

High-power Test of a 714-MHz HOM-damped Cavity for the ATF Damping Ring, M. AKEMOTO, F. HINODE, K. KUBO, S. SAKANAKA, J. URAKAWA, KEK - We present high-power test results of a prototype 714-MHz damped cavity for the ATF damping ring. The KEK ATF is a dedicated test facility for accelerator technology and design on future linear colliders. The production of very low-emittance electron beams of high intensity will be investigated at the ATF. The 1.54-GeV injector linac has been commissioned, and the damping ring is currently under construction. In order to avoid coupled-bunch instabilities in high-intensity circular accelerators, such as the ATF damping ring, it is essential to reduce narrowband HOM (higher-order-mode) impedances of accelerating cavities. For this purpose, we have developed a 714-MHz damped cavity whose harmful HOMs are heavily damped by dedicated waveguide ports. A prototype high-power test cavity was fabricated, and it was tested under high-power in September, 1995. After the conditioning of 50 hours, the maximum input power reached 50 kW without any problems. This corresponds to the gap voltage of about 0.44 MV, which is about 1.8 times higher than the nominal design value. The test results will be reported in detail.