

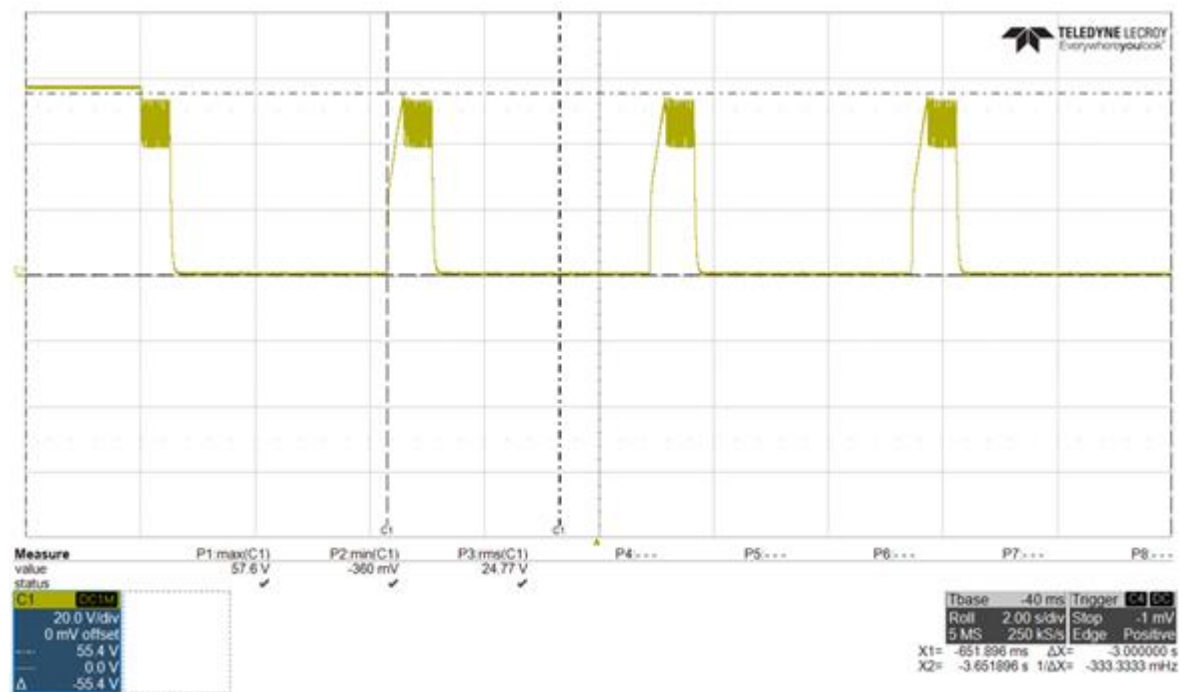
OSM/EE DECISION SHEET

Category	Standard:	Clause	Document no.
OFF	EN 62368-1:2014	5.2.2	OSM-EE 19/1
Subject	Key words		Meeting
ES classification	ES1 limits, single pulse, repetitive pulses, output overload		Ljubljana 2019

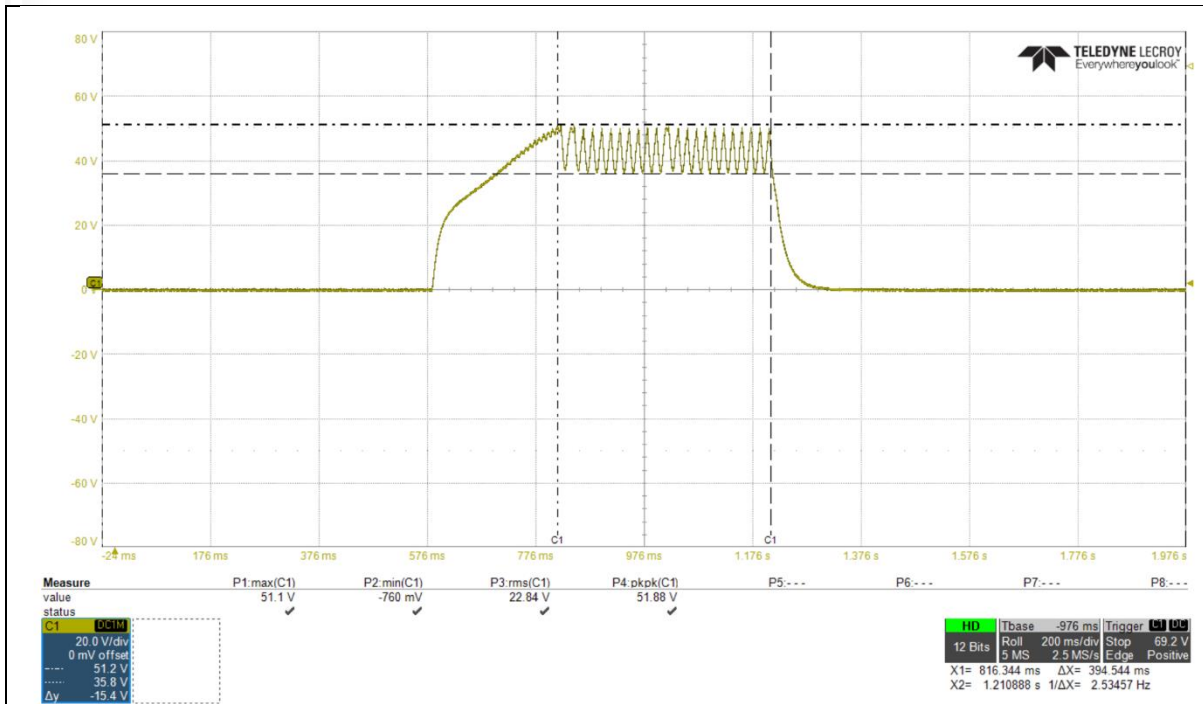
Question

Result of the abnormal operation (output overload) on switch mode power supply, was protective (hiccup) mode with repetitive pulses on the output. Off time between pulses is >3s (see Fig. 1). Each single pulse last for approximately 700msec. Each single pulse has some ringing. The voltage of single pulse does not exceed 60Vpk.

Can such output be classified as ES1?



Picture 1 – output hiccup



Picture 2 – zoom of single pulse

Decision

Yes. The result of the abnormal test is repetitive pulses, therefore clause 5.2.2.5 applies. Since the off time between the pulses is >3s, the limits for single pulse (5.2.2.4) have to be considered. Since the pulse voltage never exceeds 60Vpk, the output can be classified as ES1

Confirmed by TC108 at Raleigh, 2019

Explanatory notes

The standard does not limit the maximum duration for a single pulse, nor does it consider the shape of a single pulse.