

## SO-SFP-10GE

### 10G Ethernet SFP+ Family

#### INTRODUCTION

The SO-SFP-10GE transceiver family are small form factor pluggable modules for bi-directional serial optical data communications such as 10GBASE Ethernet. The modules are compliant to the SFP+ MSA and are hot pluggable. Digital diagnostic functions are available via an I<sup>2</sup>C serial bus specified in the SFP MSA SFF-8472.

The modules meet the requirements of the IEEE 802.3 10GBASE-SR/LR/LRM/LW Ethernet standard and are suitable for interconnections in 10G Ethernet environments. The family covers a wide range of applications, with 850nm and 1310nm versions available for multimode fiber and 1310nm and CWDM versions are available for singlemode fiber.

#### APPLICATIONS

- 10GBASE-SR/LR/LRM/LW
- CWDM Networking

#### FEATURES

- Up to 300 m transmission at 850 nm on OM3, 2000 MHz\*km
- Up to 70 km transmission at 1310 nm
- Up to 70 km transmission at CWDM
- Hot-Pluggable SFP+ footprint LC Optical Transceiver
- Small Form-Factor Pluggable (SFP) MSA compatible
- 18 CWDM wavelengths (λ): 1271 nm to 1611 nm
- SFF-8472 Digital Diagnostic Function

#### LASER SAFETY

This singlemode transceiver is a Class 1 laser product. It complies with IEC-60825 and FDA 21 CFR 1040.10 and 1040.11. The transceiver must be operated within the specified temperature and voltage limits. The optical ports of the module need to be terminated with an optical connector or a dust plug.



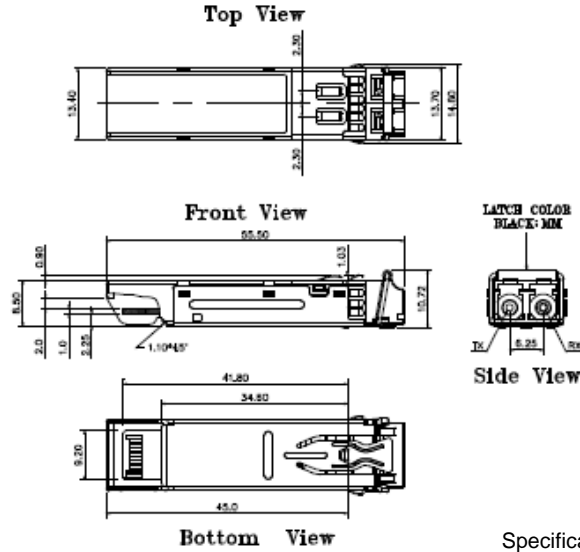
#### Ordering Information:

| Part no:                | Description/Application   |
|-------------------------|---|
| <b>SO-SFP-10GE-SR</b>   | SFP+, 10G Ethernet, MM, DDM, 850nm, 4.3dB<br>300m for OM3 2000 MHz*km, 82m for OM2 500MHz*km, and 33 m for OM1 200MHz*km MMF                                |
| <b>SO-SFP-10GE-LRM</b>  | SFP+, 10G Ethernet, MM, DDM, 1310nm, 3.4dB<br>220m for OM3 2000 MHz*km, 220m for OM2 500MHz*km, and 220 m for OM1 200MHz*km MMF, requires EDC at host board |
| <b>SO-SFP-10GE-LR</b>   | SFP+, 10G Ethernet, SM, DDM, 1310nm, 7dB, 10km  |
| <b>SO-SFP-10GE-LR20</b> | SFP+, 10G Ethernet, SM, DDM, 1310nm, 11dB, 20km   |
| <b>SO-SFP-10GE-LR40</b> | SFP+, 10G Ethernet, SM, DDM, 1310nm, 16dB, 40km   |
| <b>SO-SFP-10GE-LR70</b> | SFP+, 10G Ethernet, SM, DDM, 1310nm, 25dB, 70km   |

#### Ordering Information: CWDM SFPs

| Part no:                    | Description/Application   |
|-----------------------------|---|
| <b>SO-SFP-10GE-LR-Cxx</b>   | 10G Ethernet, SM, DDM, CWDM 1270-1610nm, 16dB, 10km                     |
| <b>SO-SFP-10GE-LR40-Cxx</b> | 10G Ethernet, SM, DDM, CWDM 1470-1610nm, 16dB, 40km, requires T-3009-40 |
| <b>SO-SFP-10GE-LR70-Cxx</b> | 10G Ethernet, SM, DDM, CWDM 1470-1610nm, 26dB, 70km, requires T-3009-70 |

**Mechanical Specification:**



Specification subject to change without notice.

**Optical Parameters:**

| Part no.\Parameter | Wavelength [nm] | Opt. Output Power [dBm] | Opt. Receiver Sensitivity [dBm] | Power Budget [dB] |
|--------------------|-----------------|-------------------------|---------------------------------|-------------------|
| SO-SFP-10GE-SR     | 850 nm          | -8.2 to -1.5            | -12.5 to -0.5                   | 4.3               |
| SO-SFP-10GE-LRM    | 1310 nm         | -6.5 to 0.5             | -9.9 to 1.5                     | 3.4               |
| SO-SFP-10GE-LR     | 1310 nm         | -8 to 0                 | -15 to 0.5                      | 7                 |
| SO-SFP-10GE-LR20   | 1310 nm         | -4 to 0                 | -15 to 0.5                      | 11                |
| SO-SFP-10GE-LR40   | 1310 nm         | +1 to +4                | -15 to 0.5                      | 16                |
| SO-SFP-10GE-LR70   | 1310 nm         | +3 to +6                | -22 to -8                       | 25                |

**Optical Parameters: CWDM SFPs**

| Part no.\Parameter                         | Wavelength [nm] | Opt. Output Power [dBm] | Opt. Receiver Sensitivity [dBm] | Power Budget [dB] |
|--|-----------------|-------------------------|---------------------------------|-------------------|
| SO-SFP-10GE-LR-Cxx                         | CWDM            | +1 to +4                | -15 to 0.5                      | 16                |
| SO-SFP-10GE-LR40-Cxx<br>requires T-3009-40 | CWDM            | +1 to +4                | -15 to 0.5                      | 16                |
| SO-SFP-10GE-LR70-Cxx<br>requires T-3009-70 | CWDM            | +3 to +6                | -23 to -7                       | 26                |

- C27 = CWDM 1270 nm
- C29 = CWDM 1290 nm
- C31 = CWDM 1310 nm
- C33 = CWDM 1330 nm
- C35 = CWDM 1350 nm
- C37 = CWDM 1370 nm
- C39 = CWDM 1390 nm
- C41 = CWDM 1410 nm
- C43 = CWDM 1430 nm
- C45 = CWDM 1450 nm
- C47 = CWDM 1470 nm
- C49 = CWDM 1490 nm
- C51 = CWDM 1510 nm
- C53 = CWDM 1530 nm
- C55 = CWDM 1550 nm
- C57 = CWDM 1570 nm
- C59 = CWDM 1590 nm
- C61 = CWDM 1610 nm

LR40-Cxx & LR70-Cxx supports wavelength 1470nm-1610nm.