

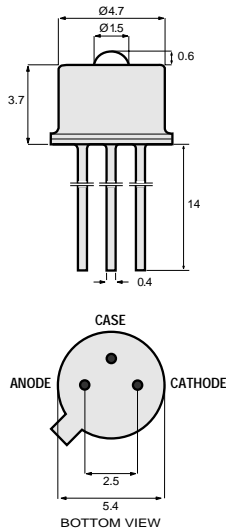
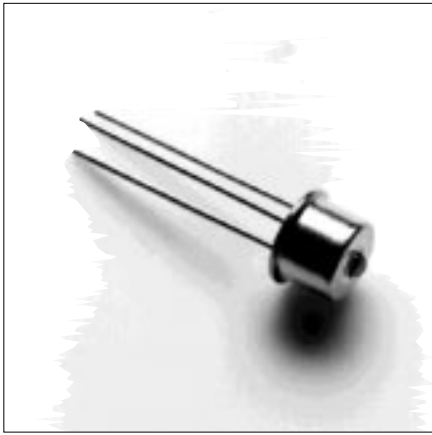
# PRODUCT INFORMATION

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.



All dimensions in mm

**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)	$P_{\text{fiber}}$	-18.5			dBm	$I_{\text{Peak}}=60\text{mA}$ (Note 1) Fiber: 62.5/125 $\mu\text{m}$
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	$\lambda_c$		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	$\mu\text{A}$	$V_R=1\text{V}$
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	$T_{\text{stg}}$	-55 to +125°C
Operating Temperature (derating: Fig. 4)	$T_{\text{op}}$	-55 to +125°C
Electrical Power Dissipation (derating: Fig. 4)	$P_{\text{tot}}$	160 mW
Continuous Forward Current ( $f \leq 10\text{kHz}$ )	$I_F$	80 mA
Peak Forward Current (duty cycle $\leq 50\%$ , $f \geq 1\text{MHz}$ )	$I_{\text{FRM}}$	130 mA
Reverse Voltage	$V_R$	0.5 V
Soldering Temperature (2mm from the case for 10sec)	$T_{\text{sld}}$	260°C

## Thermal Characteristics

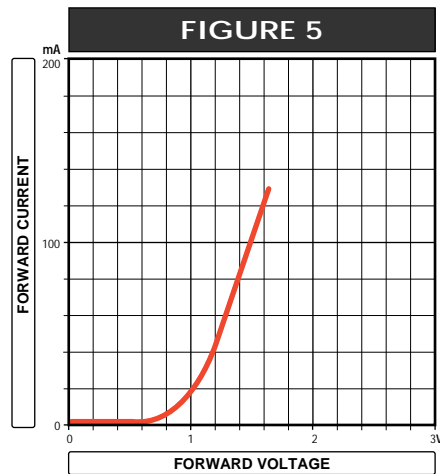
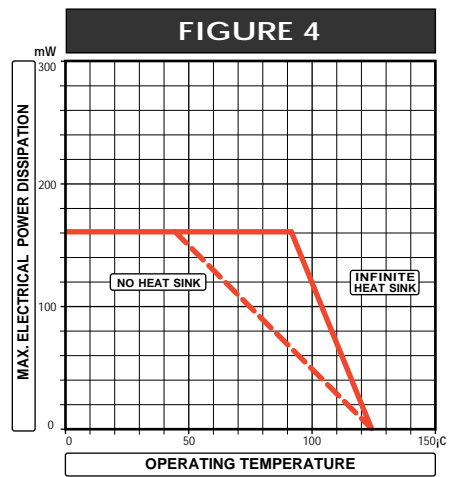
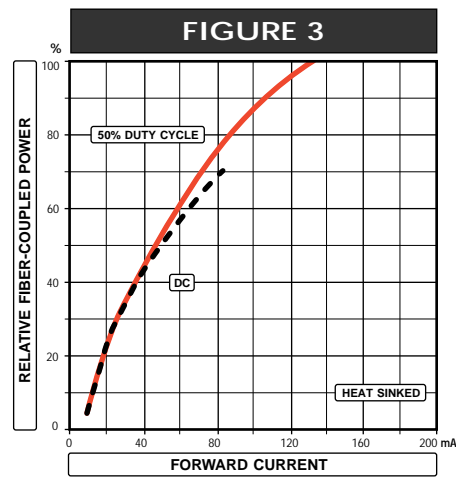
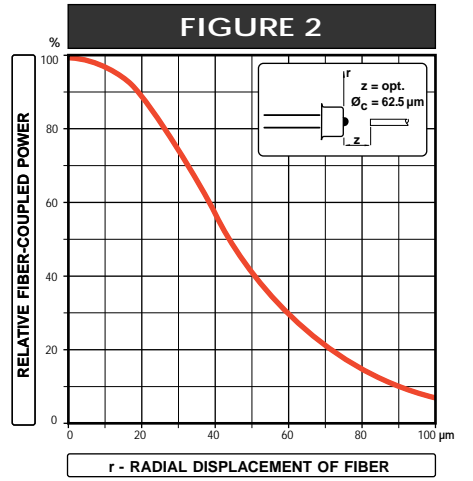
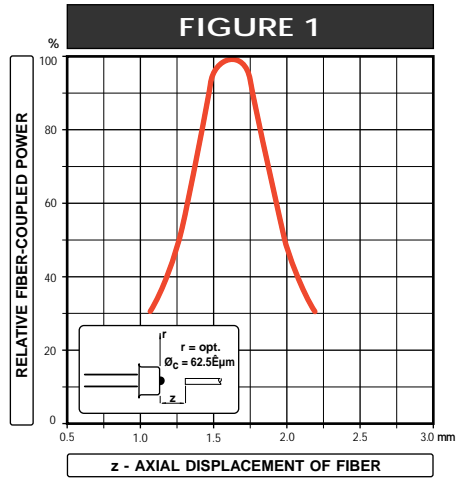
PARAMETER	SYMBOL	MIN.	TYP.	MAX.	UNIT
Thermal Resistance - Infinite Heat Sink	$R_{\text{thjc}}$			150	°C/W
Thermal Resistance - No Heat Sink	$R_{\text{thja}}$			400	°C/W
Temperature Coefficient - Optical Power	$dP/dT_j$		-0.75		%/°C
Temperature Coefficient - Wavelength	$d\lambda/dT_j$		0.45		nm/°C

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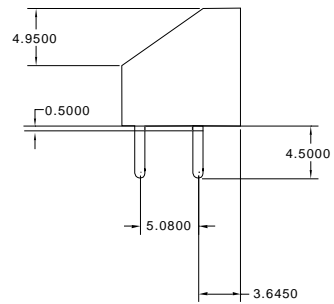


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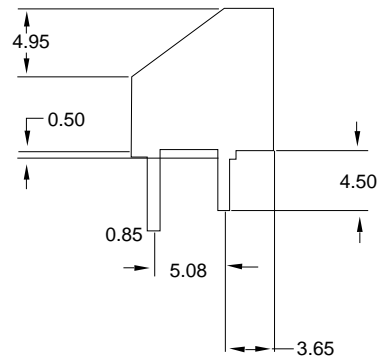
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# Clip for SC-2A



# 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

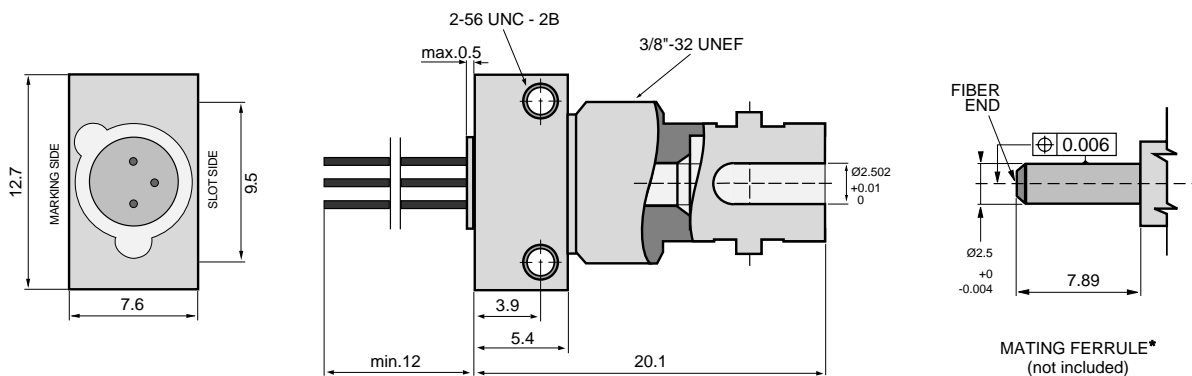
PARAMETER	SYMBOL	LIMIT
Operating & Storage Temperature ST-2A (Note 1)	$T_{stg}, T_{op}$	-40 to +85°C

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)

103326 1994-09-20



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# 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

103325 1994-09-20



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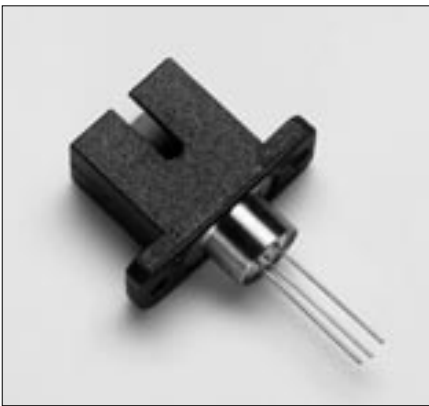
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# PRODUCT INFORMATION

## 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.



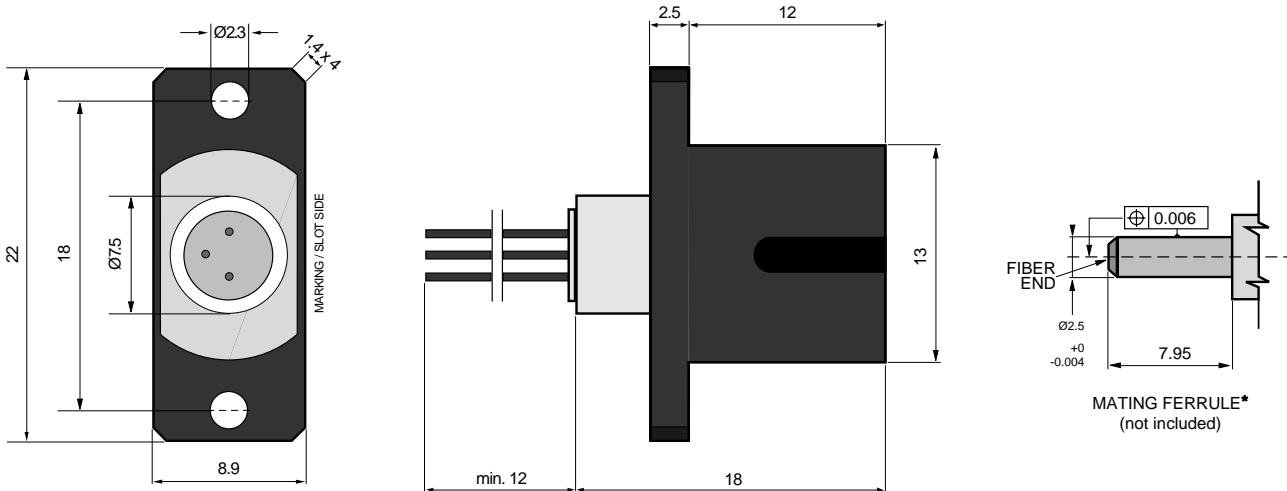
### Absolute Maximum Ratings

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

105967 1994-09-20



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Asia: Tel (65) 293 5312 Fax (65) 293 8527

# 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.

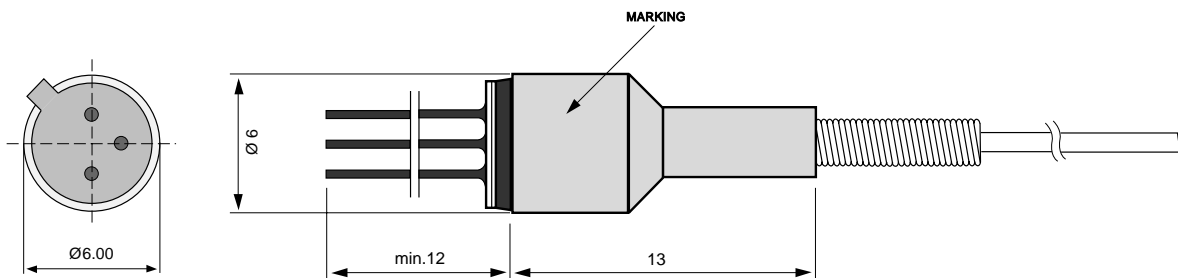
### Thermal Characteristics

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

105429 1997-07-03



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Tel (44) 1291 436180 Fax (44) 1291 436771

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Asia: Tel (65) 293 5312 Fax (65) 293 8527



# 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

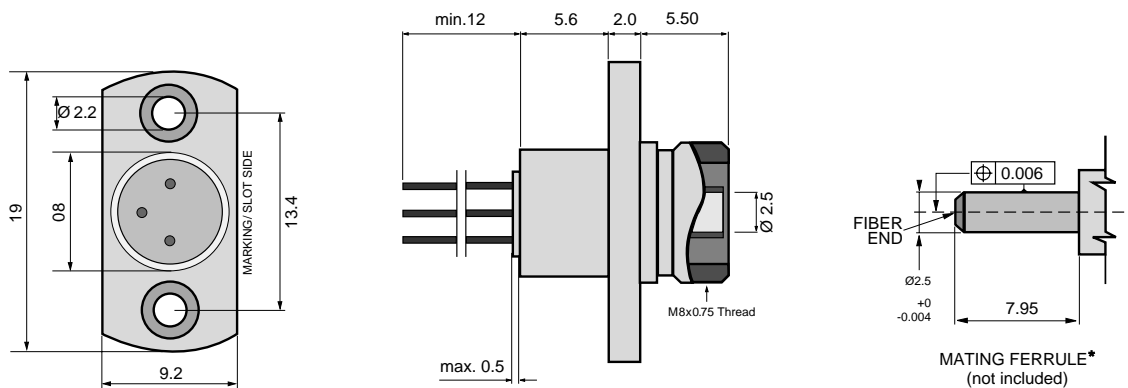
PARAMETER	SYMBOL	LIMIT
Operating & Storage Temperature FC-2A (Note 1)	$T_{stg}, T_{op}$	-40 to +85°C

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

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Tel (44) 1291 436180 Fax (44) 1291 436771

America: Tel 1-800-96MITEL Fax (613) 592-6909  
Asia: Tel (65) 293 5312 Fax (65) 293 8527



<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)**

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