FORMULA 3.524.5

$$\int_0^\infty x^{s-1}\frac{\cosh bx}{\sinh cx}\,dx=\frac{\Gamma(s)}{(2c)^s}\left[\zeta\left(s,\tfrac{1}{2}\left(1-\tfrac{b}{c}\right)\right)+\zeta\left(s,\tfrac{1}{2}\left(1+\tfrac{b}{c}\right)\right)\right]$$