

Abstract of the Disclosure

A protection circuit for an audio output channel of a television receiver includes a detector (17L,17R) which detects the presence of either or both of (1) a sustained DC component applied to the loudspeaker (3L,3R) from the audio power amplifier (1L,1R), (2) and the loss of a supply voltage for the power amplifier (1L,1R). The presence of a of a sustained DC component can damage the loudspeaker (3L,3R). The loss of a supply voltage of the power amplifier (1L,1R) can damage the power amplifier (1L,1R) and can also result in the application of a sustained DC component to the loudspeaker (3L,3R). For example, the loss of the negative supply voltage of a power amplifier (1L,1R) incorporated in an integrated circuit (5L,5R) results in the removal of potential from the substrate (55L,55R) which otherwise serves to electrically isolates various semiconductor devices supported by the substrate (55L,55R). The detector (17L,17R) includes a low pass filter (11L,11R) coupled between the output of the power amplifier (1L,1R) and inputs of first and second comparators (19L,19R,21L,21R) to detect when the output signal of the low pass filter (11L,11R) is within or outside of a "window". A transistor switch (49) is coupled to output of the comparators (19L,19R,21L,21R). As long as the output of the low pass filter (11L,11R) is within the window, each comparator (19L,19R,21L,21R) generates a respective low level output signal which keeps the transistor switch (49) turned off. However, if the output signal of the lowpass filter (11L,11R) is outside of the window, one of the comparators (19L,19R,21L,21R) generates a high level output signal signal which causes the transistor switch (49) to be turned on. The comparators (19L,19R,21L,21R) normally receive the same supply voltages as the power amplifier (1L,1R), and the loss of the negative supply voltage does not enable either of the comparators (19L,19R,21L,21R) to generate a low enough level output signal for keeping the transistor (49) off.

