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RF PRODUCTS IN OPTICAL APPLICATIONS

GENERAL OVERVIEW

As optical networks continue to modernize, they push towards speed, small size, and optimized performance in high-frequencies. Within these optical transceivers are systems like the TOSA (Transmitter Optical Sub Assembly) and ROSA (Receiver Optical Sub Assembly) that are used to convert between optical and high-speed electrical signals. VCSELs (Vertical-Cavity Surface-Emitting Lasers) and photodetectors aid in this. The integrity, reliability, and precision of RF components becomes critical in supporting these high-speed optical systems.

KYOCERA AVX offers many parts to solve this challenge: Ultra-Broadband Resistors (UBR series), Ultra-Broadband Capacitors (550/560 Series), Broadband Attenuators (AT Series), Gain Equalizers (RCN Series), and SMT Thermal Conductors (QB Series).

OPTICAL MODULE

CONTROL UNIT

Manages the internal functions and ensures that the module operates reliably and stays within specified performance parameters.

SERDES

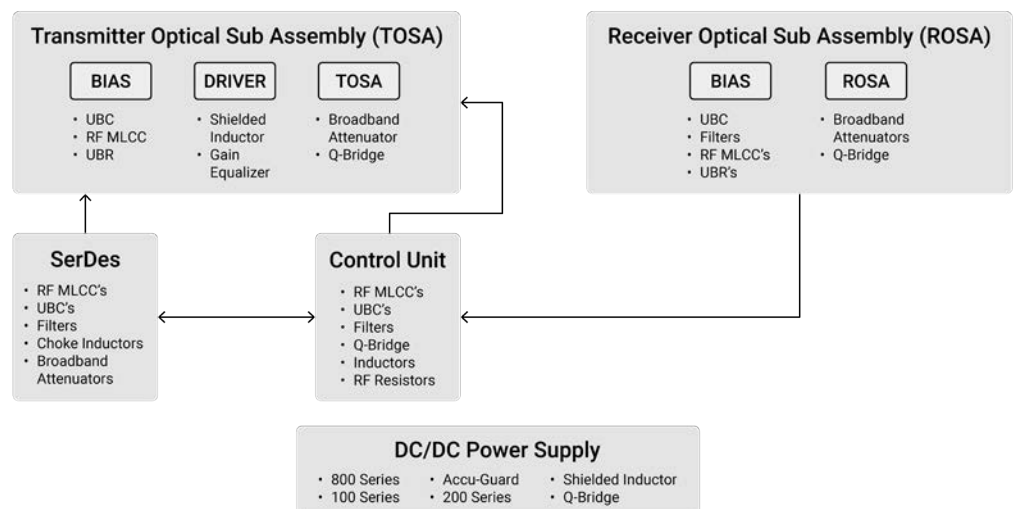
Where the serialization and deserialization of data occurs. Acts as the bridge between the host and front end.

TOSA

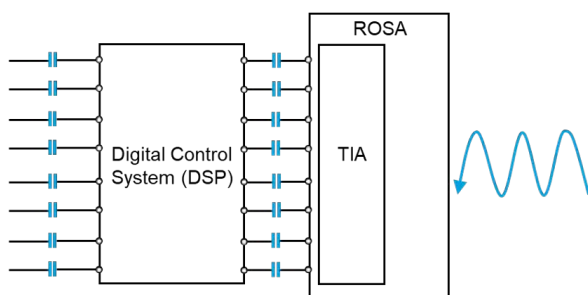
Converts electrical signals from the SerDes into optical for transmission.

ROSA

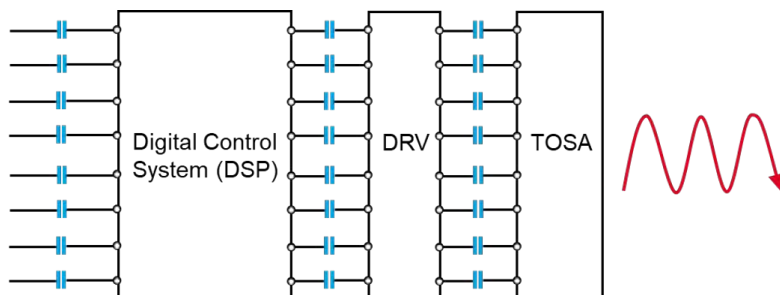
Converts optical signals from the network into electrical for the SerDes to process.



OPTIMIZING OPTICAL PERFORMANCE



ROSA Circuit -
Used to convert optical into electrical signals.



TOSA Circuit -
Used to convert electrical into optical signals.

ULTRA-BROADBAND CAPACITORS

Ultra-Broadband Capacitors are used for DC blocking and AC coupling of high-frequency signals in optical applications. KYOCERA AVX offers UBC's up to 110GHz+!

GAIN EQUALIZER

The KYOCERA AVX RCN series can be paired with the TIA to flatten the gain across the optical spectrum of interest.

ULTRA-BROADBAND RESISTORS

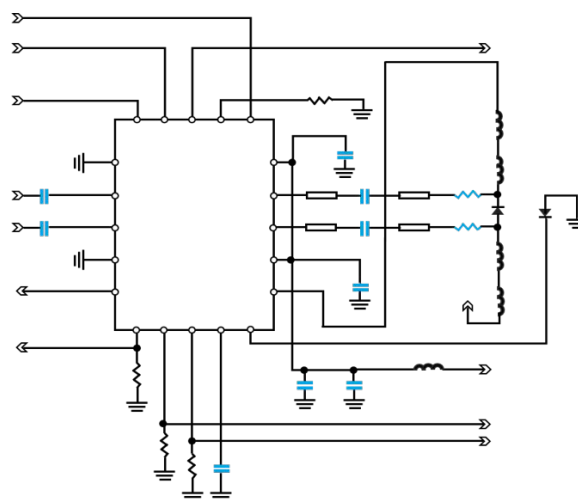
The KYOCERA AVX UBR series is designed to maintain resistance values across a wide range of frequencies. This is ideal for optical transceiver modules and other ultra-broadband applications.

THERMAL CONDUCTORS

Optical applications need thermal management to dissipate heat away from laser drivers, VCSELS, and photodetectors. KYOCERA AVX offers a cost-effective, SMT solution with the Q-Bridge.

BROADBAND ATTENUATORS

To prevent damage, overload and signal distortion in optical applications, the KYOCERA AVX AT series provides reliable broadband attenuation with reliable, repeatable performance.



VSCEL DRIVER - Used to transmit data via laser modulation

SCAN THE QR CODES BELOW FOR MORE INFORMATION:



UBC's



UBR's



Gain
Equalizers



RF
Attenuators



Thermal
Conductors

NORTH AMERICA

Mohammed Abu-Naim
Product Marketing Manager

Email: mohammed.abu-naim@kyocera-avx.com

EUROPE

Houda Rais
Product Marketing Manager

Email: houda.rais@kyocera-avx.com

ASIA

Dennis Hu
Product Marketing Manager

Email: qiangqiang_hu@kyocera.com.cn