

# PRODUCT INFORMATION

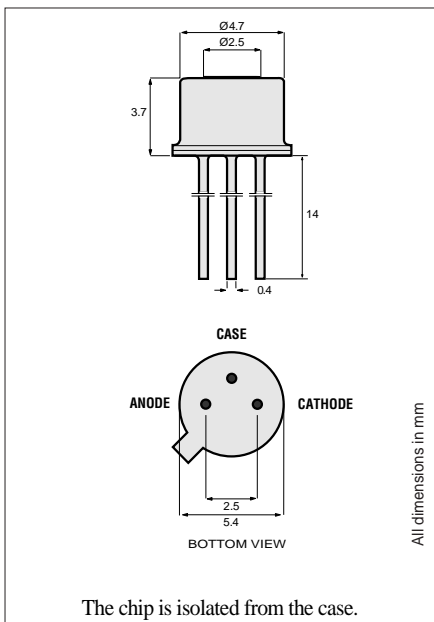
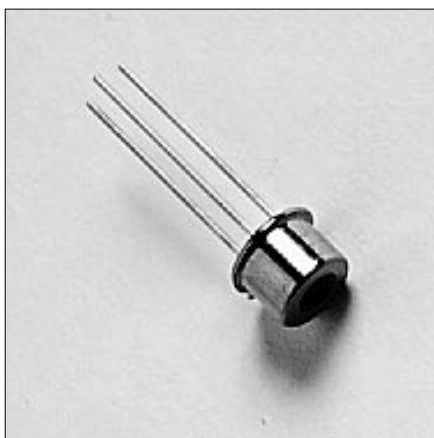
650nm

**1A466**  
Resonant Cavity LED

Datacom, General Purpose

**TENTATIVE**

This unique Resonant Cavity Surface-Emitting LED (RECLEL) is designed for optical communications over Plastic Optical Fiber (POF) in applications such as IEEE1394 and ATM. It is also well suited for applications where visible light is required, such as in sensing and positioning.



TO-46 Package With Flat Window

## Optical and Electrical Characteristics (25°C Case Temperature)

PARAMETER	SYMBOL	MIN.	TYP.	MAX.	UNIT	TEST CONDITION
Fiber-Coupled Power	$P_{\text{fiber}}$		500		$\mu\text{W}$	$I_F=30\text{mA}$ (Note 1)
Optical Power	$P_O$		700		$\mu\text{W}$	$I_F=30\text{mA}$
Beam Divergence	$\Theta$		50		deg	Full Width Half Maximum
Bandwidth (3dB <sub>e1</sub> )	$f_c$		200		MHz	$I_F=30\text{mA}$
Peak Wavelength	$\lambda_p$	640	650	660	nm	$I_F=30\text{mA}$
Spectral Width (FWHM)	$\Delta\lambda$		4		nm	$I_F=30\text{mA}$
Forward Voltage	$V_F$		2.3		V	$I_F=30\text{mA}$

**Note 1:** Fiber: POF 980/1000 $\mu\text{m}$  Step Index, NA=0.3. An external glass ball lens is required.

## Absolute Maximum Ratings

PARAMETER	SYMBOL	LIMIT
Storage Temperature	$T_{\text{stg}}$	-55 to +125°C
Operating Temperature	$T_{\text{op}}$	0 to +70°C
Electrical Power Dissipation	$P_{\text{tot}}$	130 mW
Continuous Forward Current ( $f \leq 10$ kHz)	$I_F$	50 mA
Peak Forward Current (duty cycle $\leq 50\%$ , $f \geq 1$ MHz)	$I_{\text{FRM}}$	85 mA
Reverse Voltage	$V_R$	1.5 V
Soldering Temperature (2mm from the case for 10 sec)	$T_{\text{sld}}$	260°C

## Thermal Characteristics

PARAMETER	SYMBOL	MIN.	TYP.	MAX.	UNIT
Thermal Resistance - Infinite Heat Sink	$R_{\text{thjc}}$		200		°C/W
Thermal Resistance - No Heat Sink	$R_{\text{thja}}$		500		°C/W
Temp. Coefficient - Wavelength	$d\lambda/dT_j$		TBD		nm/°C
Optical Power - Variation 0 to 70°C	$\Delta P$		TBD		dB

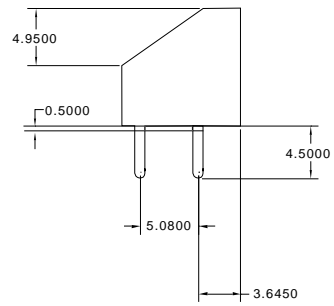
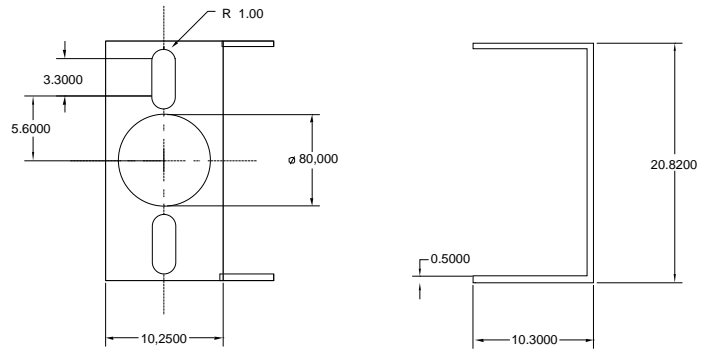
13624.11 1998-02-04



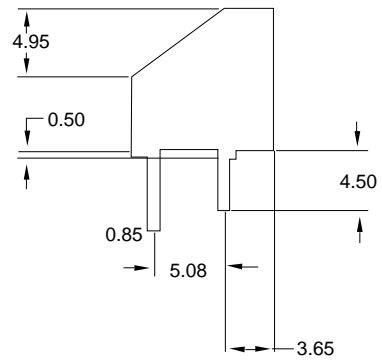
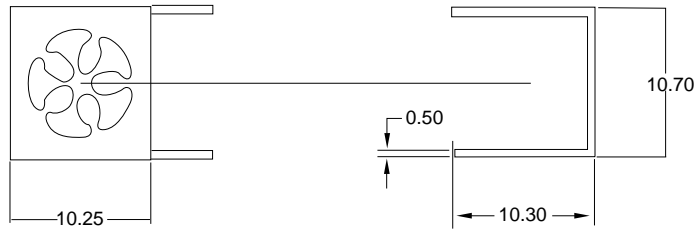
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# Clip for SC-2A



# Clip for Pigtail-3A

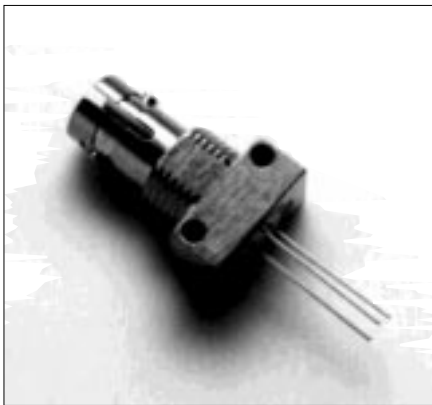


# PRODUCT INFORMATION

## 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

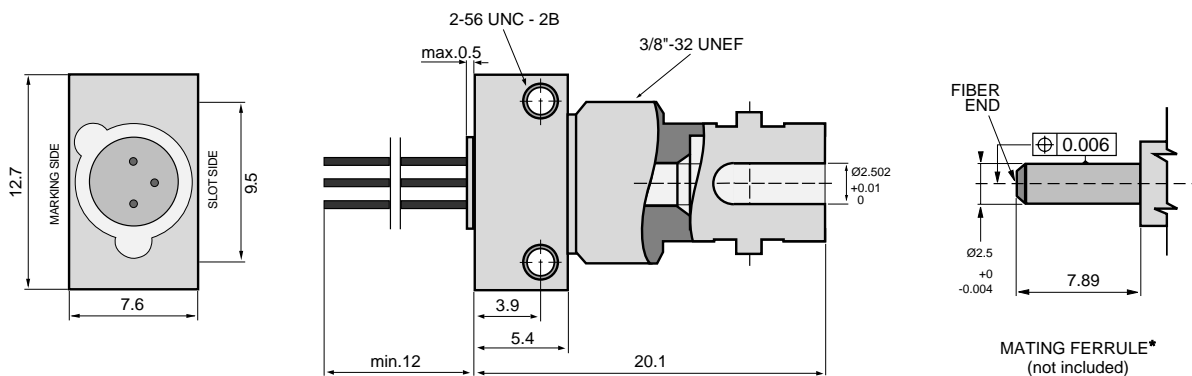
PARAMETER	SYMBOL	LIMIT
Operating & Storage Temperature ST-2A (Note 1)	$T_{stg}, T_{op}$	-40 to +85°C

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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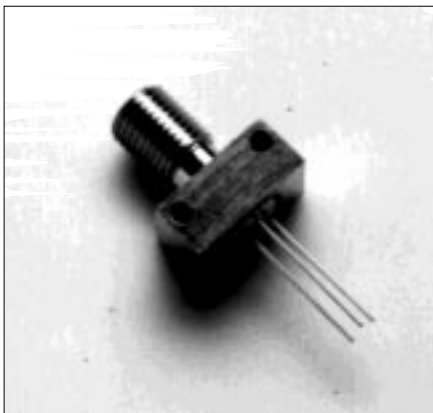
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# PRODUCT INFORMATION

## 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

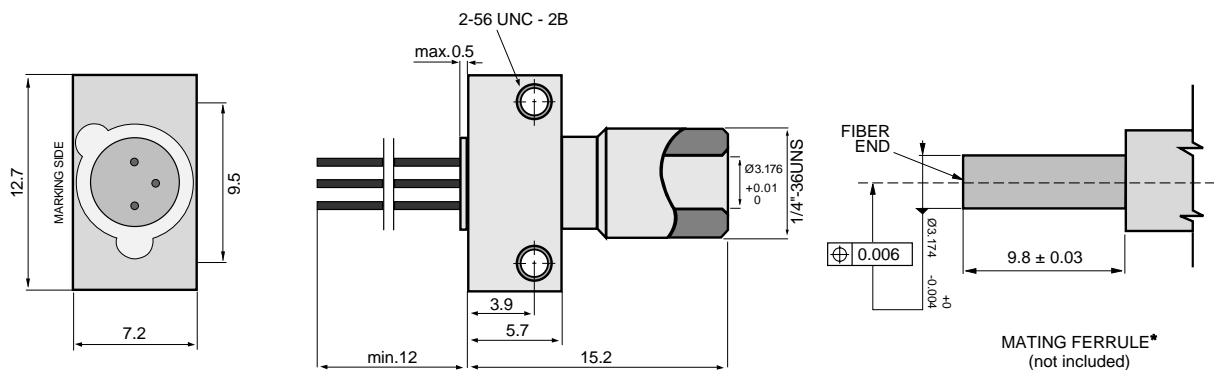
PARAMETER	SYMBOL	LIMIT
Operating & Storage Temperature SMA-2A (Note 1)	$T_{stg}, T_{op}$	-40 to +85°C

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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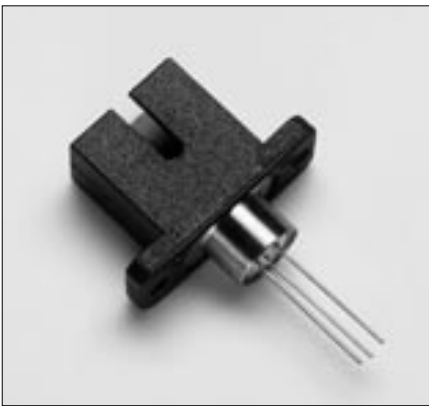
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# PRODUCT INFORMATION

## 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.



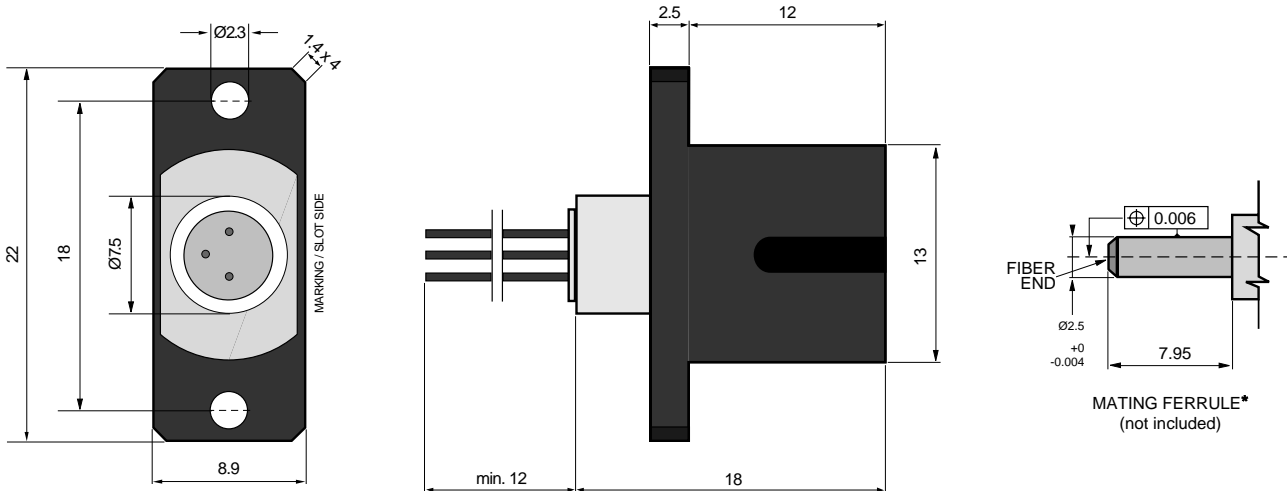
### Absolute Maximum Ratings

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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# 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.

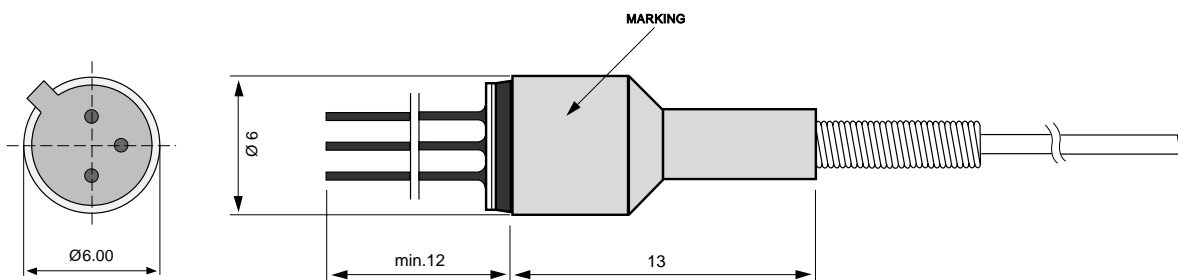
### Thermal Characteristics

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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# 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

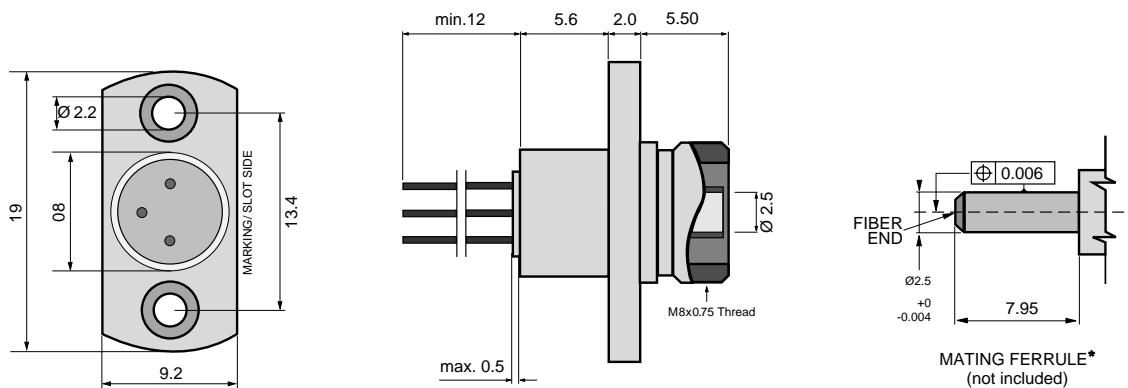
PARAMETER	SYMBOL	LIMIT
Operating & Storage Temperature FC-2A (Note 1)	$T_{stg}, T_{op}$	-40 to +85°C

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

105515 1994-09-20



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