

**FORMULA 3.853.1**

$$\int_0^{\infty} \frac{\cos(ax^2)}{\beta^2 + x^2} dx = \frac{\pi}{2\beta} \left[ \cos(a\beta^2) - \sqrt{2} \cos\left(a\beta^2 + \frac{\pi}{4}\right) C(\sqrt{a}\beta) - \sqrt{2} \sin\left(a\beta^2 + \frac{\pi}{4}\right) S(\sqrt{a}\beta) \right]$$