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Teledyne Judson Technologies

J24

MWIR InAsSb SLS Detectors

9-19-2017

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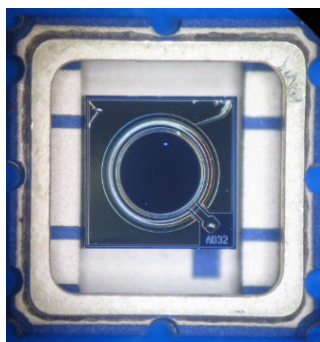
For additional information, please email: judsonInfo@teledyne.com

Introducing: MWIR InAsSb SLS Detector

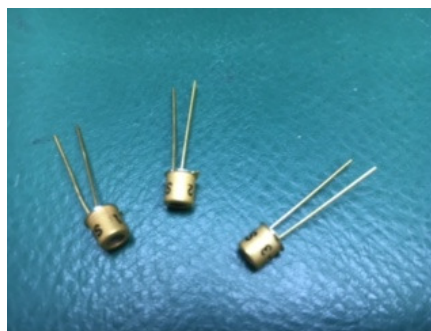
- TJT is introducing a new photovoltaic InAsSb infrared (IR) detector series (J24) based on Strained Layer Superlattice (SLS) structure. The recent introduction is for 250um and 1mm diameter discrete detectors operating in the mid-wave infrared (MWIR) band. TJT InAsSb detectors provide excellent quantum efficiency (QE) and deliver good sensitivity (D^* or NEP) and responsivity for applications as gas detection and temperature sensing in industrial, environmental, consumer and IOT applications. Room temperature, non-cooled, low-cost detectors are offered in TO-18 and SMD packages. TJT is also offering detectors with integrated thermo-electric (TE) cooling in a TO-66 package.

MWIR Detector Specs, 0.25mm & 1mm Dia

Detector Model Number	Active Size Diameter (mm)	Operating Temp (°C)	50% Cutoff Wavelength (μm) typ	Peak Wavelength (μm) typ	Peak Responsivity (A/W)		Shunt impedance (Ω)		Dark Current (A)		Peak D* (Jones) @ 10KHz		NEP (W/rt-Hz) @ peak wavelength		Reverse bias (mV) typ
					min	typ	min	typ	typ	max	min	typ	typ	max	
J24:5.4-18C-R250U	0.25	22	5.4	4.4	1.50	1.80	5.0E+03	1.0E+04	3.0E-03	6.0E-03	7.58E+08	1.29E+09	1.72E-11	2.92E-11	200
J24TE1:5-66C-R250U	0.25	-20	5.2	4.3	1.45	1.75	2.0E+04	4.0E+04	3.0E-04	6.0E-04	2.31E+09	3.95E+09	5.61E-12	9.57E-12	200
J24TE2:5-66C-R250U	0.25	-40	5.1	4.2	1.40	1.70	8.0E+04	1.6E+05	6.0E-05	1.2E-04	5.00E+09	8.58E+09	2.58E-12	4.44E-12	200
J24TE3:5-66C-R250U	0.25	-65	5.0	4.1	1.35	1.65	4.0E+05	8.0E+05	1.0E-05	2.0E-05	1.18E+10	2.04E+10	1.09E-12	1.88E-12	200
J24:5.4-18C-R01M	1	22	5.4	4.4	1.50	1.80	8.0E+02	1.6E+03	3.0E-02	6.0E-02	9.59E+08	1.63E+09	5.45E-11	9.24E-11	300
J24TE1:5-66C-R01M	1	-20	5.2	4.3	1.45	1.75	4.0E+03	8.0E+03	3.0E-03	6.0E-03	2.93E+09	5.00E+09	1.77E-11	3.02E-11	300
J24TE2:5-66C-R01M	1	-40	5.1	4.2	1.40	1.70	3.2E+04	6.4E+04	6.0E-04	1.2E-03	6.33E+09	1.09E+10	8.16E-12	1.40E-11	300
J24TE3:5-66C-R01M	1	-65	5.0	4.1	1.35	1.65	1.0E+05	2.0E+05	1.0E-04	2.0E-04	1.49E+10	2.58E+10	3.43E-12	5.93E-12	300



SMD



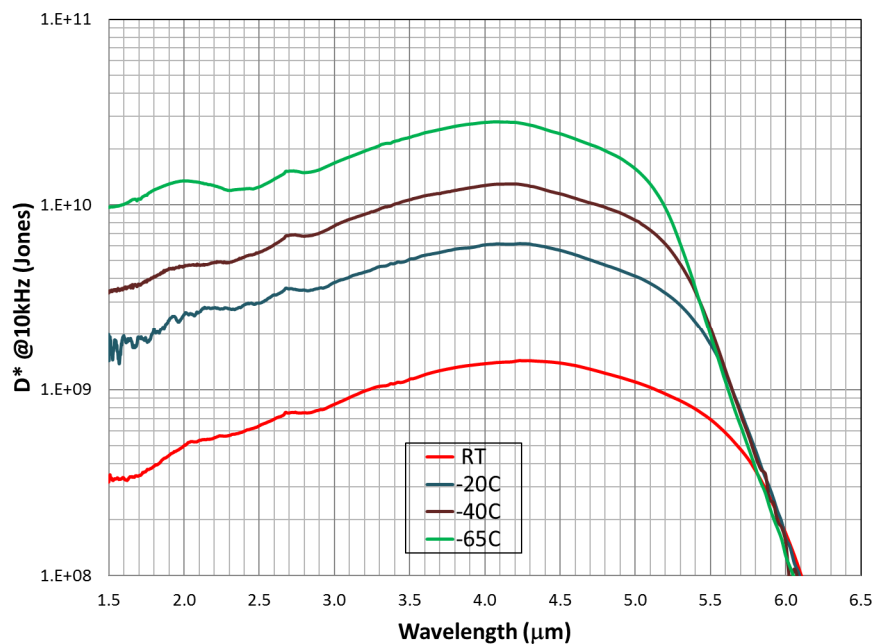
TO-18



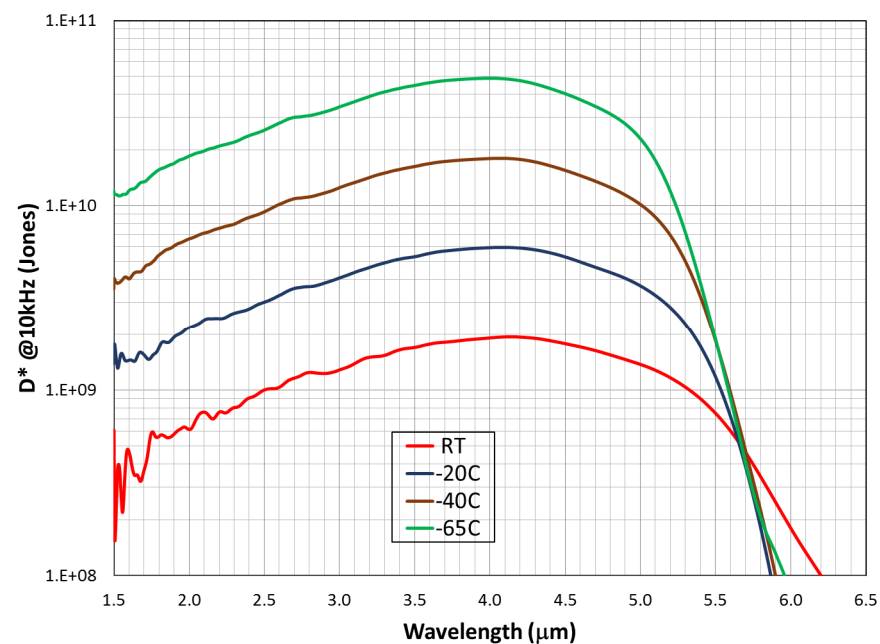
TO-66

Spectral D* at Various Temperatures

0.25mm

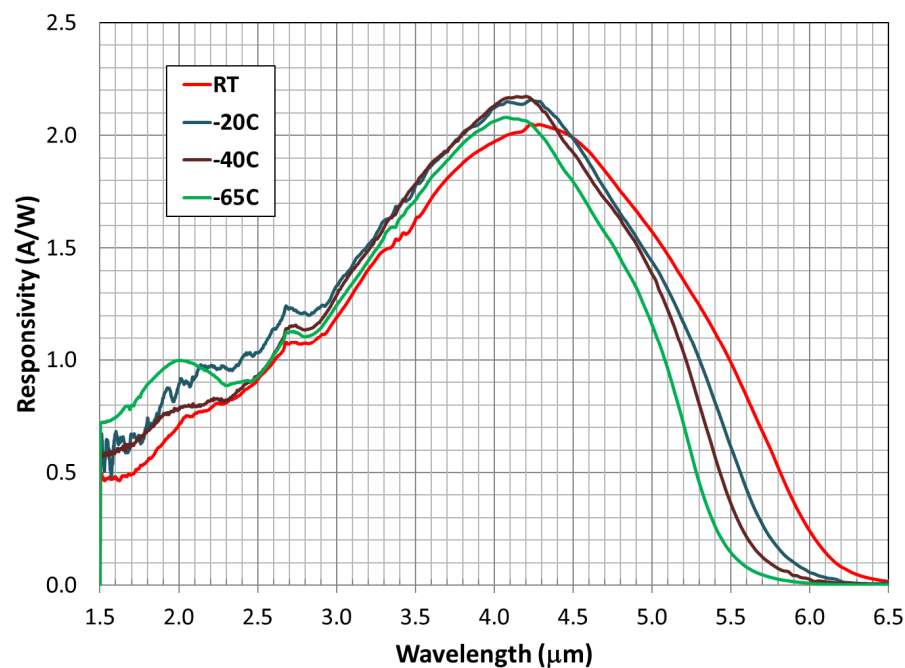


1mm

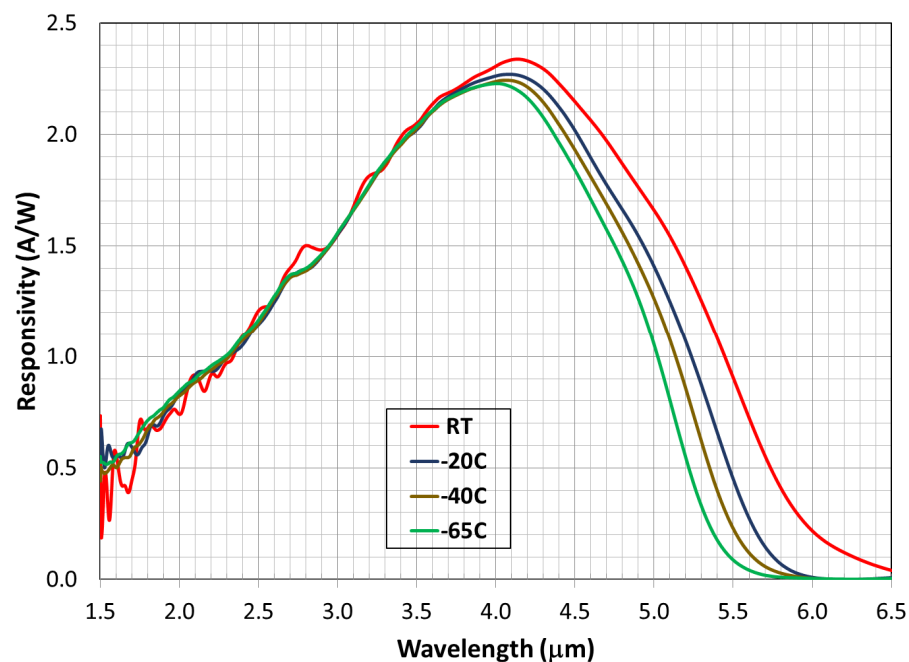


Spectral Responsivity at Various Temperatures

0.25mm

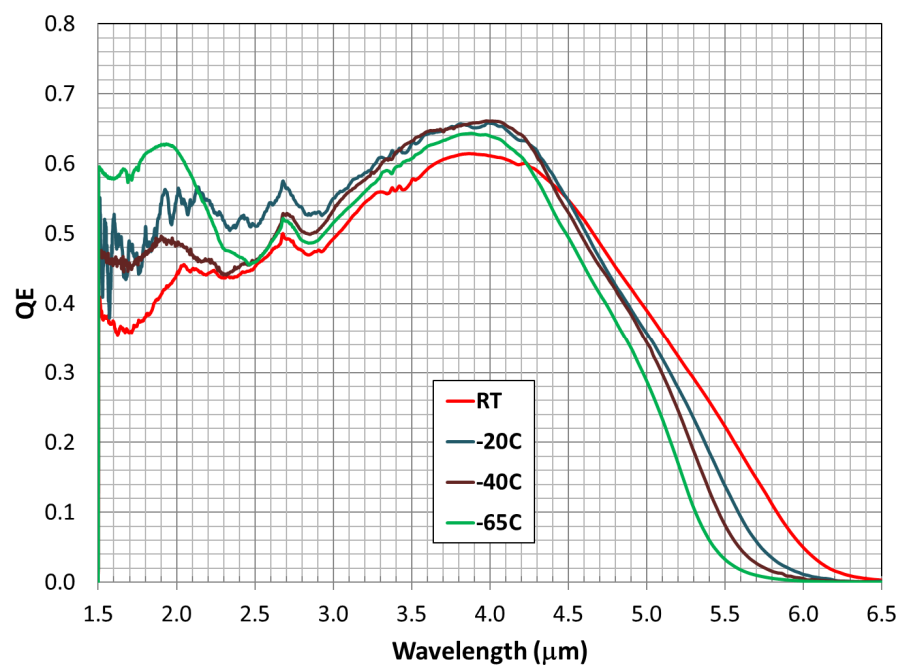


1mm

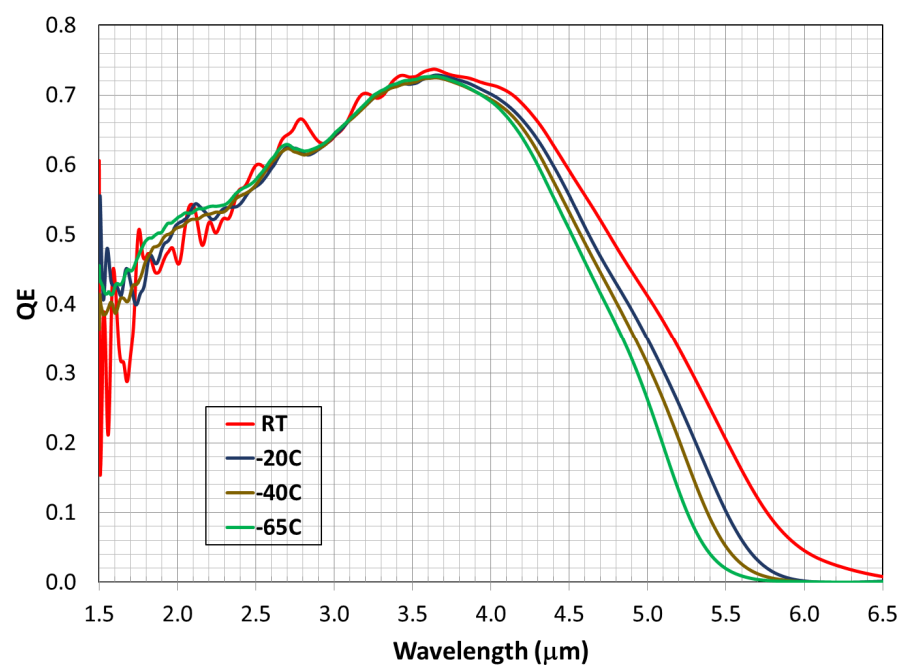


Spectral QE at Various Temperatures

0.25mm

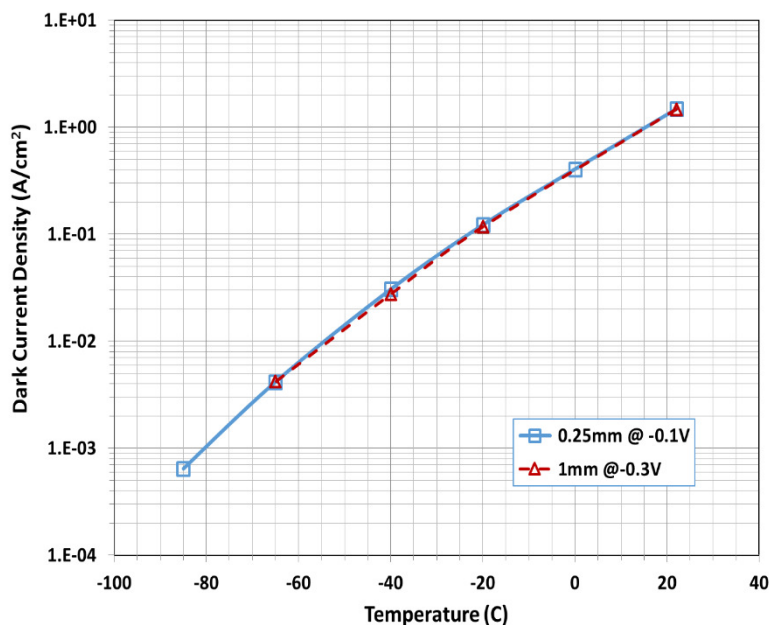


1mm

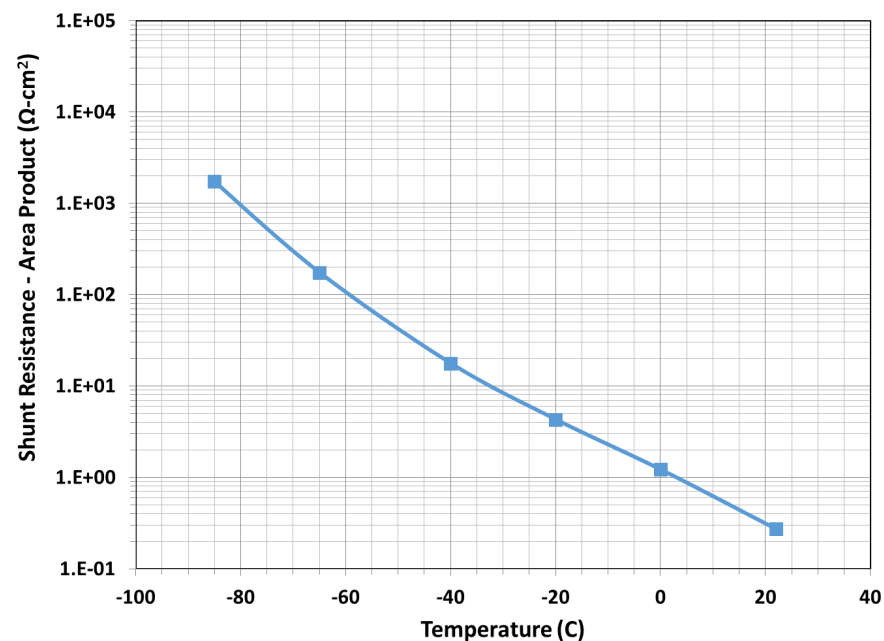


Dark Current Density and Shunt Resistance-Area Product, Temperature Dependence

0.25mm & 1mm



0.25mm





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