Kizimen is active volcano located in the Eastern Kamchatka volcanic belt, on the south-eastern edge of the Central Kamchatka Depression. There is very little information about previous eruptions of Kizimen. The last known one was in 1927-1928, but there is evidence of large eruptions in the geologic record. By seismic data of Kamchatkan regional seismic network, current Kizimen activization was observed from June, 2009. All earthquakes were volcanotectonic (VT) with clear P waves and S waves. The intensity of ground motion in Kizimen area reached to 5 (MSK-64 scale) several times. It was caused by VT earthquakes beneath Kizimen with magnitudes near M=4.5-5.0. Eruption began with strong explosive events on December 12, 2010. A height of ash explosions was about 10 km. Ashfalls occurred in the local villages on the distant more then 300 km from Kizimen volcano. Low-frequency (LF) earthquakes appeared in seismic records in the middle of November as main precursor of coming eruption. LF seismicity significantly increased on December 9-10 (two days before the eruption). LF events can be caused by fluid pressurization processes. Dominant frequencies of LF earthquakes at Kizimen are between 2-3 Hz. Considering the ratios of the spectra components of 1.5-3.0 Hz, 3.0-6.0 Hz, 6.0-12.0 Hz in the waveforms, we objectively classified and separated LF and VT earthquakes in a unified flow of seismic events. We used spectra amplitudes in three frequency ranges on triangle diagram for visualization of earthquake types as prototype of automatically classification.