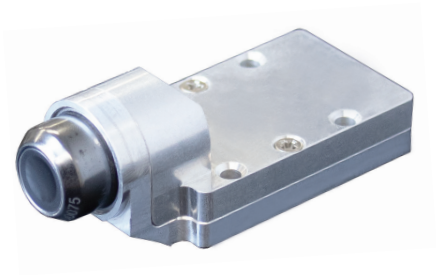
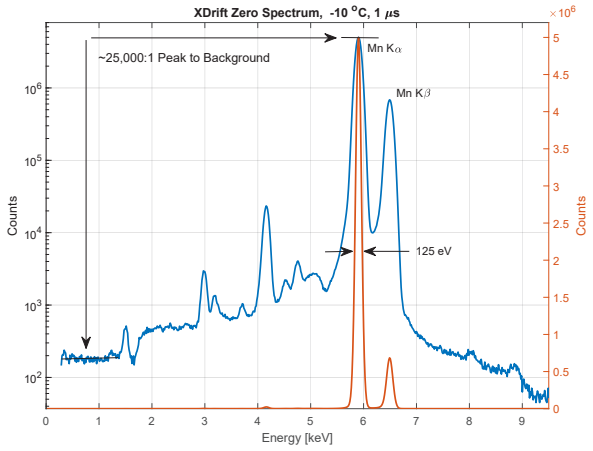
XDRIFT™ Zero

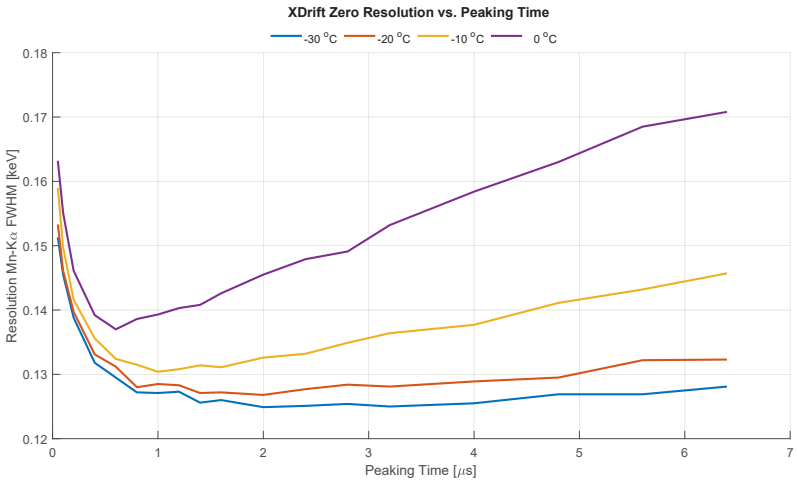
Silicon Drift Detector Datasheet

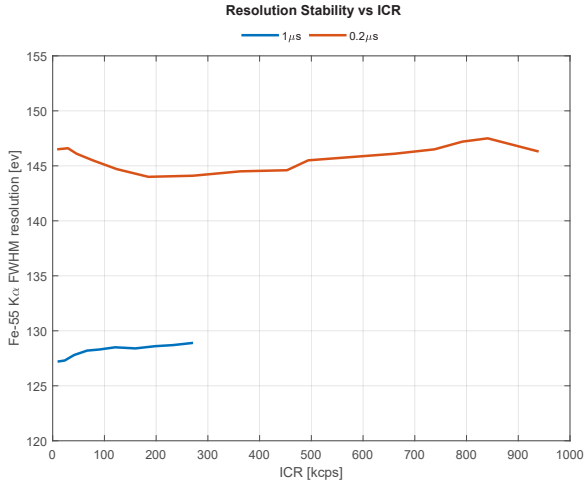


XDRIFT™ Zero - SDD

Moxtek's 20 mm² silicon drift detector (SDD) is the newest x-ray detector in our product line. With an 8 µm beryllium window and vacuum encapsulation it's ready to use for your XRF x-ray detector application.







Applications

Portable/Benchtop XRF

- RoHS/WEEE *(testing)*
- Light element analysis
- Alloy sorting/Metallurgy
- Scientific research
- Nuclear monitoring
- Quality control
- Coating analysis
- Plastic additive analysis
- Soil analysis
- OSHA compliance
- Contamination sampling
- Archeology
- Art authentication
- Forensic
- Mobile crime lab

Standard Package Includes:

XDRIFT™ Zero

- Vacuum sealed detector module
- DuraBeryllium® window
- CMOS ASIC
- Silicon Drift Detector
- Preamplifier with a 10 pin FFC type input/output connector

MOXTEK®

Specifications

Diode Active Area: 30 mm^2
Internal Collimated Open Area: 20 mm^2
Diode Thickness: 500 µm
Detector Window: 8 µm thick DuraBeryllium®
Collimator Material: Multilayer W/ Ni/ Cr/ Al
Energy Resolution: ≤ 135eV FWHM @ 1 µs PT, -10˚ C
≤ 150eV FWHM @ 0.2 µs PT, -10˚ C
Peak to Background: >15,000:1 @ 1keV (typical)
Test Conditions: XIA uDXP DPP, -10˚ C, Fe55, 5.89keV
Weight: 31 grams (with heat sink)
Standard Warranty: 1 year

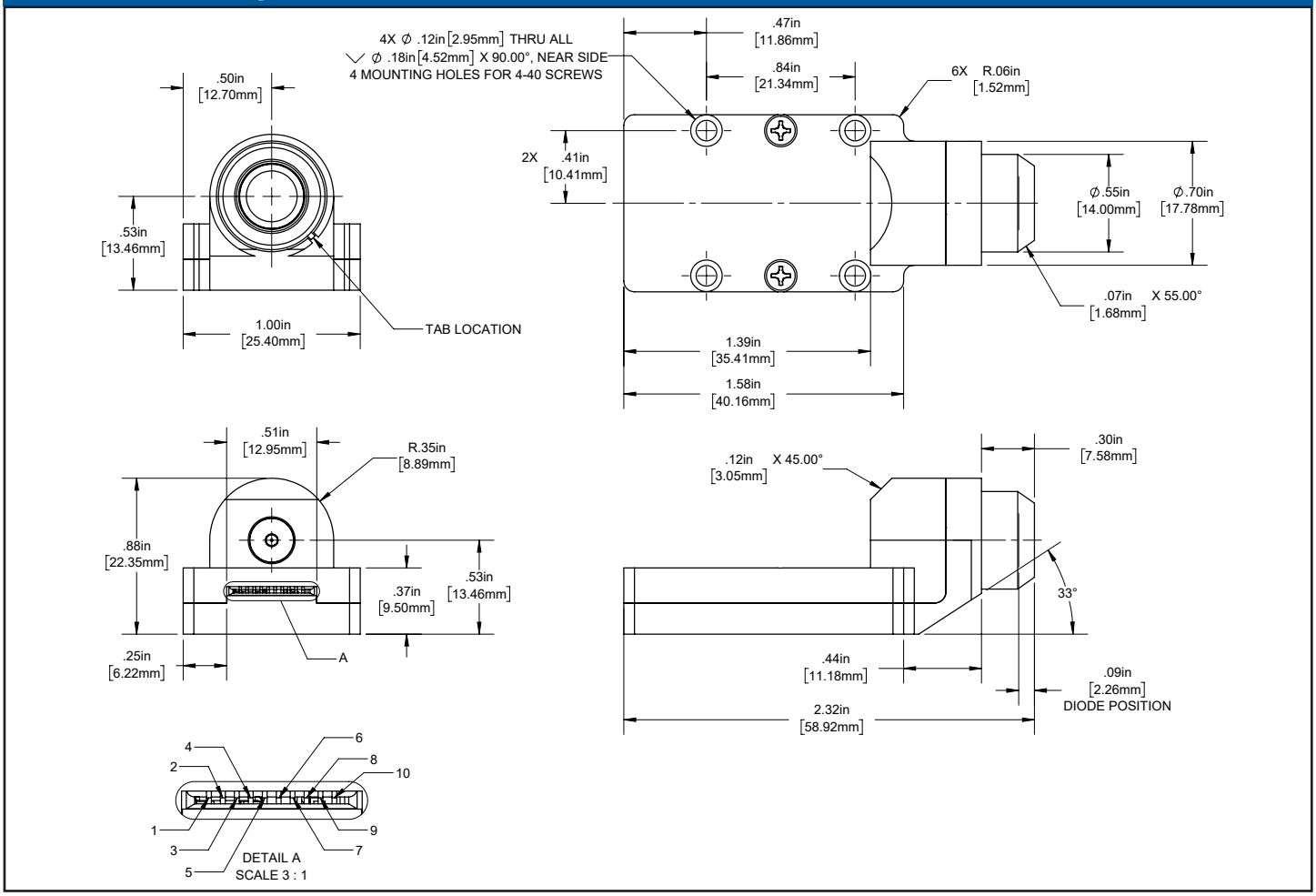
Operating Parameters

Parameter	Typical Value	Operating Limits or Conditions
Low Voltage Bias (Positive)	+5V	+4.9V to +5.3V
Low Voltage Bias (Negative)	-5V	-5.3V to -4.9V
High Voltage Bias (Negative)	-130V	-120V to -140V
Ramp Threshold (Positive)	+2.0V	
Ramp Threshold (Negative)	-1.0V	
Preamp Gain	3.5mV/keV	
TEC Supply	0.5 A for -10° C	1.2 A, 2.6V max
TEC ΔT	70° C	@ 55° C heat sink temperature
Temperature Read	10kΩ Thermistor	

Preamp Pinout

Pin ID	Name	Description	Set
1	TEC -	Temperature Control	GND
2	TEC +	Temperature Control	+2.6V VDC Max
3	+ 5V In	Low Voltage Bias (Positive)	+5V
4	- 5V In	Low Voltage Bias (Negative)	-5V
5	GND	Signal Ground	GND
6	Ramp	Output Signal	N/A
7	Therm	Temperature Read (10 KΩ Thermistor)	N/A
8	GND	Signal Ground	GND
9	NC	Not Connected	N/A
10	- HV In	High Voltage Bias (Negative)	-130V

Mechanical Drawing



Moxtek, Inc.
452 West 1260 North
Orem, UT 84057

P **801.225.0930**
moxtek.com