

## Product Bulletin



The Unifuse™ monolithic, single-fusion couplers are highly stable for multi-port, optical signal splitting. They have very good uniformity, low excess loss, and very low polarization sensitivity. Extremely compact, these products are produced using a unique fabrication method and designed for stand alone use or in a cascaded system.

### Single Mode Single Window Monolithic Fiber Coupler 1x3, 1x4 Narrow Band $\pm 10\text{nm}$

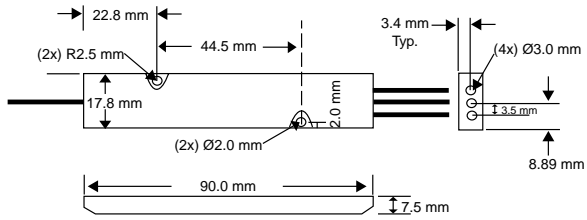
#### Key Features

- Highly compact package
- Highly reliable due to proprietary technology
- Low excess loss
- Excellent uniformity

#### Applications

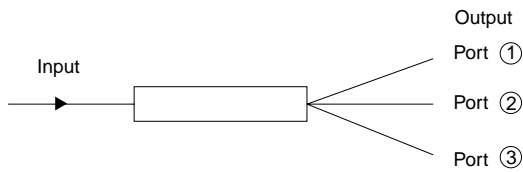
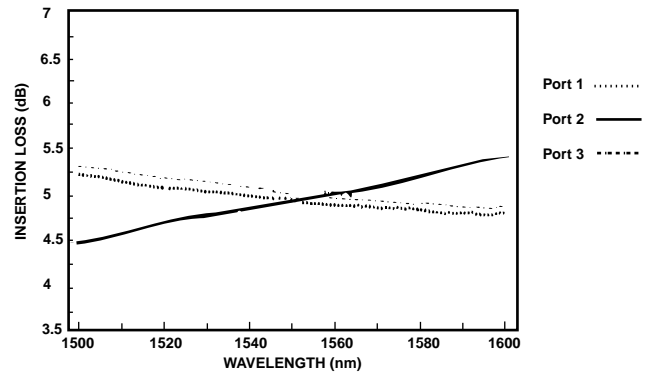
- Multi-channel telecommunication systems
- CATV and access

Package Dimensions: 1x3 Model, H-Package



Note: 3 mm cable shown

1x3 Model Wavelength Dependence



Coupling Ratio/Insertion Loss Conversion Chart for 1x3 Model

| Ordering Code | Coupling Ratio | Port ①<br>Insertion Loss<br>Maximum | Port ②<br>Insertion Loss<br>Maximum | Port ③<br>Insertion Loss<br>Maximum | PDL for<br>all ports<br>Maximum |
|---------------|----------------|-------------------------------------|-------------------------------------|-------------------------------------|---------------------------------|
| 10            | 45/10/45       | 4.0 dB                              | 11.0 dB                             | 4.0 dB                              | 0.1 dB                          |
| 20            | 40/20/40       | 4.5 dB                              | 7.6 dB                              | 4.5 dB                              | 0.1 dB                          |
| 30            | 35/30/35       | 5.0 dB                              | 5.8 dB                              | 5.0 dB                              | 0.1 dB                          |
| 33            | 33/33/33       | 5.3 dB                              | 5.3 dB                              | 5.3 dB                              | 0.1 dB                          |
| 40            | 30/40/30       | 5.7 dB                              | 4.5 dB                              | 5.7 dB                              | 0.1 dB                          |
| 50            | 25/50/25       | 6.6 dB                              | 3.6 dB                              | 6.6 dB                              | 0.1 dB                          |
| 60            | 20/60/20       | 7.4 dB                              | 2.7 dB                              | 7.4 dB                              | 0.1 dB                          |
| 70            | 15/70/15       | 9.2 dB                              | 2.0 dB                              | 9.2 dB                              | 0.1 dB                          |
| 80            | 10/80/10       | 11.0 dB                             | 1.4 dB                              | 11.0 dB                             | 0.1 dB                          |
| 90            | 5/95/5         | 14.8 dB                             | 0.6 dB                              | 14.8 dB                             | 0.15 dB                         |
| 96            | 2/96/2         | 19.5 dB                             | 0.4 dB                              | 19.5 dB                             | 0.15 dB                         |
| 98            | 1/98/1         | 22.0 dB                             | 0.4 dB                              | 22.0 dB                             | 0.15 dB                         |

## Specifications

| Parameter                               |         | 1x3 <sup>2</sup>               | 1x4                            |
|---|---------|--------------------------------|--------------------------------|
| Operating wavelength                    |         | 980, 1310, 1480, 1550, 1590 nm | 980, 1310, 1480, 1550, 1590 nm |
| Insertion loss (without connectors)     | Maximum | 5.3 dB                         | 6.8 dB                         |
| Excess loss (without connectors)        | Typical | 0.15 dB                        | 0.3 dB                         |
| Uniformity                              | Maximum | 0.8 dB                         | 1.0 dB                         |
| Polarization dependent loss             | Maximum | 0.1 dB                         | 0.1 dB                         |
| Optical return loss                     | Minimum | 50 dB                          | 50 dB                          |
| Directivity                             | Minimum | 50 dB                          | 50 dB                          |
| Temperature coefficient                 | Typical | 0.003 dB/°C                    | 0.003 dB/°C                    |
| Package dimensions -- S package (D x L) |         | 3.0 x 54 mm                    | 4.0 x 60 mm                    |
| -- L package (D x L)                    |         | 3.6 x 70 mm                    | 4.0 x 70 mm                    |
| -- H package (L x W x H)                |         | 90 x 17.8 x 7.5 mm             | 100 x 26 x 8.0 mm              |
| Operating Temperature <sup>1</sup>      |         | -40 to 85 °C                   | -40 to 85 °C                   |
| Storage Temperature <sup>1</sup>        |         | -50 to 85 °C                   | -50 to 85 °C                   |

1. -20 to +70 °C for 3.0 mm cable.

2. Asymmetrical coupling ratio is also available for 1x3 coupler, see Table of Conversion Chart for 1x3 model.

### Ordering Information

Indicate your requirements by selecting one option from each configuration table. Please print the corresponding codes in the available boxes to form your part number. For more information on this or other products and their availability, please contact your JDS Uniphase account manager, or call 1-877-550-JDSU toll free in the U.S. and Canada, or visit [www.jdsuniphase.com](http://www.jdsuniphase.com).

Sample: SMMC23100S211

**SMMC**     **0**

| Code | Wavelength |
|------|------------|
| 2    | 1550 nm    |
| 4    | 1480 nm    |
| 5    | 1310 nm    |
| 7    | 980 nm     |
| L    | 1590 nm    |

| Code | Ports |
|------|-------|
| 3    | 1x3   |
| 5    | 1x4   |

| Code | Coupling Ratio<br>(see ordering code on previous page) |
|------|--|
| 00   | even   |
| 10   | 45/10/45   |
| 20   | 40/20/40   |
| :    | :  |
| 96   | 2/96/2   |
| 98   | 1/98/1   |

| Code | Package                |
|------|------------------------|
| S    | 250 $\mu$ m fiber      |
| L    | 900 $\mu$ m loose tube |
| H    | 3.0 mm cable           |

| Code | Fiber Type               |
|------|--------------------------|
| 2    | Corning SMF-28           |
| A    | Corning PureMode HI-1060 |
| F    | Corning PureMode HI-980  |

| Code | Fiber Length         |
|------|----------------------|
| 1    | 1 meter <sup>1</sup> |
| 2    | 2 meters             |
| 3    | 3 meters             |
| 4    | 0.5 meter            |
| 5    | 1.5 meters           |

| Code | Connector <sup>2</sup>    |
|------|---------------------------|
| 0    | No connector <sup>1</sup> |
| 1    | FC/PC                     |
| 2    | FC/SPC                    |
| 3    | FC/APC                    |
| 4    | SC/SPC                    |
| 5    | SC/APC                    |
| 7    | D4                        |
| 8    | ST                        |
| 9    | FC/UPC                    |
| A    | SC/UPC                    |
| B    | LC/PC                     |
| D    | MU                        |

1. Standard.
2. Insertion loss and return loss depend on connector type.

SMF-28 is a registered trademark of Corning Incorporated.  
 PureMode is a registered trademark of Corning Incorporated.  
 ST is a registered trademark of Lucent Technologies.

