FORMULA 3.524.14

$$\int_0^\infty x^5 \, \frac{\sinh ax}{\cosh bx} \, dx = \sin \frac{\pi a}{2b} \left(\frac{\pi}{2b} \sec \frac{\pi a}{2b} \right)^6 \left(120 - 60 \cos^2 \frac{\pi a}{2b} + \cos^4 \frac{\pi a}{2b} \right)$$