

**Peak Emission Wavelengths: 1040, 1200, 1300, 1460, 1550nm**  
**Detector Sensitivity Wavelength Range: 600-1750nm**

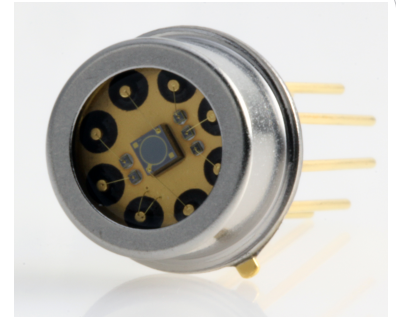
The MTMD142345PDT38 is a SWIR multi-chip emitter with a InGaAs Photodiode designed for applications requiring various emission sources in a small, densely packaged area. These devices can be custom designed for specific wavelengths and outputs.

**FEATURES**

- > Hermetically Sealed TO-5 Metal Can Package
- > PIN Photodiode Chip Active Area: 1.0mm
- > High Output Power

**APPLICATIONS**

- > High Speed Communications
- > Medical / Chemical Analysis
- > Biofluorescence Analysis



**Emitter Absolute Maximum Ratings (Ta=25°C)**



ITEMS	SYMBOL	RATINGS					UNIT
		1040	1200	1300	1460	1550	
Forward Current (DC)	IF	50	50	50	50	50	mA
Forward Current (Pulse) *1	IFP	--	--	--	--	--	A
Reverse Voltage	VR	5	5	5	5	5	V
Power Dissipation	PD	65	50	50	50	50	mW
Operating Temperature Range	Topr	-20~+85					°C
Storage Temperature Range	Tstg	-30~+100					°C
Junction Temperature	Tj	100					°C
Lead Soldering Temperature *2	Tls	260					°C

\*1: Tw=10µsec, T=10msec. \*2: Time 5 Sec max; Position: Up to 3mm from the body.

**Emitter Electrical & Optical Characteristics (Ta=25°C)**

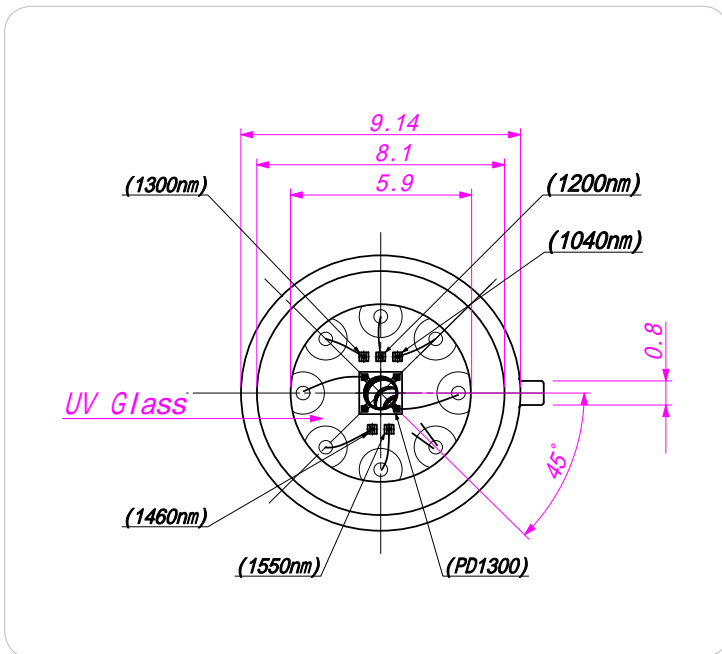
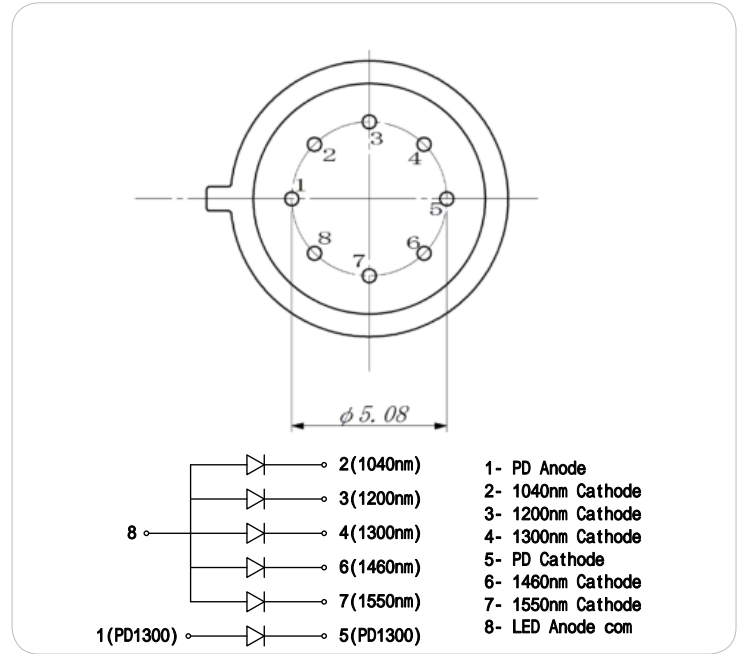
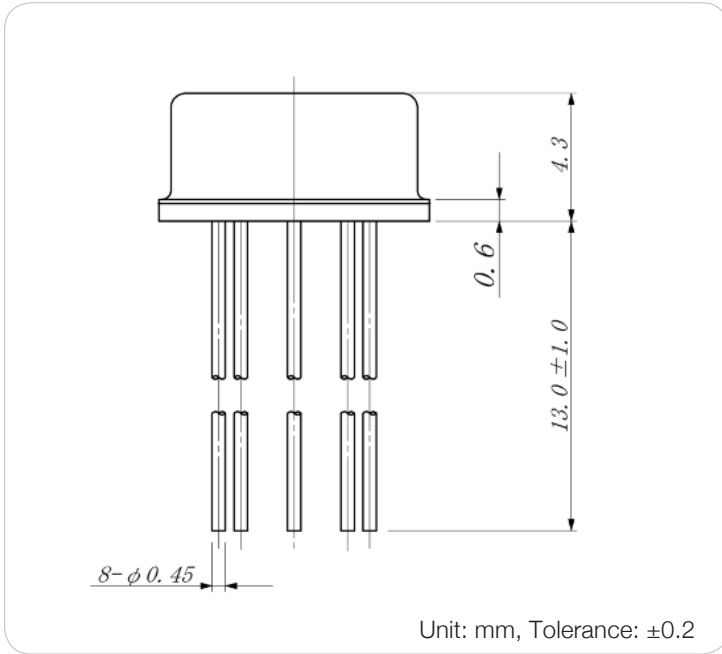
ITEMS	SYMBOL	WAVELENGTH	CONDITIONS	MIN	TYP	MAX	UNIT
Forward Voltage	VF	1040	IF=20mA	--	1.24	--	V
Forward Voltage	VF	1200	IF=20mA	--	0.98	--	V
Forward Voltage	VF	1300	IF=20mA	--	0.97	--	V
Forward Voltage	VF	1460	IF=20mA	--	0.91	--	V
Forward Voltage	VF	1550	IF=20mA	--	0.91	--	V
Reverse Current	IR	--	VR=5V	--	--	10	µA
Power Output	PO	1040	IF=20mA	--	4.0	--	mW
Power Output	PO	1200	IF=20mA	--	3.0	--	mW
Power Output	PO	1300	IF=20mA	--	2.7	--	mW
Power Output	PO	1460	IF=20mA	--	2.1	--	mW
Power Output	PO	1550	IF=20mA	--	1.8	--	mW

## Emitter Electrical & Optical Characteristics (Ta=25°C)

ITEMS	SYMBOL	WAVELENGTH	CONDITIONS	MIN	TYP	MAX	UNIT
Peak Emission Wavelength	$\lambda_p$	1040	IF=20mA	--	1037	--	nm
Peak Emission Wavelength	$\lambda_p$	1200	IF=20mA	--	1205	--	nm
Peak Emission Wavelength	$\lambda_p$	1300	IF=20mA	--	1297	--	nm
Peak Emission Wavelength	$\lambda_p$	1460	IF=20mA	--	1456	--	nm
Peak Emission Wavelength	$\lambda_p$	1550	IF=20mA	--	1535	--	nm
Spectral Line Half Width	$\Delta\lambda$	1040	IF=20mA	--	37	--	nm
Spectral Line Half Width	$\Delta\lambda$	1200	IF=20mA	--	60	--	nm
Spectral Line Half Width	$\Delta\lambda$	1300	IF=20mA	--	69	--	nm
Spectral Line Half Width	$\Delta\lambda$	1460	IF=20mA	--	105	--	nm
Spectral Line Half Width	$\Delta\lambda$	1550	IF=20mA	--	102	--	nm

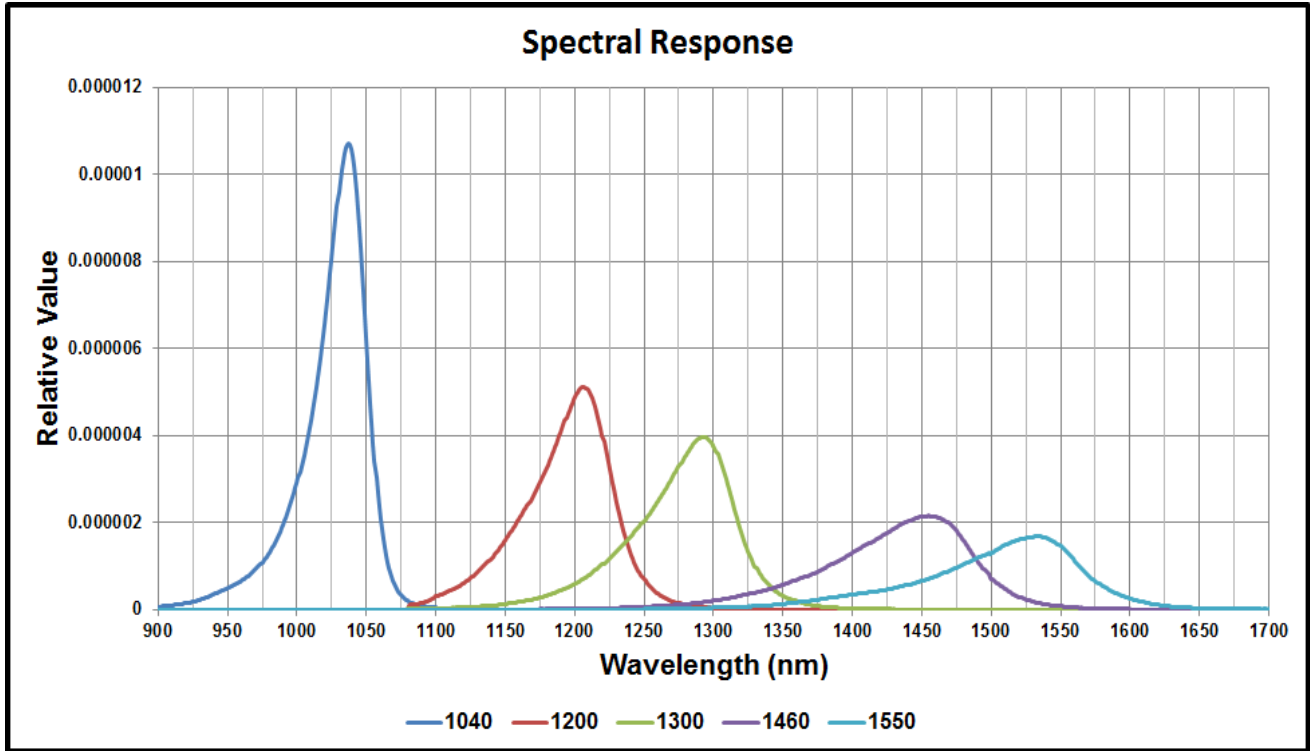
## Detector Electrical & Optical Characteristics (Ta = 25°C)

ITEMS	SYMBOL	CONDITION	MIN	TYP	MAX	UNIT
Breakdown Voltage	VR	IR=10uA	3.0	--	--	V
Sensitivity Range	$\lambda$	VR=0V	600	--	1750	nm
Dark Current	ID	VR=1V	--	--	2.0	uA
Capacitance	C	VR=0V	--	60	--	pF
Responsivity	R	$\lambda=1660\text{nm}$	--	0.70	--	A/W
Shunt Resistance	RS	VR=10mV	--	2	--	MOhm
Quantum Efficiency	QE	$\lambda=1550\text{nm}$	--	55	--	%
Light Current @1300nm	IL	$\lambda=1300\text{nm}$	--	180	--	uA
Rise and Fall Time	TR, TR	VR=2V	--	0.63	--	ns



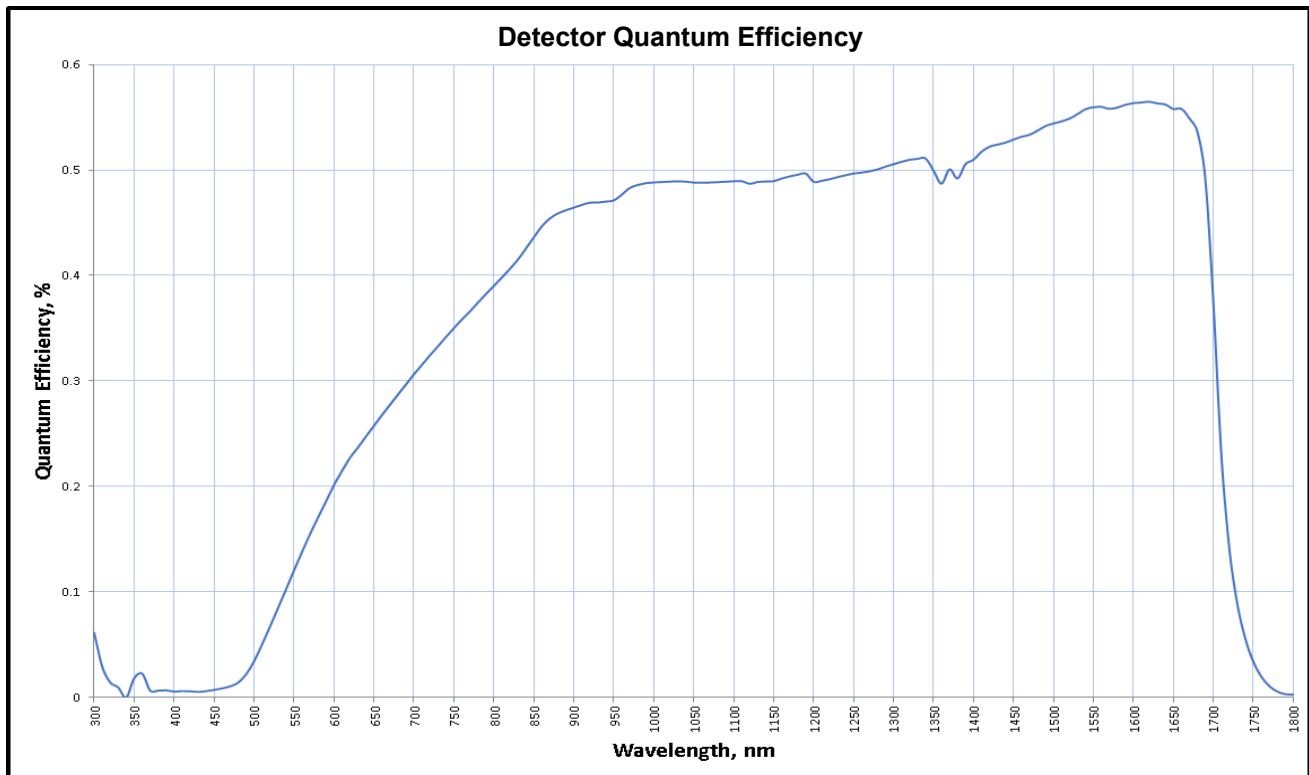
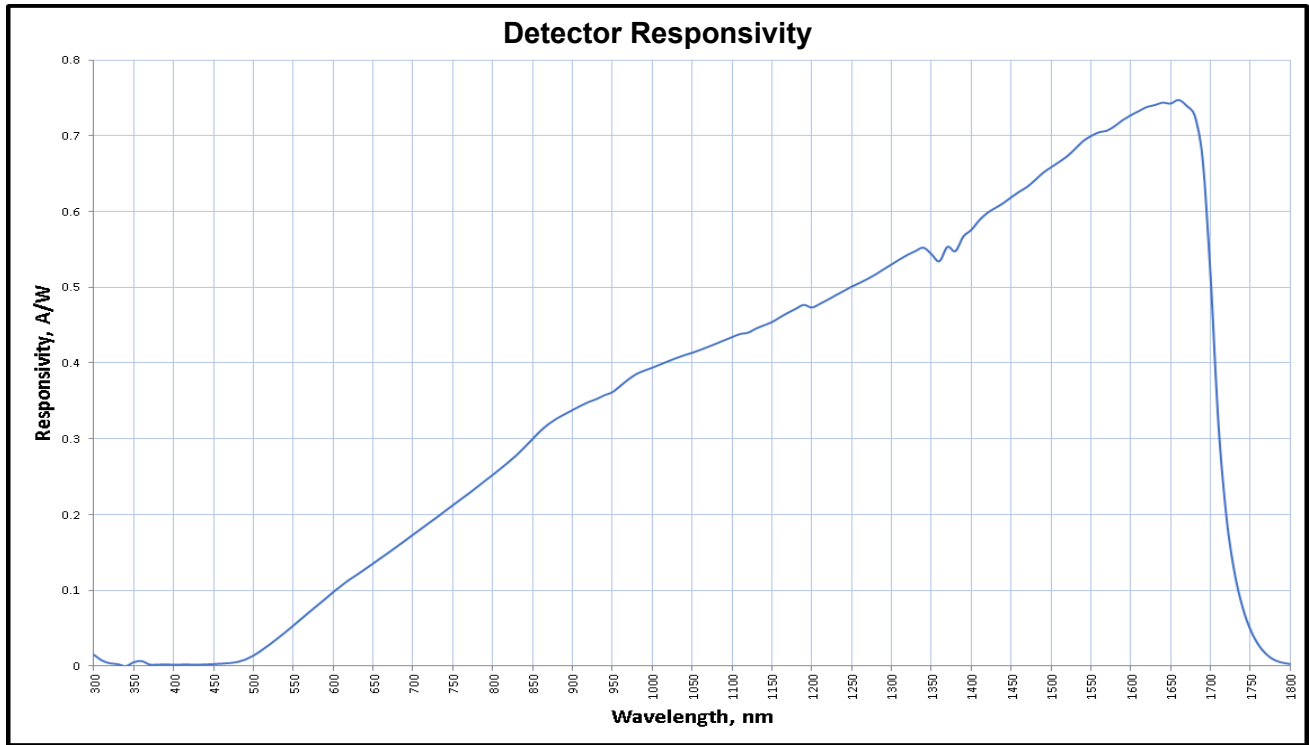
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