# 2x2 High Speed Lithium Niobate Interferometric Switch 

Key Features • High polarization extinction

- Low drive voltage
- Low fiber-to-fiber insertion loss
- 1550 nm operation

The JDSU 2x2 Interferometric Switch is a high extinction, high speed switch. Because the waveguides are polarizing, control of the input light polarization is required. Switching speeds in excess of 1 ns are attainable. Input and output fibers are polarization maintaining.



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## Device Schematic



## Functional Schematic



## 2x2 Interferometric Switch Dimensions Diagram

(Specifications in inches [mm] unless otherwise noted.)


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| Specifications |  |
| :--- | :--- |
|  |  |
| Parameter | Specification |
|  |  |
| General | Lithium niobate |
| Material | X-cut, y-propagating |
| Crystal orientation |  |
| Optical ${ }^{1}$ | 200 mW |
| Maximum input optical power | 1545 to 1555 nm |
| Operating wavelength | $\leq 5.0 \mathrm{~dB}$ |
| Insertion loss | $\geq 18 \mathrm{~dB}$ |
| On/off extinction ratio, low frequency | $\leq-45 \mathrm{~dB}$ |
| Optical return loss | $\leq 0.2 \mathrm{~ns}$ |
| Rise and fall time |  |
| Electrical ${ }^{1}$ | $\leq 7.0 \mathrm{~V}$ |
| RF port | $50 \Omega$ typical |
| $\quad$ V $\pi$ at DC | $\leq 27 \mathrm{dBm}$ |
| $\quad$ Impedance | 6.3 pF typical |
| $\quad$ RF power | $\leq 3.5 \mathrm{~V}$ |
| $\quad$ RF electrode capacitance, Ce | $>10 \mathrm{k} \Omega$ |
| Bias port |  |
| $\quad$ V $\pi$ at DC | SMA connectors |
| $\quad$ Impedance | Fujikura SM-15-P-8/125-UV/UV-400 |
| Mechanical | 0 to $70{ }^{\circ} \mathrm{C}$ |
| Electrical connectors (package) | -40 to $85{ }^{\circ} \mathrm{C}$ |
| PM input and output fiber |  |
| Environmental | Operating temperature <br> Storage temperature |

1. All measurements made at $23^{\circ} \mathrm{C}$ unless otherwise noted.

## Ordering Information

For more information on this or other products and their availability, please contact your local JDSU account manager or JDSU directly at $1-800-498$-JDSU (5378) in North America and $+800-5378$-JDSU worldwide or via e-mail at customer.service@jdsu.com.

Sample: 10022467

| Product Code | Description |
| :--- | :--- |
| 10022467 | $2 \times 2$ Interferometric Switch, no optical connectors |
| 10020457 | $2 \times 2$ Interferometric Switch, FC/PC optical connectors |

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