

## New design of high-Q sapphire resonator with distributed Bragg reflector

---

*O. Piquet, D. Cros, S. Verdeyme, P. Guillon and M.E. Tobar. "New design of high-Q sapphire resonator with distributed Bragg reflector." 2002 MTT-S International Microwave Symposium Digest 02.3 (2002 Vol. III [MWSYM]): 1993-1996 vol.3.*

In this paper, new sapphire resonator designs based on Bragg reflectors are presented. This study is based on the method of lines and is shown to be in good agreement with experiment. The resonant frequencies, field distribution and quality factors can be calculated by this method. An initial design using a TE/sub 01/spl gamma// mode in a sapphire ring resonator is presented. A Q-factor of 100,000 was measured. We show that with further optimization a Q-factor about 200,000 is possible.

 [Return to main document.](#)