pyros

TECHNICAL DESCRIPTION

Our detectors are made from very thin pyro crystals which are mounted onto a TO header or metalized ceramic. They are packaged in a TO5 or TO8 housing which does not include a window or filter (unless you order one). This is to take advantage of their broad spectral response. The detector crystal is usually mounted forward in the package close to the opening in the TO can. This results in a wide field of view, but also leaves the detector element somewhat exposed. Our Hybrid detectors include a very sensitive current or voltage mode circuit inside. The devices are quite sensitive to static electricity (ESD).

PACKAGING

To minimize the chance of damage due to static electricity, we always place our detectors in a black anti-static box, with their TO header pins pushed into conductive foam.

Anti-static foam and box

REMOVAL FROM PACKAGE

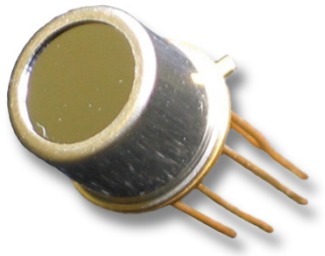
For our Hybrid Detectors (QS-IL, QS-IF and QS-VL), we suggest you transport the device to where it will be used, in its anti-static packaging. Once you're ready to remove it, make sure you're using an *earth ground strap on your wrist*. Carefully insert the QS detector into your circuit board or our QS-I-TEST or QS-V-TEST test box. For our discrete QS-L or QS-H detectors, it is not critical to wear a ground strap as they do not include an Op Amp or FET.

T 418.651.8003 1888 5GENTEC F 418.651.1174 www.gentec-eo.com info@gentec-eo.com

TECHNICAL NOTE

PHYSICAL HANDLING

As these devices are typically windowless, you must be careful not to touch the Pyro crystal with your fingers or any other tool when holding, installing or transporting them. You could otherwise break the crystal. If you've acquired a detector that includes a permanent window, you'll only have to worry about damaging the window. We recommend that you do not put much downward pressure on the window which is glued in place.



Pyro with Si5 Window

ADVICE ON CLEANING

For windowless detectors, the best way to remove dust or contaminants from the detector element is to use a compressed dry nitrogen purge. Do not make contact with the element. If you have a windowed detector then we'd recommend you use acetone and a cotton swab to remove finger prints or other materials. Do not attempt to clean these detectors by emersion into a fluid (like ultrasonic baths). Even our windowed detectors can be damaged as they are not hermetically sealed. They must be carefully cleaned by hand.

SOLDERING GUIDELINES

If you plan on soldering these detectors into a circuit board, you must do it manually! Our detectors will not survive a wave soldering process.

- Do not use soldering irons of more than 25 Watts
- Use adequate heat sinking when soldering the pins
- Do not exceed 3 seconds at 280°C or 5 seconds at 240°C
- Be careful not to short the TO header to other traces on your PCB

Please refer to our Application Note 201931 before assembling these detectors into your PCB

THERMAL SATURATION

Please see our Application Note 201926 on "Thermal Saturation with QS-IF and QS-IL".

Questions? Don't hesitate to contact us at (503) 697-1870 or ddooley@gentec-eo.com.