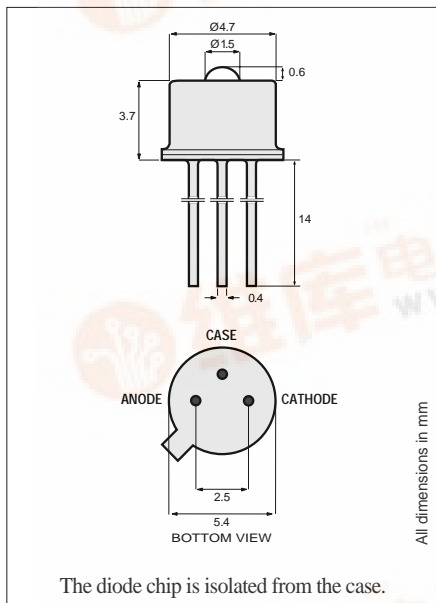
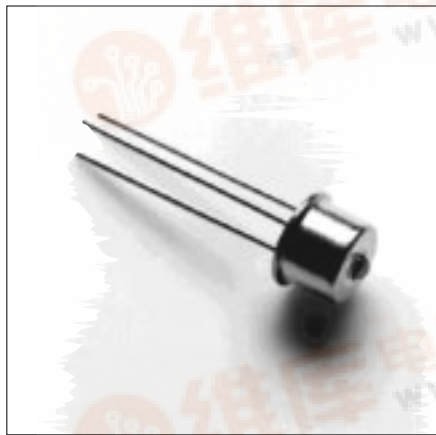


PRODUCT INFORMATION

| | | |
|--------|--------------------------------------|----------------|
| 1320nm | 1A439 High-Performance LED | Datacom |
|--------|--------------------------------------|----------------|

This device is designed for FDDI and ATM 155 Mbps applications and offers an excellent price/performance ratio for cost-effective solutions. Its double-lens optical system results in optimum coupling of power into the fiber.



The diode chip is isolated from the case.

TO-46 Package With Lens

Optical and Electrical Characteristics (Case Temperature -25 to +70°C)

| PARAMETER | SYMBOL | MIN. | TYP. | MAX. | UNIT | TEST CONDITION |
|--------------------------------------|--------------------|-------|------|------|---------------|---|
| Fiber-Coupled Power (Fig.1,2,&3) | P_{fiber} | -18.5 | | | dBm | $I_F=60\text{mA}$ (Note 1) Fiber: 62.5/125 μm |
| Rise and Fall Time (10-90%, no bias) | t_r, t_f | | 2.5 | | ns | $I_F=60\text{mA}$ (Note 2) Graded Index NA=0.275 |
| Bandwidth (3dB $_{e1}$) | f_c | | 125 | | MHz | $I_F=60\text{mA}$ |
| Center Wavelength | λ_c | | 1320 | | nm | $I_F=60\text{mA}$ (Note 2) |
| Spectral Width (FWHM) | $\Delta\lambda$ | | 135 | | nm | $I_F=60\text{mA}$ (Note 2) |
| Forward Voltage (Fig.5) | V_F | | 1.3 | 1.65 | V | $I_F=60\text{mA}$ |
| Reverse Current | I_R | | | 100 | μA | $V_R=1\text{V}$ |
| Capacitance | C | | 200 | | pF | $V_R=0\text{V}, f=1\text{MHz}$ |

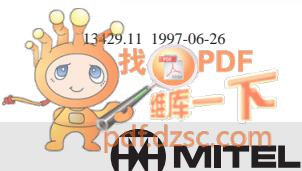
Note 1: Average power at 10 MHz//50% duty cycle. Measured at the exit of 100 meters of fiber.
Note 2: Meets the FDDI ANSI X3T9.5 specification.

Absolute Maximum Ratings

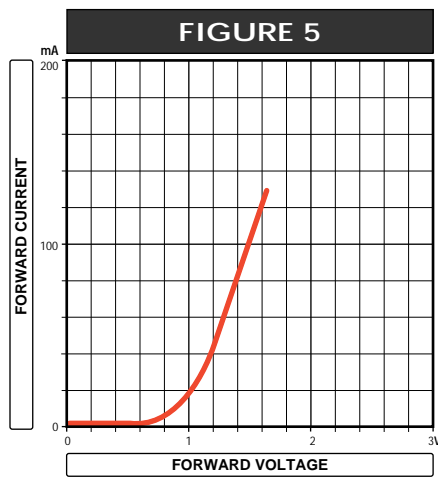
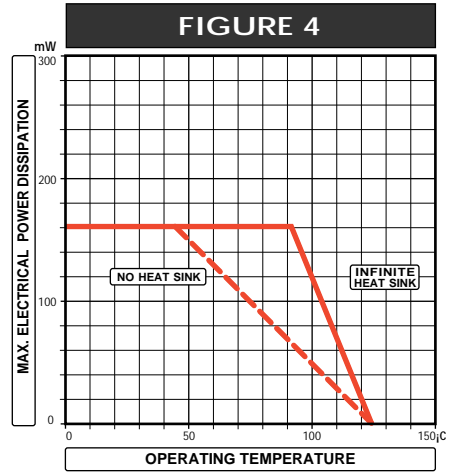
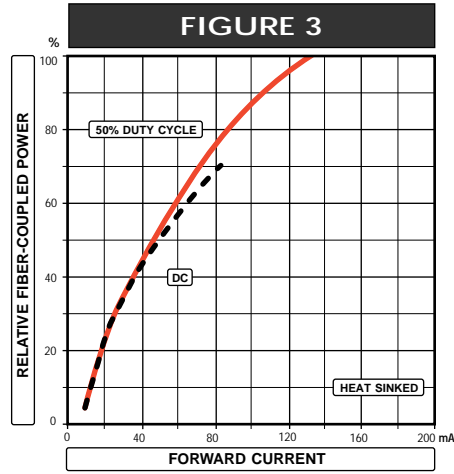
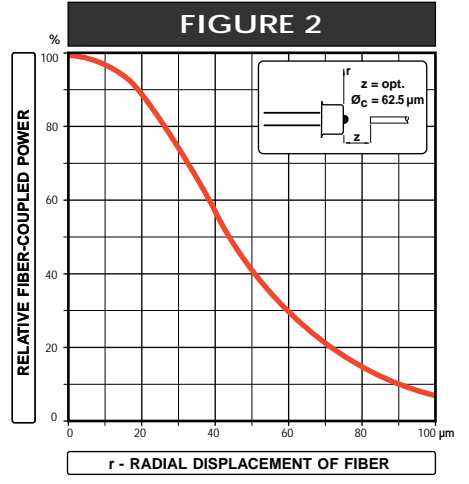
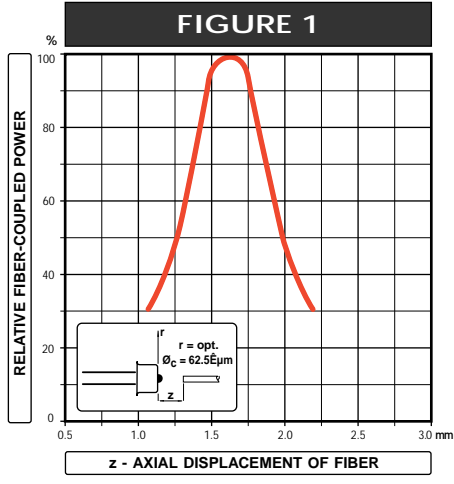
| PARAMETER | SYMBOL | LIMIT |
|---|------------------|---------------|
| Storage Temperature | T_{stg} | -55 to +125°C |
| Operating Temperature (derating: Fig.4) | T_{op} | -55 to +125°C |
| Electrical Power Dissipation (derating: Fig.4) | P_{tot} | 160 mW |
| Continuous Forward Current ($f \leq 10\text{kHz}$) | I_F | 80 mA |
| Peak Forward Current (duty cycle $\leq 50\%$, $f \geq 1\text{MHz}$) | I_{FRM} | 130 mA |
| Reverse Voltage | V_R | 0.5V |
| Soldering Temperature (2mm from the case for 10sec) | T_{sld} | 260°C |

Thermal Characteristics

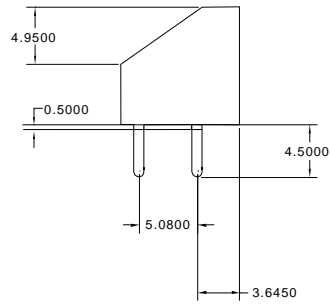
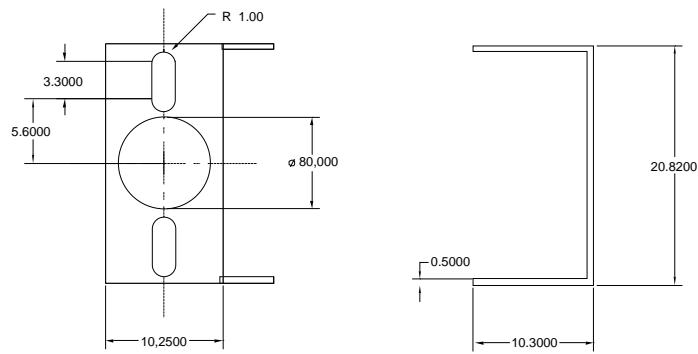
| PARAMETER | SYMBOL | MIN. | TYP. | MAX. | UNIT |
|---|-------------------|------|-------|------|-------|
| Thermal Resistance - Infinite Heat Sink | R_{thjc} | | | 150 | °C/W |
| Thermal Resistance - No Heat Sink | R_{thja} | | | 400 | °C/W |
| Temperature Coefficient - Optical Power | dP/dT_j | | -0.75 | | %/°C |
| Temperature Coefficient - Wavelength | $d\lambda/dT_j$ | | 0.45 | | nm/°C |



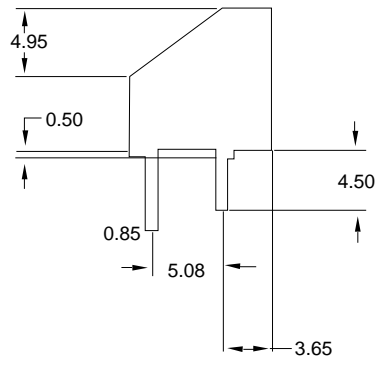
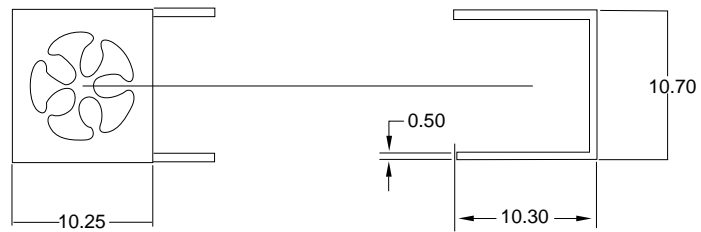
1A439 1320nm
High-Performance LED



Clip for SC-2A



Clip for Pigtail-3A

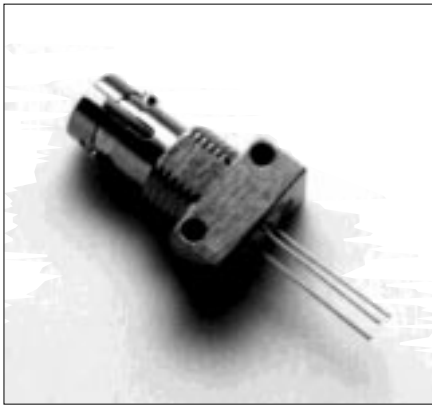


PRODUCT INFORMATION

ST-2A Package

Emitter or Detector in ST® Package

Mitel emitters and detectors can be provided in this low-profile ST® package. The device is electrically isolated from the ST® receptacle to facilitate electrical connection. And optimum fiber-coupled power or responsivity is ensured by active alignment against the fiber.



Absolute Maximum Ratings

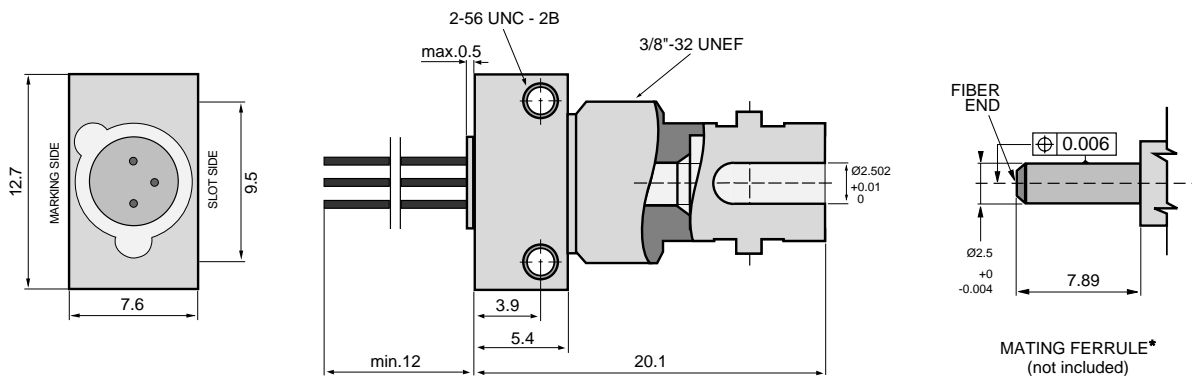
| PARAMETER | SYMBOL | LIMIT |
|---|-------------------|--------------|
| Operating & Storage Temperature ST-2A (Note 1) | T_{stg}, T_{op} | -40 to +85°C |

Note 1: Temperature range can be extended to -55° to +125°C on request.

Thermal Characteristics

| PARAMETER | SYMBOL | MIN. | TYP. | MAX. | UNIT |
|---|------------|------|------|------|------|
| Thermal Resistance - Infinite Heat Sink (Note 2) | R_{thcc} | | | 40 | °C/W |
| Thermal Resistance - No Heat Sink (Note 2) | R_{thca} | | | 200 | °C/W |
| Thermal Resistance - On PC Board (Note 2) | R_{thca} | | 80 | | °C/W |

Note 2: Add R_{thjc} for emitter or detector to estimate the total thermal resistance.



All Dimensions in mm

*The fiber-coupled power/responsivity is guaranteed to meet the LED/PIN data sheet - provided a ferrule meeting this specification is used.

Mechanical Outline of Diode in ST-2A Housing

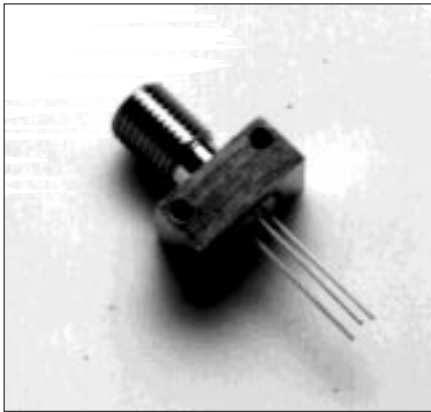
(ST is a registered trademark of AT&T)

PRODUCT INFORMATION

SMA-2A Package

Emitter or Detector in SMA Package

Mitel emitters and detectors can be provided in this low-profile SMA package. The device is electrically isolated from the SMA receptacle to facilitate electrical connection. And optimum fiber-coupled power or responsivity is ensured by active alignment against the fiber.



Absolute Maximum Ratings

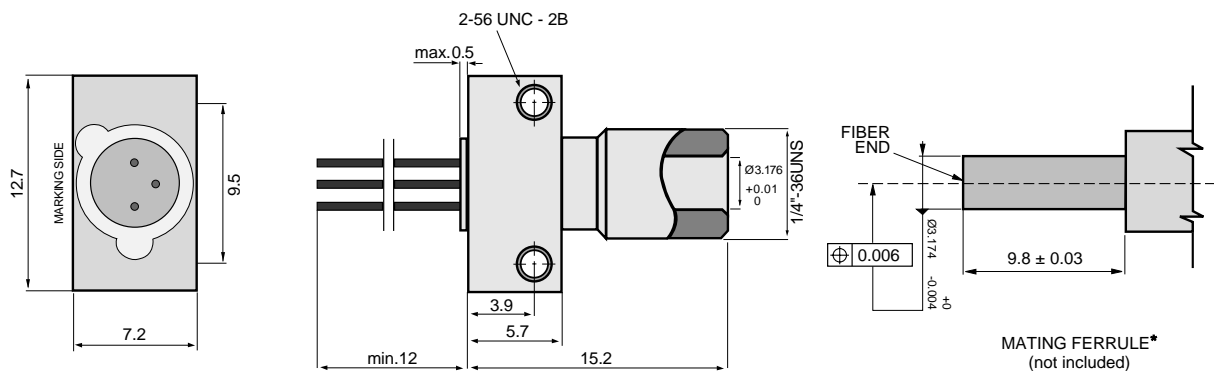
| PARAMETER | SYMBOL | LIMIT |
|--|-------------------|--------------|
| Operating & Storage Temperature SMA-2A (Note 1) | T_{stg}, T_{op} | -40 to +85°C |

Note 1: Temperature range can be extended to -55° to +125°C on request.

Thermal Characteristics

| PARAMETER | SYMBOL | MIN. | TYP. | MAX. | UNIT |
|---|------------|------|------|------|------|
| Thermal Resistance - Infinite Heat Sink (Note 2) | R_{thcc} | | | 40 | °C/W |
| Thermal Resistance - No Heat Sink (Note 2) | R_{thca} | | | 200 | °C/W |
| Thermal Resistance - On PC Board (Note 2) | R_{thca} | | 80 | | °C/W |

Note 2: Add R_{thjc} for emitter or detector to estimate the total thermal resistance.



All Dimensions in mm

*The fiber-coupled power/responsivity is guaranteed to meet the LED/PIN data sheet - provided a ferrule meeting this specification is used.

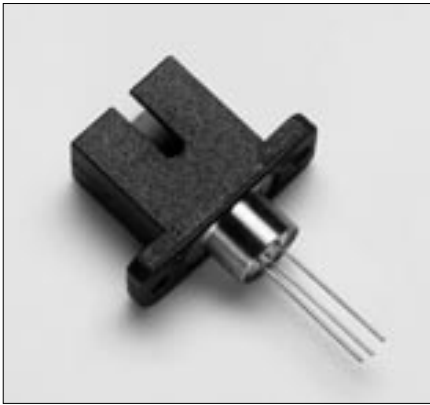
Mechanical Outline of Diode in SMA-2A Housing

PRODUCT INFORMATION

SC-2A Package

Emitter or Detector in SC Package

Mitel emitters and detectors can be provided in this low-profile SC package. The device is electrically isolated from the SC receptacle to facilitate electrical connection. And optimum fiber-coupled power or responsivity is ensured by active alignment against the fiber..



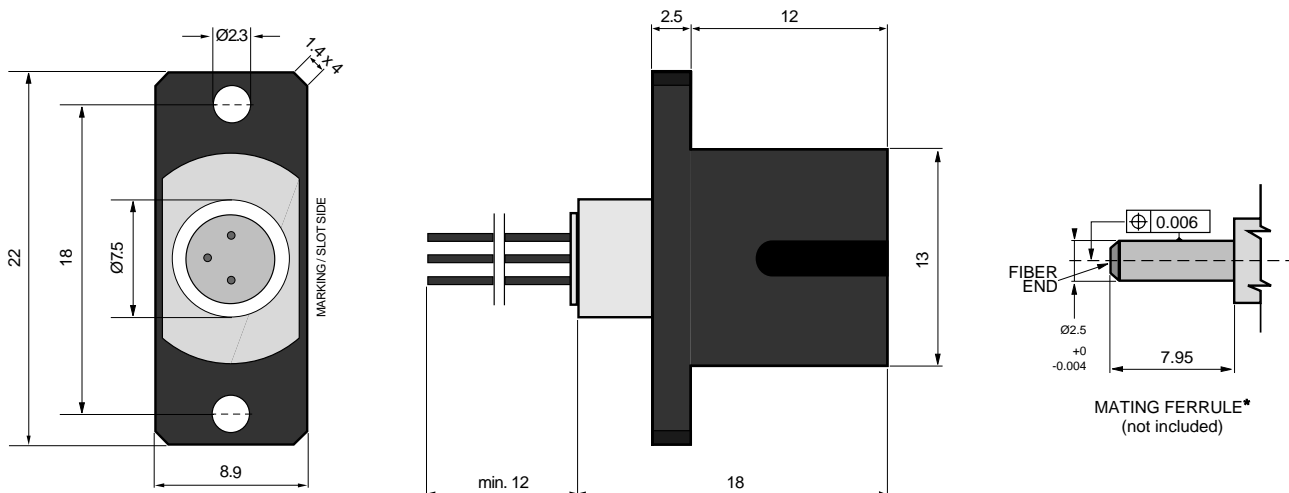
Absolute Maximum Ratings

| PARAMETER | SYMBOL | LIMIT |
|---------------------------------|-------------------|--------------|
| Operating & Storage Temperature | T_{stg}, T_{op} | -40 to +85°C |

Thermal Characteristics

| PARAMETER | SYMBOL | MIN. | TYP. | MAX. | UNIT |
|---|------------|------|------|------|------|
| Thermal Resistance - Infinite Heat Sink (Note 1) | R_{thcc} | | | 40 | °C/W |
| Thermal Resistance - No Heat Sink (Note 1) | R_{thca} | | | 200 | °C/W |
| Thermal Resistance - On PC Board (Note 1) | R_{thca} | | 125 | | °C/W |

Note 1: Add R_{thjc} for emitter or detector to estimate the total thermal resistance.



All Dimensions in mm

* The fiber-coupled power/responsivity is guaranteed to meet the LED/PIN data sheet - provided a ferrule meeting this specification is used.

Mechanical Outline of Diode in SC-2A Housing

PRODUCT INFORMATION

Pigtail-3A Package

Emitter or Detector in Pigtail Package

Mitel emitters and detectors can be provided in this pigtail package with a wide selection of fiber types. The device is electrically isolated from the pigtail receptacle to facilitate electrical connection. And optimum fiber-coupled power or responsivity is ensured by active alignment against the fiber. A special design maximizes the return loss for detectors in this package.



Absolute Maximum Ratings

| PARAMETER | SYMBOL | LIMIT |
|--|-------------------|--------------|
| Operating & Storage Temperature (Note 1 & 2) | T_{stg}, T_{op} | -40 to +85°C |

Note 1: Temperature range can be extended to -55/+125°C on request.

Note 2: Temperature range may be limited by the specification of the fiber.

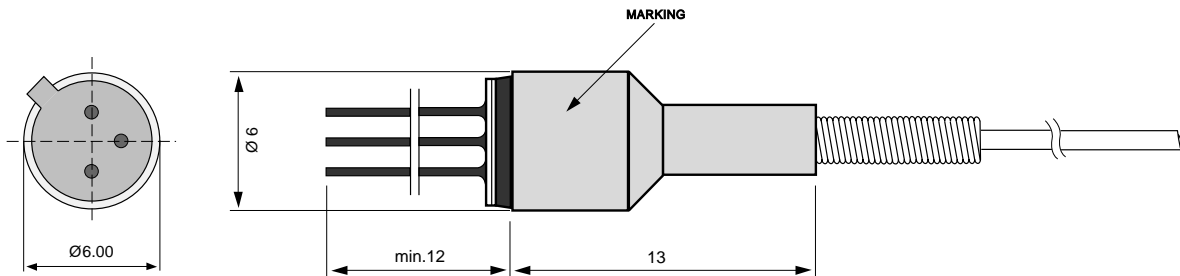
Thermal Characteristics

| PARAMETER | SYMBOL | MIN. | TYP. | MAX. | UNIT |
|--|------------|------|------|------|------|
| Thermal Resistance - Infinite Heat Sink (Note 3) | R_{thcc} | | | 25 | °C/W |
| Thermal Resistance - No Heat Sink (Note 3) | R_{thca} | | | 250 | °C/W |
| Thermal Resistance - On PC-Board (Note 3) | R_{thca} | | 120 | | °C/W |

Note 3: Add R_{thjc} for LED to estimate the total thermal resistance.

Optical Characteristics

| PARAMETER | SYMBOL | MIN. | TYP. | MAX. | UNIT |
|---------------------------------------|--------|------|------|------|------|
| Return Loss 10/125μm fiber (PIN only) | RL | 40 | 55 | | dB |



All Dimensions in mm

Mechanical Outline of Diode in PIGTAIL-3A Housing

PRODUCT INFORMATION

FC-2A Package

Emitter or Detector in FC Package

Mitel emitters and detectors can be provided in this low-profile FC package. The device is electrically isolated from the FC receptacle to facilitate electrical connection. And optimum fiber-coupled power or responsivity is ensured by active alignment against the fiber.



Absolute Maximum Ratings

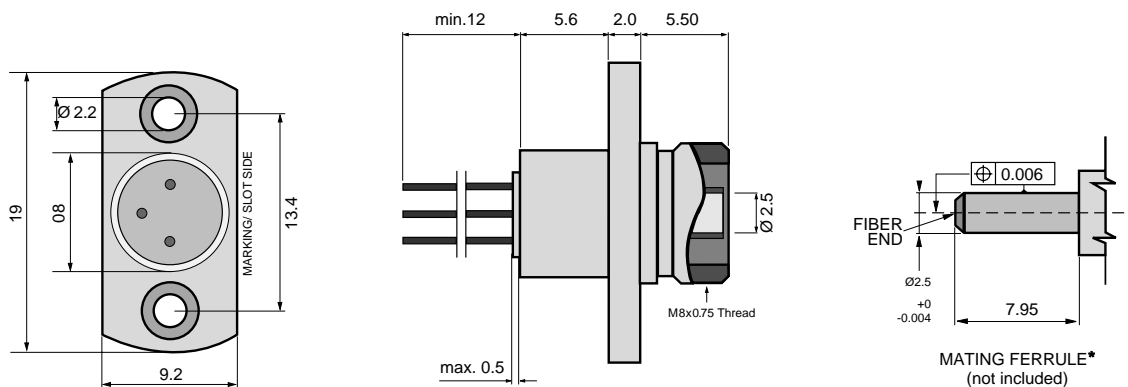
| PARAMETER | SYMBOL | LIMIT |
|---|-------------------|--------------|
| Operating & Storage Temperature FC-2A (Note 1) | T_{stg}, T_{op} | -40 to +85°C |

Note 1: Temperature range can be extended to -55° to +125°C on request.

Thermal Characteristics

| PARAMETER | SYMBOL | MIN. | TYP. | MAX. | UNIT |
|---|------------|------|------|------|------|
| Thermal Resistance - Infinite Heat Sink (Note 2) | R_{thcc} | | | 40 | °C/W |
| Thermal Resistance - No Heat Sink (Note 2) | R_{thca} | | | 200 | °C/W |
| Thermal Resistance - On PC Board (Note 2) | R_{thca} | | 80 | | °C/W |

Note 2: Add R_{thjc} for emitter or detector to estimate the total thermal resistance.



All Dimensions in mm

* The fiber-coupled power/responsivity is guaranteed to meet the LED/PIN data sheet - provided a ferrule meeting this specification is used.

Mechanical Outline of Diode in FC-2A Housing



<http://www.mitelsemi.com>

World Headquarters - Canada

Tel: +1 (613) 592 2122

Fax: +1 (613) 592 6909

North America

Tel: +1 (770) 486 0194

Fax: +1 (770) 631 8213

Asia/Pacific

Tel: +65 333 6193

Fax: +65 333 6192

**Europe, Middle East,
and Africa (EMEA)**

Tel: +44 (0) 1793 518528

Fax: +44 (0) 1793 518581

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