We have investigated experimentally the pulse train (mode beating) stability of a monolithic mode-locked multi-section quantum-dot laser with an added passive auxiliary optical fiber cavity. Addition of the weakly coupled (ΔΛ -24dB) cavity reduces the current-induced shift dΔΛ/dI of the principal peak in the RF spectrum (the effective pulse repetition frequency) by more than an order of magnitude, from -39.5 to -2.3 kHz/mA. The rms timing jitter of the pulse train is simultaneously reduced from 1.4 to 0.9 ps.
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