

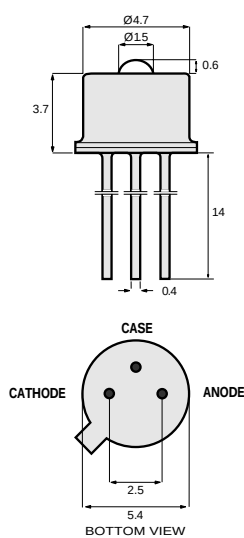
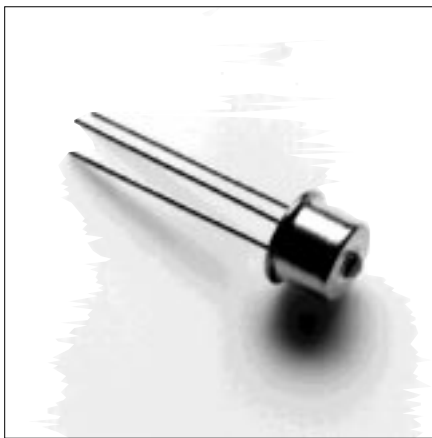
PRODUCT INFORMATION

840nm

1A288
High-Performance LED

Avionics, Military Datacom

This high speed device is optimized at 810 nm wavelength which is of particular interest for use in radiation-hardened fiber. It operates in a wide temperature range and delivers very high power to 200 μm core fiber, making it ideal in avionics and military datacom applications.



The anode is in electrical contact with the case.

TO-46 Package With Lens

All dimensions in mm

Optical and Electrical Characteristics (25° C Case Temperature)

PARAMETER	SYMBOL	MIN.	TYP.	MAX.	UNIT	TEST CONDITION
Fiber-Coupled Power (Fig.1,2,&3) (Table1)	P_{fiber}	700	850		μW	$I_F=100\text{ mA}$ (Note 1) Fiber: 100/140 μm
Rise and Fall Time (10-90%)	t_r, t_f		3.5	5	ns	$I_F=100\text{ mA}$ (no bias) Graded Index NA=0.29
Bandwidth (3dB _{el})	f_c		100		MHz	$I_F=100\text{ mA}$
Peak Wavelength	λ_p	800	840	880	nm	$I_F=100\text{ mA}$
Spectral Width (FWHM)	$\Delta\lambda$		50		nm	$I_F=100\text{ mA}$
Forward Voltage (Fig.5)	V_F		2.0	2.4	V	$I_F=100\text{ mA}$
Reverse Current	I_R			20	μA	$V_R=1\text{ V}$
Capacitance	C		250		pF	$V_R=0\text{ V}$, $f=1\text{ MHz}$

Note 1: Measured at the exit of 100 meters of fiber.

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}	250 mW
Continuous Forward Current ($f \leq 10\text{ kHz}$)	I_F	110 mA
Peak Forward Current (duty cycle $\leq 50\%$, $f \geq 1\text{ MHz}$)	I_{FRM}	180 mA
Reverse Voltage	V_R	1.5 V
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}			100	°C/W
Thermal Resistance - No Heat Sink	R_{thja}			400	°C/W
Temperature Coefficient - Optical Power	dP/dT_j		-0.4		%/°C
Temperature Coefficient - Wavelength	$d\lambda/dT_j$		0.3		nm/°C

12324.11 1994-09-20



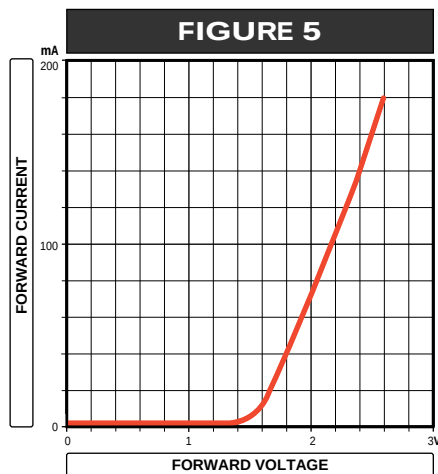
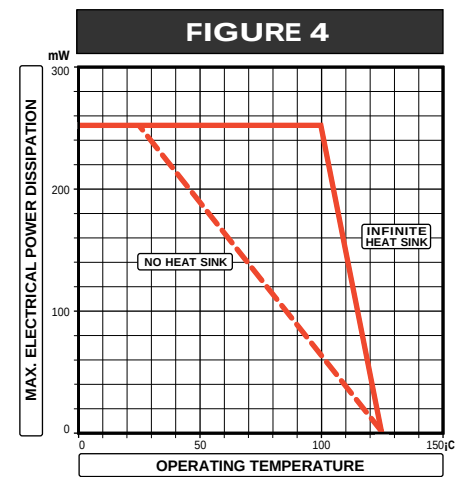
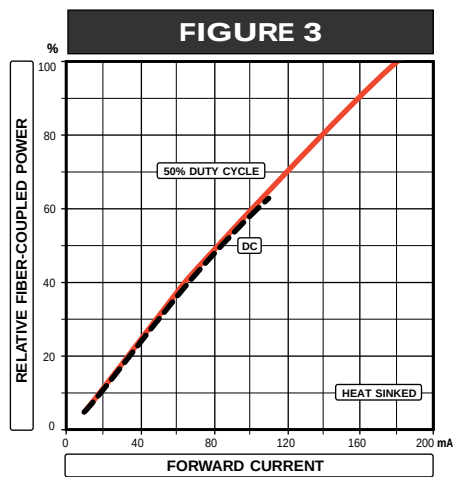
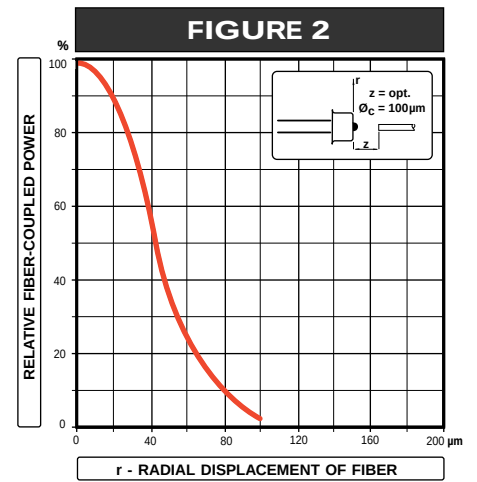
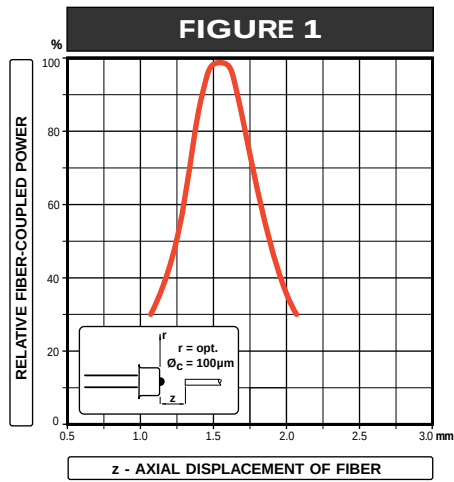
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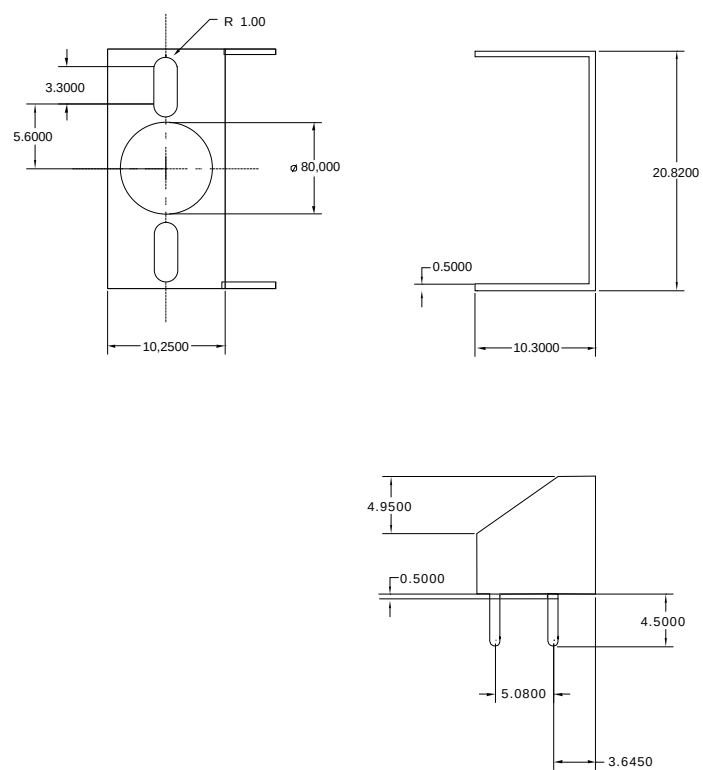
Typical Fiber-Coupled Power

Core Diameter/Cladding Diameter Numerical Aperture		
50/125 μm 0.20	62.5/125 μm 0.275	100/140 μm 0.29
150 μW	400 μW	850 μW

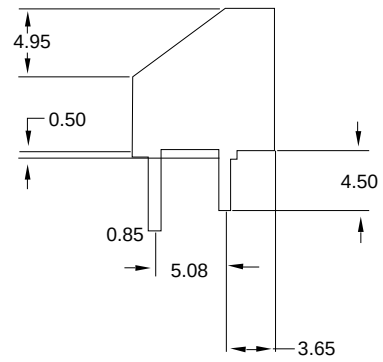
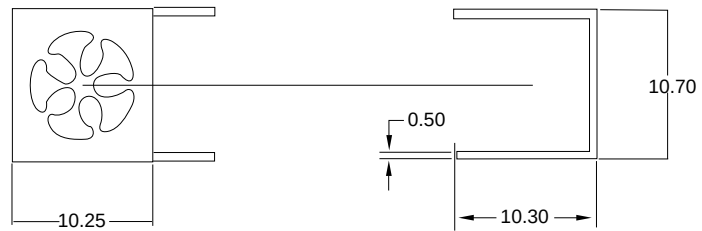
Table 1



Clip for SC-2A



Clip for Pigtail-3A

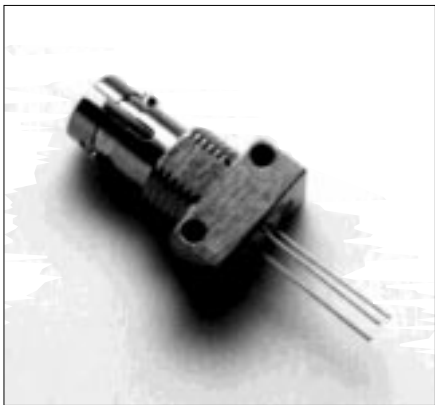


PRODUCT INFORMATION

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

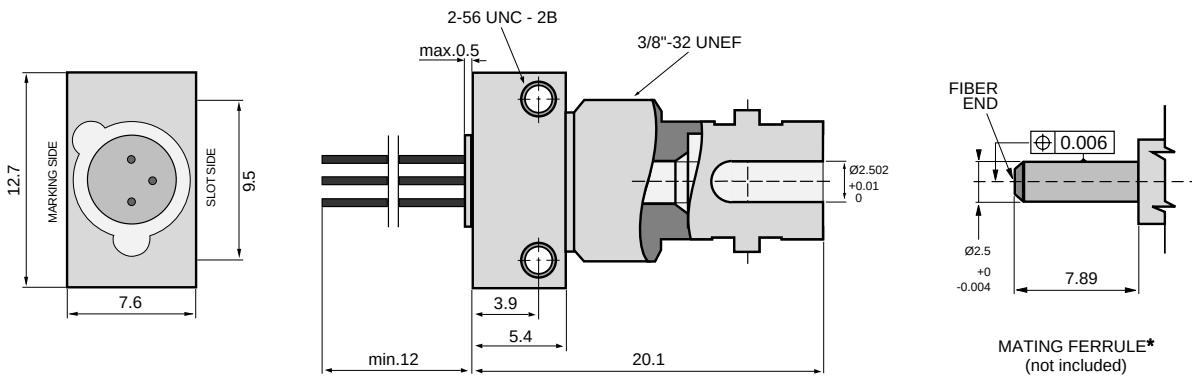
PARAMETER	SYMBOL	LIMIT
Operating & Storage Temperature ST-2A (Note 1)	T_{stg}, T_{op}	-40 to +85°C

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)

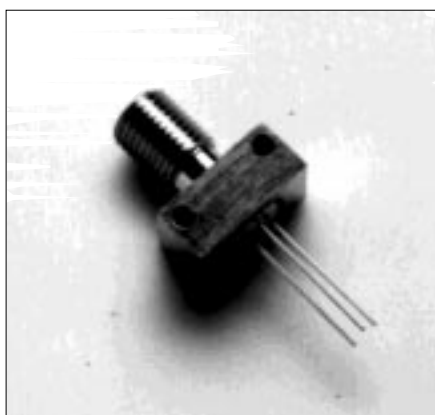
103326 1994-09-20

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

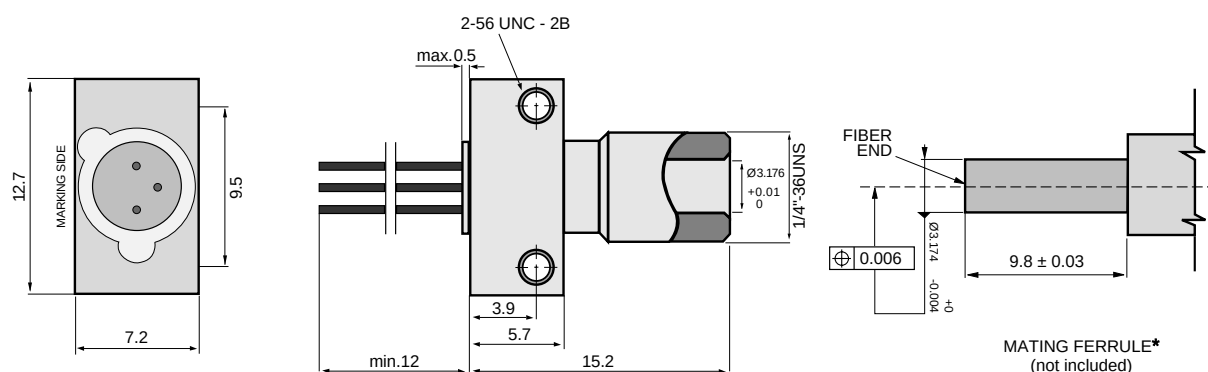
PARAMETER	SYMBOL	LIMIT
Operating & Storage Temperature SMA-2A (Note 1)	T_{stg}, T_{op}	-40 to +85°C

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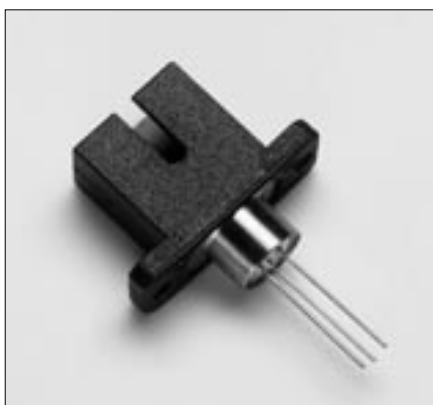
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Asia: Tel (65) 293 5312 Fax (65) 293 8527

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..



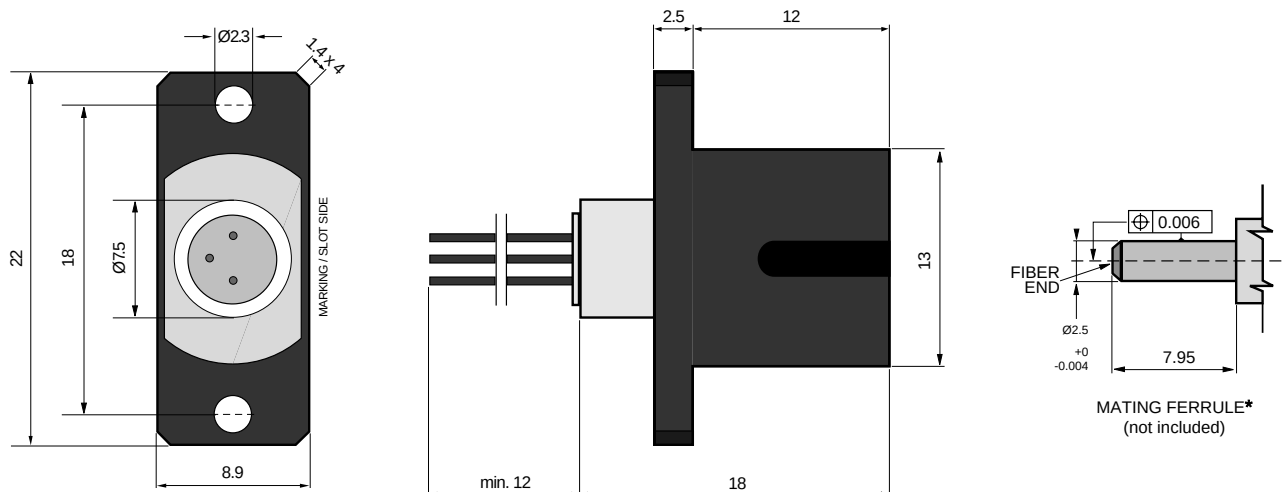
Absolute Maximum Ratings

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

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.

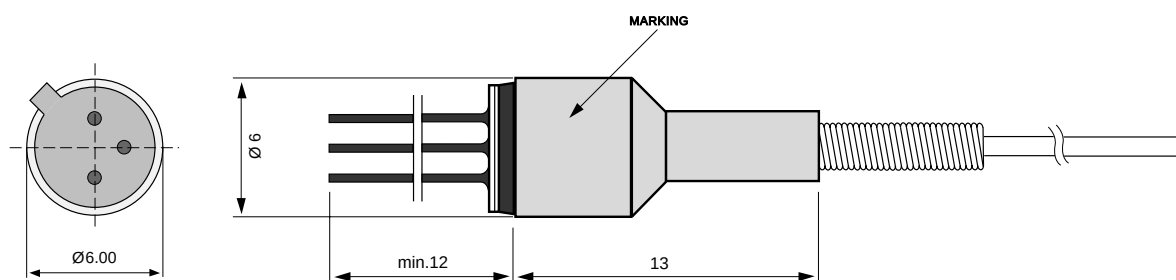
Thermal Characteristics

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

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

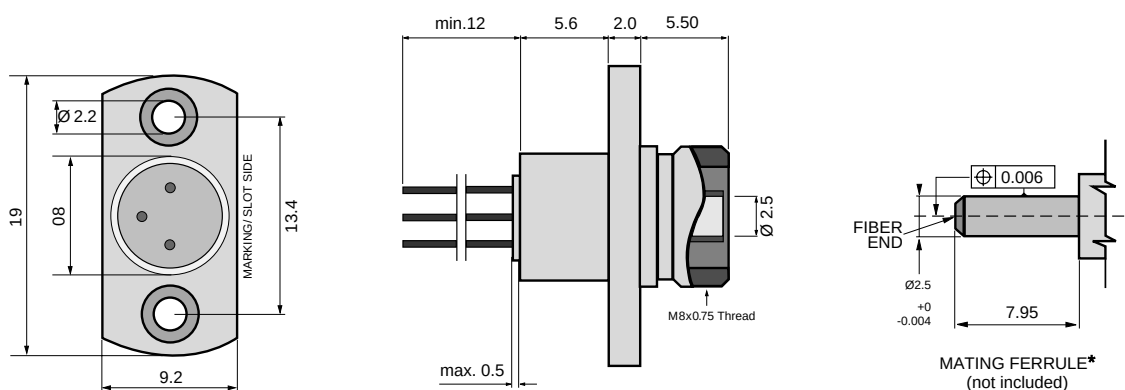
PARAMETER	SYMBOL	LIMIT
Operating & Storage Temperature FC-2A (Note 1)	T_{stg}, T_{op}	-40 to +85°C

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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