

**FORMULA 3.638.2**

$$\int_0^{\pi/4} \frac{\sin^{\mu-1/2} 2x \, dx}{\cos^{\mu} 2x \cos x} = \frac{2}{\sqrt{\pi}(2\mu-1)} \Gamma\left(\mu + \frac{1}{2}\right) \Gamma(1-\mu) \sin\left(\frac{(2\mu-1)\pi}{4}\right)$$