

## Peak Emission Wavelengths: Various Combinations Emitter Sensitivity Wavelength Range: 275-760nm

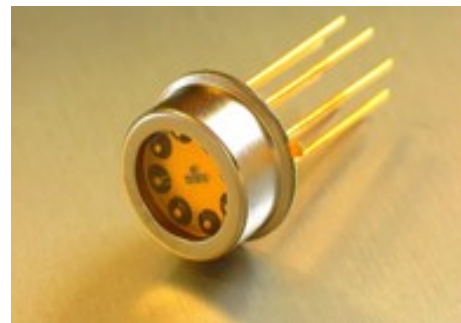
The MTMDXXXXT38 is a multi-chip emitter designed for applications requiring various emission sources in a small, densely packaged area. These devices can be custom designed for specific wavelengths and outputs.

### FEATURES

- > Hermetically Sealed TO-5 Metal Can Package
- > Various Wavelength Combinations Available
- > High Output Power

### APPLICATIONS

- > Spectroscopy
- > Medical / Chemical Analysis
- > Biofluorescence Analysis



## Multichip Emitter Devices



| PART NUMBER | CONFIGURATION / DESCRIPTION |
|-------------|-----------------------------|
| MTMD4270T38 | 428nm, 700nm, 428nm, 700nm  |
| MTMD2333T38 | 275nm, 310nm, 360nm, 380nm  |
| MTMD3143T38 | 310nm, 430nm, 310nm, 430nm  |
| MTMD3334T38 | 310nm, 360nm, 380nm, 430nm  |
| MTMD2336T38 | 275nm, 310nm, 360nm, 275nm  |
| MTMD3445T38 | 360nm, 405nm, 430nm, 565nm  |
| MTMD3340T38 | 310nm, 310nm, 340nm, 405nm  |
| MTMD6376T38 | 635nm, 760nm, 635nm, 760nm  |

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

| ITEMS                    | SYMBOL | WAVELENGTHS |     |     |     |     |     |     |     |     |     |     | UNIT |
|--------------------------|--------|-------------|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|------|
|                          |        | 275         | 310 | 340 | 360 | 380 | 405 | 430 | 565 | 635 | 700 | 760 |      |
| Forward Current (DC)     | IF     | 50          | 50  | 50  | 50  | 50  | 50  | 50  | 50  | 50  | 50  | 50  | mA   |
| Reverse Current (VR=10V) | IR     | 5           | 5   | 5   | 5   | 5   | 5   | 5   | 5   | 5   | 5   | 5   | uA   |
| Reverse Voltage          | VR     | 5           | 5   | 5   | 5   | 5   | 5   | 5   | 5   | 5   | 5   | 5   | V    |
| Power Dissipation        | PD     | 50          | 50  | 50  | 50  | 50  | 50  | 50  | 50  | 50  | 50  | 50  | mW   |
| Operating Temp Range     | Topr   | -20~+85     |     |     |     |     |     |     |     |     |     |     | °C   |
| Storage Temp Range       | Tstg   | -30~+100    |     |     |     |     |     |     |     |     |     |     | °C   |
| Junction Temperature     | Tj     | 100         |     |     |     |     |     |     |     |     |     |     | °C   |
| Lead Soldering Temp *1   | 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     | 275        | IF=20mA    | --  | 7.0  | 8.0 | V    |
| Forward Voltage | VF     | 310        | IF=20mA    | --  | 6.5  | 7.5 | V    |
| Forward Voltage | VF     | 340        | IF=20mA    | --  | 4.0  | 5.5 | V    |
| Forward Voltage | VF     | 360        | IF=20mA    | 3.2 | 3.6  | 4.2 | V    |
| Forward Voltage | VF     | 380        | IF=20mA    | 3.3 | 3.4  | 3.5 | V    |
| Forward Voltage | VF     | 405        | IF=20mA    | --  | 1.24 | 3.5 | V    |
| Forward Voltage | VF     | 430        | IF=20mA    | --  | --   | 3.5 | V    |
| Forward Voltage | VF     | 565        | IF=20mA    | --  | 2.0  | 2.4 | V    |
| Forward Voltage | VF     | 635        | IF=20mA    | --  | --   | 2.5 | V    |
| Forward Voltage | VF     | 700        | IF=20mA    | --  | --   | 2.2 | V    |
| Forward Voltage | VF     | 760        | IF=20mA    | --  | 1.65 | 2.0 | V    |

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

| ITEMS        | SYMBOL | WAVELENGTH | CONDITION | MIN | TYP | MAX  | UNIT  |
|--------------|--------|------------|-----------|-----|-----|------|-------|
| Power Output | PO     | 275        | IF=20mA   | 1.0 | 2.0 | --   | mW    |
| Power Output | PO     | 310        | IF=20mA   | 0.8 | 1.0 | --   | mW    |
| Power Output | PO     | 340        | IF=20mA   | 1.0 | 1.5 | --   | mW    |
| Power Output | PO     | 360        | IF=20mA   | 0.5 | --  | 1.5  | mW    |
| Power Output | PO     | 380        | IF=20mA   | 14  | 15  | 15.5 | mW/sr |
| Power Output | PO     | 405        | IF=20mA   | 28  | 30  | 32   | mW    |
| Power Output | PO     | 430        | IF=20mA   | --  | 16  | --   | mW    |
| Power Output | PO     | 565        | IF=20mA   | --  | 15  | --   | mcd   |
| Power Output | PO     | 635        | IF=20mA   | 500 | 600 | 750  | mcd   |
| Power Output | PO     | 700        | IF=20mA   | --  | 1.5 | --   | mW    |
| Power Output | PO     | 760        | IF=20mA   | 1.5 | 2.5 | --   | mW    |

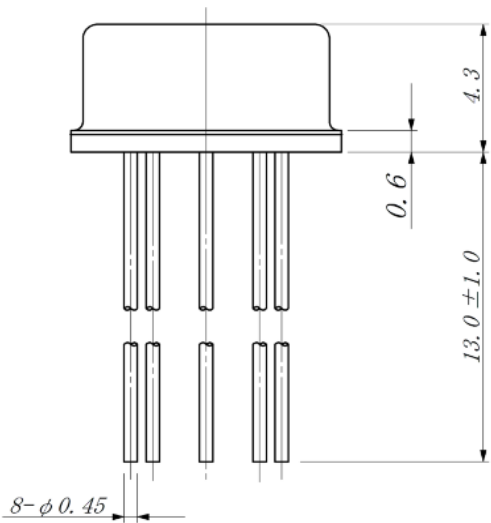
**Emitter Electrical & Optical Characteristics (Ta=25°C)**

| ITEMS           | SYMBOL      | WAVELENGTH | CONDITIONS | MIN | TYP | MAX   | UNIT |
|-----------------|-------------|------------|------------|-----|-----|-------|------|
| Peak Wavelength | $\lambda_p$ | 275        | IF=20mA    | 270 | 280 | 290   | nm   |
| Peak Wavelength | $\lambda_p$ | 310        | IF=20mA    | 305 | 310 | 315   | nm   |
| Peak Wavelength | $\lambda_p$ | 340        | IF=20mA    | 335 | 340 | 345   | nm   |
| Peak Wavelength | $\lambda_p$ | 360        | IF=20mA    | 360 | --  | 363   | nm   |
| Peak Wavelength | $\lambda_p$ | 380        | IF=20mA    | --  | 380 | 382.5 | nm   |
| Peak Wavelength | $\lambda_p$ | 405        | IF=20mA    | 400 | 405 | 3410  | nm   |
| Peak Wavelength | $\lambda_p$ | 430        | IF=20mA    | --  | 430 | --    | nm   |
| Peak Wavelength | $\lambda_p$ | 565        | IF=20mA    | --  | 565 | --    | nm   |
| Peak Wavelength | $\lambda_p$ | 635        | IF=20mA    | --  | 635 | --    | nm   |
| Peak Wavelength | $\lambda_p$ | 700        | IF=20mA    | --  | 700 | --    | nm   |
| Peak Wavelength | $\lambda_p$ | 760        | IF=20mA    | 755 | 760 | 765   | nm   |

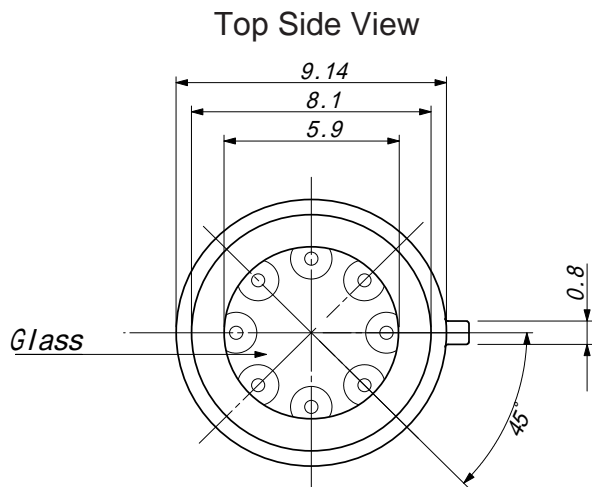
**Emitter Electrical & Optical Characteristics (Ta=25°C)**

| ITEMS                    | SYMBOL          | WAVELENGTH | CONDITIONS | MIN | TYP | MAX | UNIT |
|--------------------------|-----------------|------------|------------|-----|-----|-----|------|
| Spectral Line Half Width | $\Delta\lambda$ | 275        | IF=20mA    | --  | 10  | --  | nm   |
| Spectral Line Half Width | $\Delta\lambda$ | 310        | IF=20mA    | --  | 10  | --  | nm   |
| Spectral Line Half Width | $\Delta\lambda$ | 340        | IF=20mA    | --  | 9   | --  | nm   |
| Spectral Line Half Width | $\Delta\lambda$ | 360        | IF=20mA    | --  | 15  | --  | nm   |
| Spectral Line Half Width | $\Delta\lambda$ | 380        | IF=20mA    | --  | --  | --  | nm   |
| Spectral Line Half Width | $\Delta\lambda$ | 405        | IF=20mA    | --  | 30  | --  | nm   |
| Spectral Line Half Width | $\Delta\lambda$ | 430        | IF=20mA    | --  | 15  | --  | nm   |
| Spectral Line Half Width | $\Delta\lambda$ | 565        | IF=20mA    | --  | 13  | --  | nm   |
| Spectral Line Half Width | $\Delta\lambda$ | 635        | IF=20mA    | --  | 18  | --  | nm   |
| Spectral Line Half Width | $\Delta\lambda$ | 700        | IF=20mA    | --  | 30  | --  | nm   |
| Spectral Line Half Width | $\Delta\lambda$ | 760        | IF=20mA    | --  | 27  | --  | nm   |

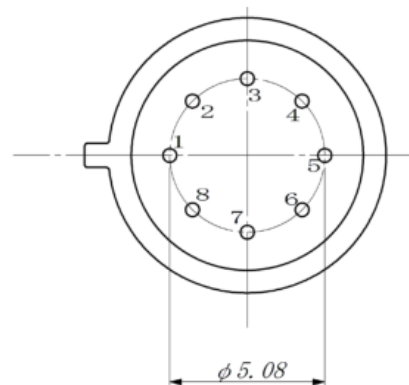
Package Dimensions



Unit: mm, Tolerance: ±0.2

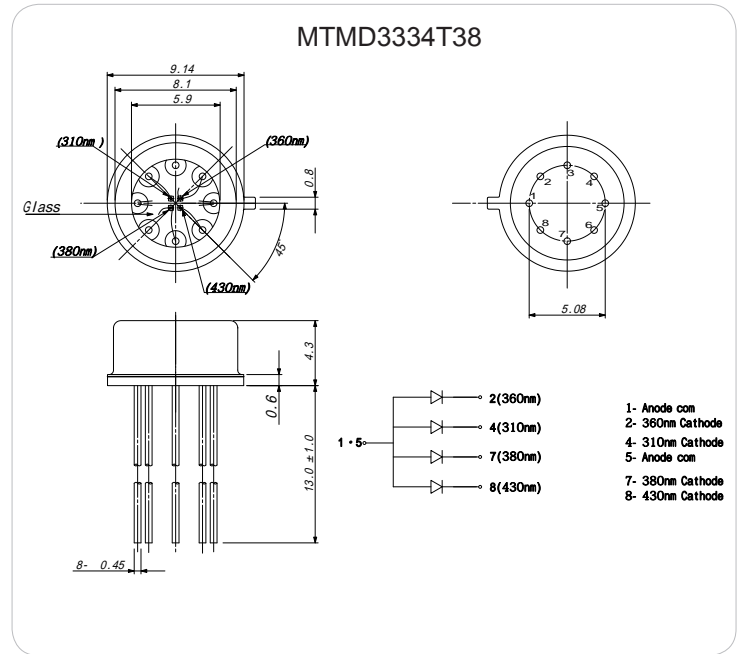
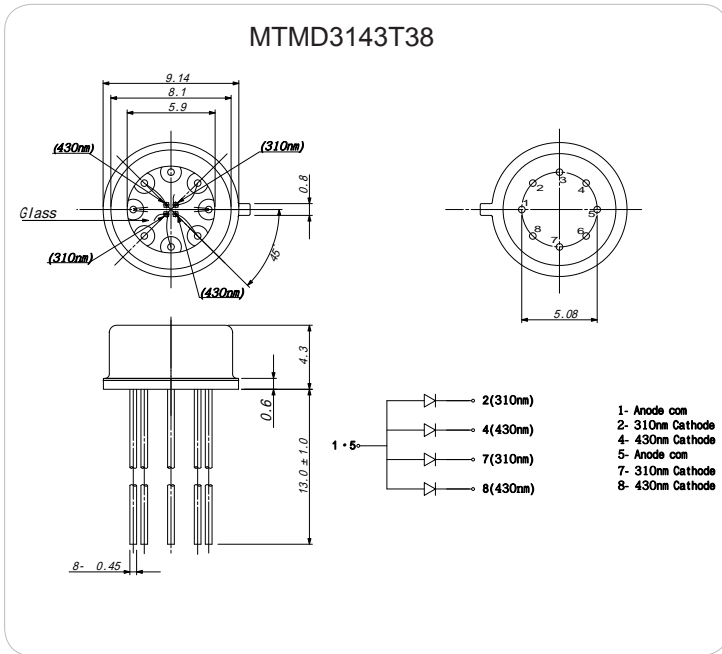
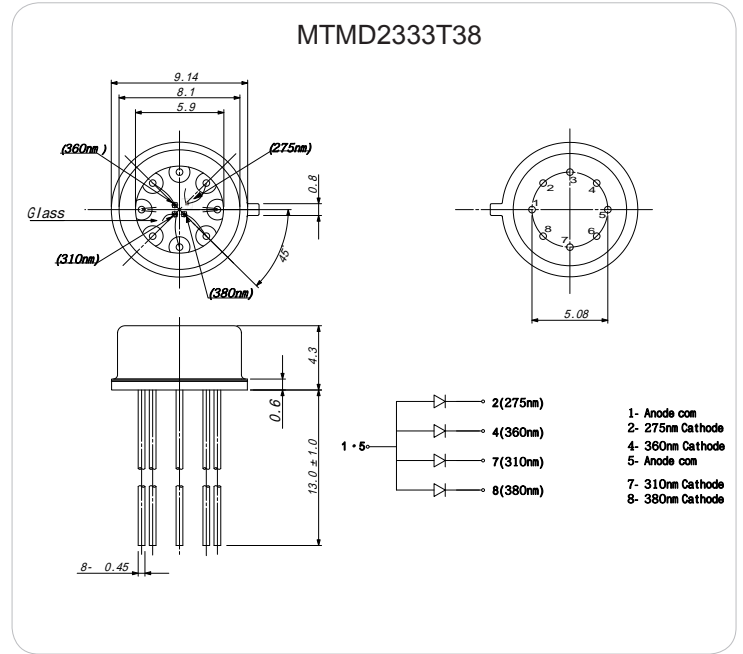
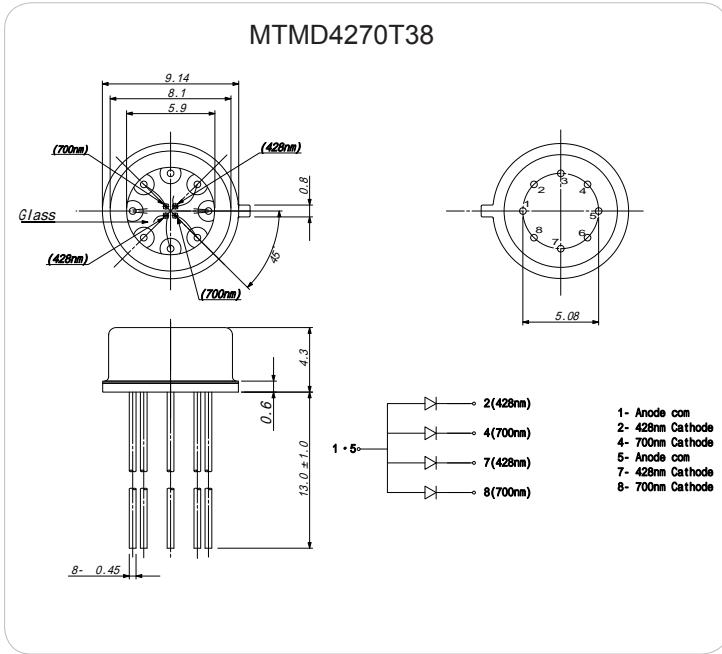


Bottom Side View



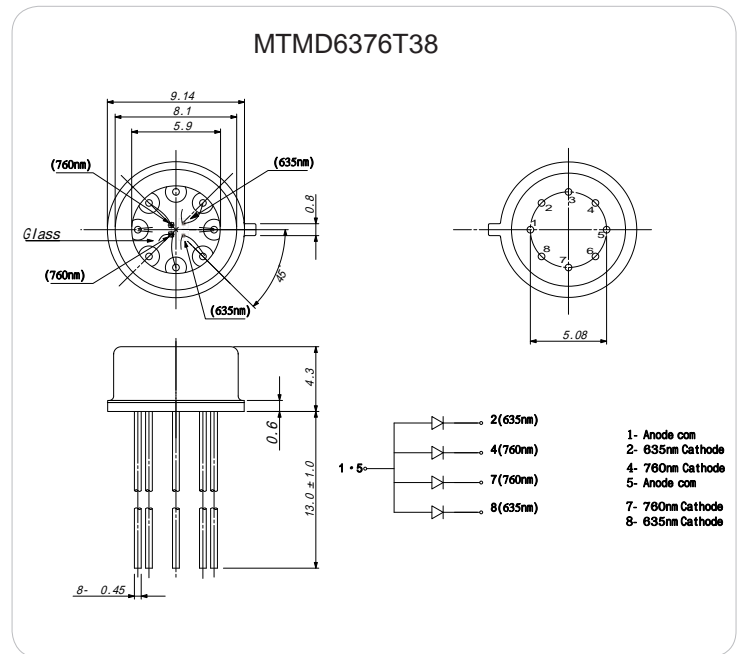
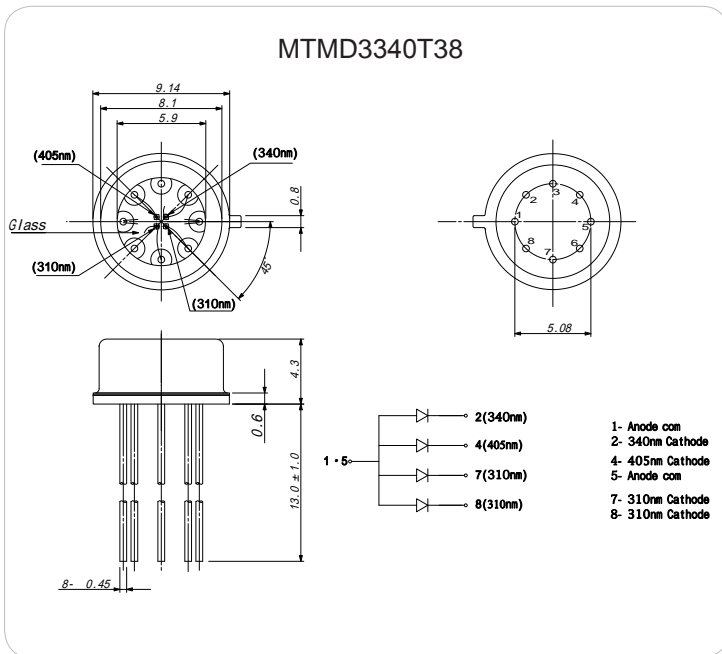
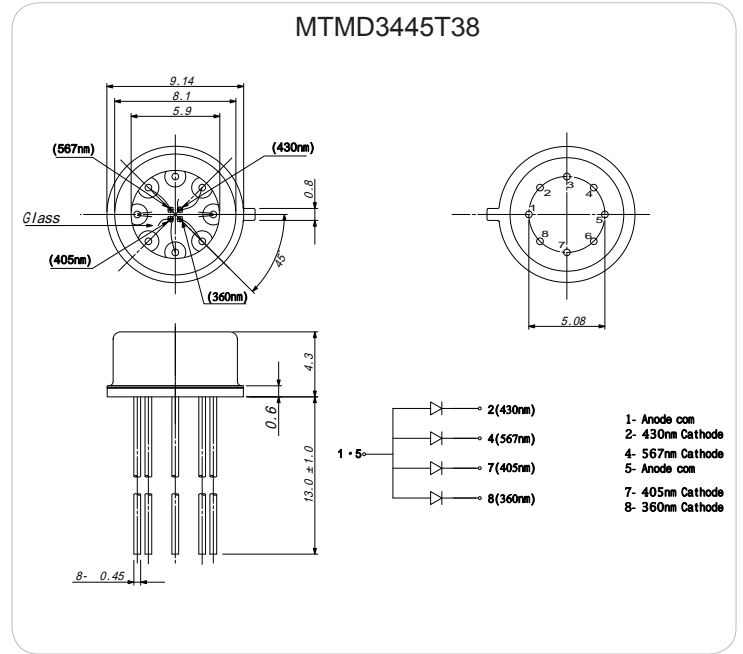
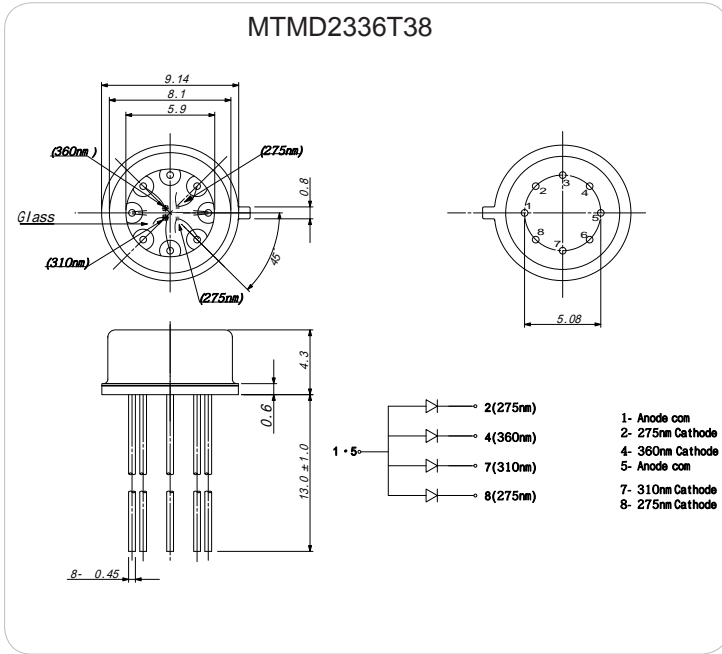
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