

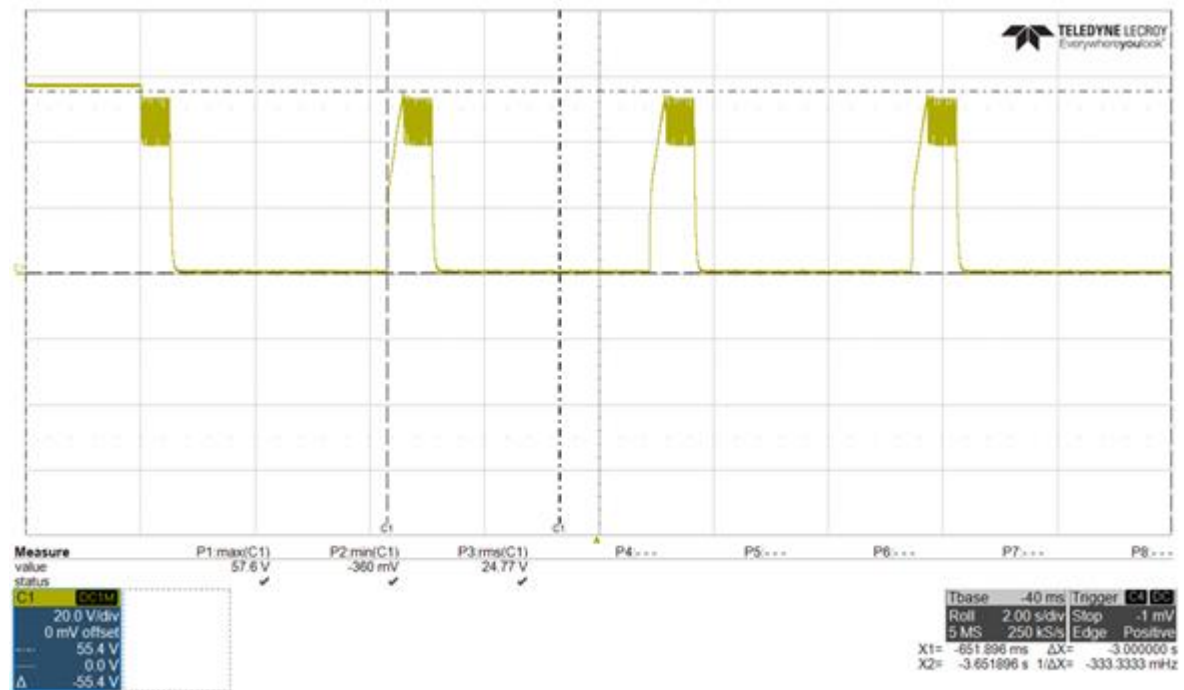
OSM/EE DECISION SHEET

Category	Standard:	Clause	Document no.
ITAV	EN 62368-1:2014 + A11:2017 EN IEC 62368-1:2020 + A11:2020 EN IEC 62368-1:2024 + A11:2024	5.2.2	OSM-EE 19/1 rev 1
Subject		Key words	Meeting
ES classification		ES1 limits, single pulse, repetitive pulses, output overload	Ljubljana 2019 Helsinki 2024

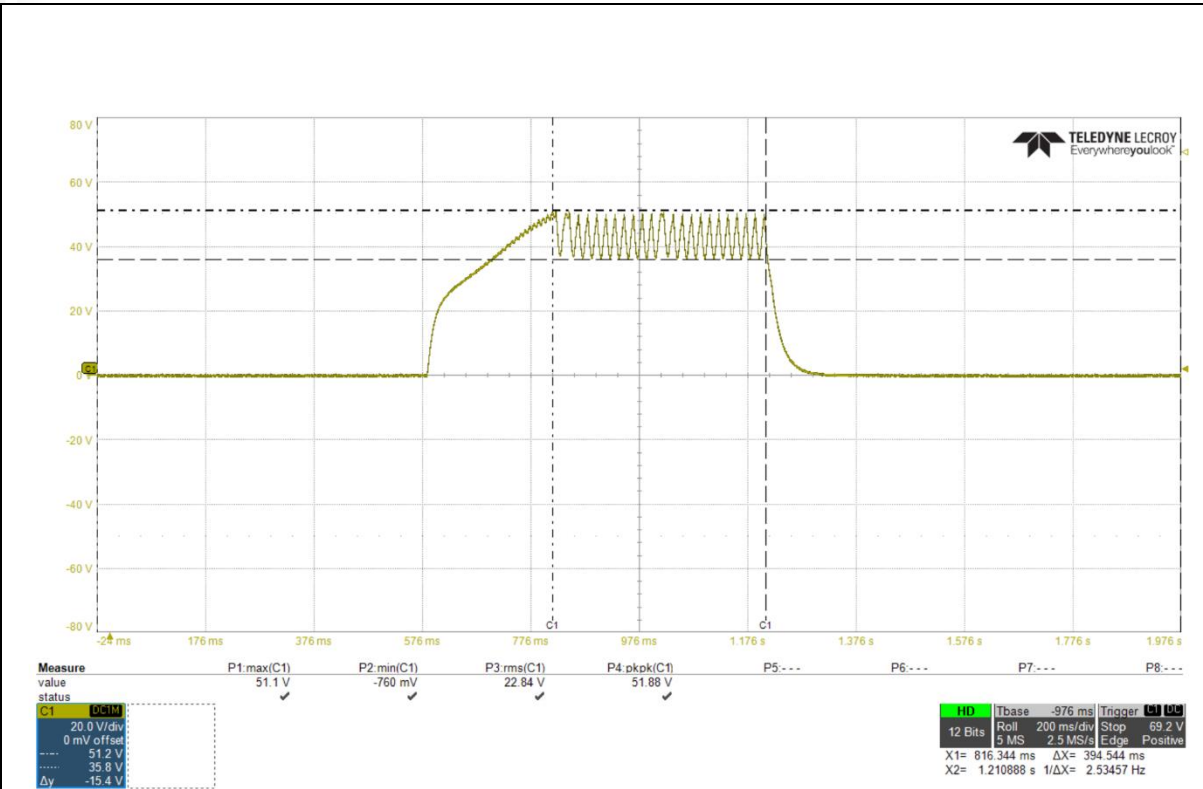
Question

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.

In Helsinki 2024, OSM-EE decision 19/1 was modified with following changes:

- add 3rd and 4th editions of EN IEC 62368-1
- change category from OFF to ITAV