11947A-01

S E R V I C E N O T E

Supersedes:
NONE

11947A Transient Limiter

Serial Numbers: ALL

May Fail Limiter Function Test

Parts Required:

P/N	Description	Qty.
NONE		

ADMINISTRATIVE INFORMATION

SERVICE NOTE CLASSIFICATION: **INFORMATION ONLY**	
AUTHOR: MPM	PRODUCT LINE: 12
ADDITIONAL INFORMATION:	

August 1, 2011
Rev. 18

Agilent Technologies

Situation:
There is a functional test to check of the limiter's ability to limit the input signal in Chapter 3 of the Operating and Service Manual (11947-90006) on page 8 titled "Limiting".

In step 6 of this procedure it states that if the measurement is less than 0.52 V the limiting action is working properly, and in step 7 it states that if the measurement is between 0.52 V and 0.60 V that additional testing would be required to verify that the device is functioning properly. Steps 8 through 16 then outlines what this additional testing would require. However, the voltage level to trigger this additional testing needs to be adjusted along with the procedure for the additional testing.

This parameter of the limiting ability of the device is not a specified performance parameter of the limiter, so the actual measurement values specified by the functional test should not be used to determine that the limiting ability of the limiter is out of tolerance.

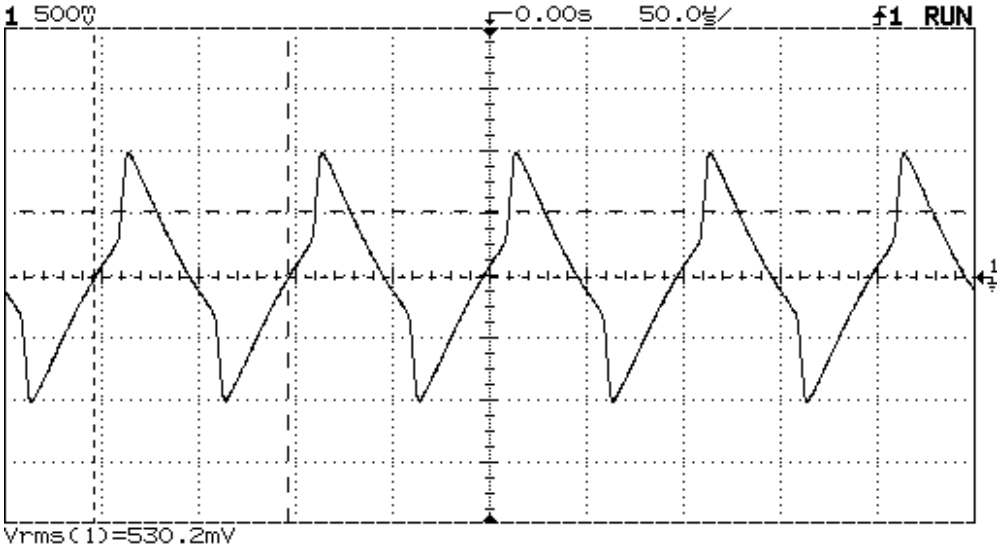
Since this is not a specified performance parameter of the limiter, it is only a characteristic, it would not be required when performing a performance verification of the limiter, and any measurements made that do not fall within the limits of the test would not constitute an actual failure.

Solution/Action:
If the Limiting functional test is being done, change the following:

Step 6: Change the voltage limits from 0.52 V to **0.56 V**
Step 7: Change the voltage range from 0.52 V and 0.60 V to **0.56 V and 0.64 V**

If the measurement falls between 0.56 V and 0.64 V do not perform the procedure outlined in steps 8 through 16. Instead, do the following:

8. Disconnect the input from the voltmeter and connect it to an oscilloscope input.
9. Setup the scale of the oscilloscope horizontal axis to 50 µs/div and the vertical axis to 0.5 V/div.
10. If the oscilloscope has an input impedance setting make sure it is set to 1 MΩ
11. Verify that the waveform displayed on the oscilloscope resembles that shown in the figure below. Focus on the symmetry of the waveform, which will indicate that both the positive and negative limiting diodes are functioning properly.



12. If the waveform is symmetrical the limiting action is working and no further verification is required.