



**Electro Optical Components, Inc.**

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## Output Load Matching

All FEMTO amplifiers have 50 Ohm output impedance and internal current limit to prevent damage to the amps output stages.

1. All FEMTO amps with  $\leq 500$  kHz bandwidth (LCA, DLPCA, DLPVA, LIA, OE-200, FWPR) must be terminated with high impedance or  $\geq 10$  kOhm load to obtain datasheet performance. This “almost open circuit” loading results in the maximum output level which the output stage can generate. If loaded with 50 Ohm termination by mistake only half output level (or less at current limiting state) will occur.

2. All FEMTO amps with  $> 500$  kHz bandwidth (e.g. series HCA, DHPCA, HVA, DHPVA, HLVA, HSA-X, HSA-Y, DUPVA) must be terminated with external 50 Ohm load to obtain their datasheet performance. Terminating the output with 50 Ohm load impedance forms a voltage divider (consisting of 50 Ohm output impedance and 50 Ohm external termination). This configuration reduces the output voltage to 50 % or -6 dB compared to the “open circuit” or unloaded state (1). If loaded with high impedance termination ( $\geq 10$  kOhm) by mistake the output level is twice the specified value, and the frequency response can be degraded due to high VSWR on the un-terminated output coax cable.