

APPENDIX A

Good and Bad Signatures

The following signatures are from actual good and faulty electronic components. These were generated on a Huntron Tracker Model 5100DS at a frequency of 200 Hz. The “good signature” is above the “bad signature”. The signatures were arranged so that the differences can be easily seen.

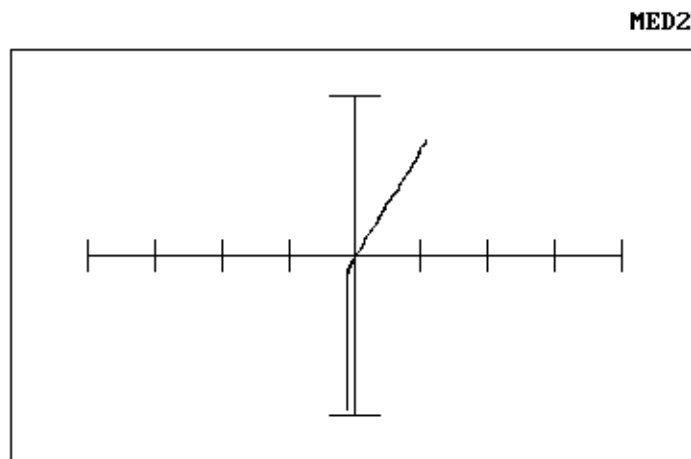


Figure A-1. Good Bus Signature with 10k Pull-up Resistor.

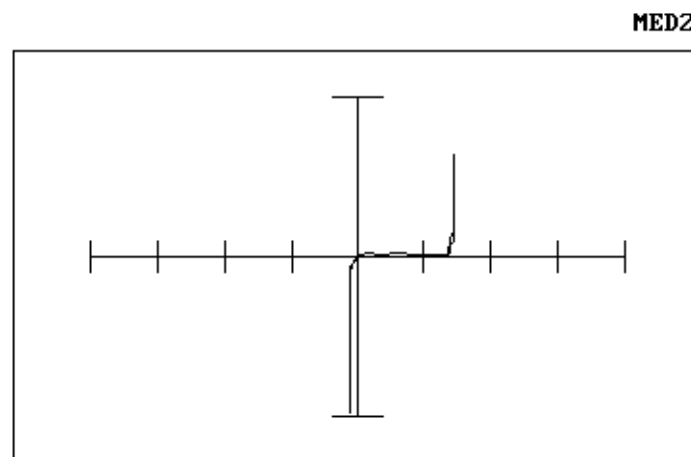


Figure A-2. Bad Bus Signature with an Open 10k Pull-up Resistor.

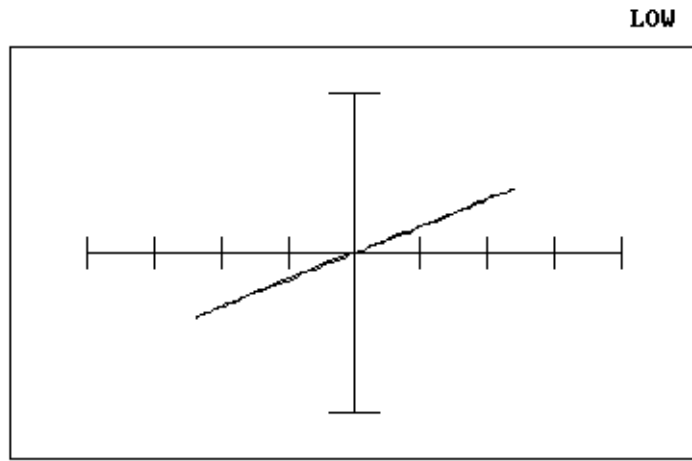


Figure A-3. Good Potentiometer

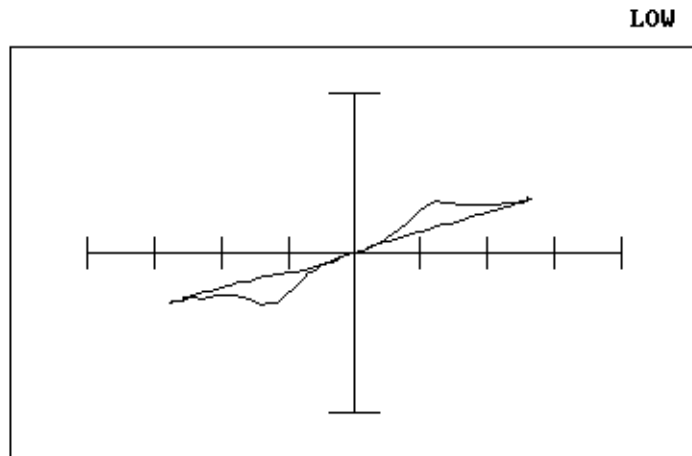


Figure A-4. Bad Potentiometer, Noisy.

LOW

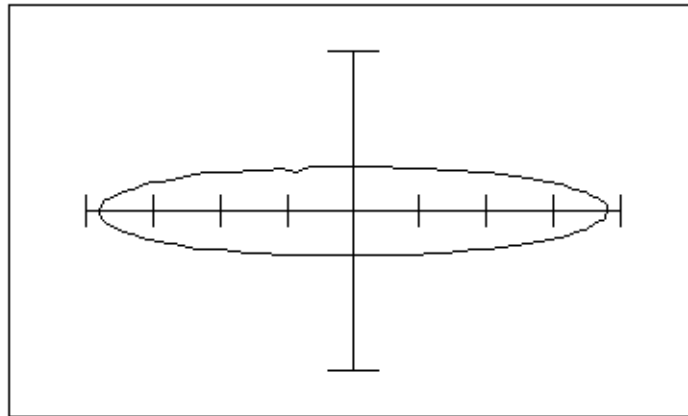


Figure A-5. Good 4.7 μ F Capacitor.

LOW

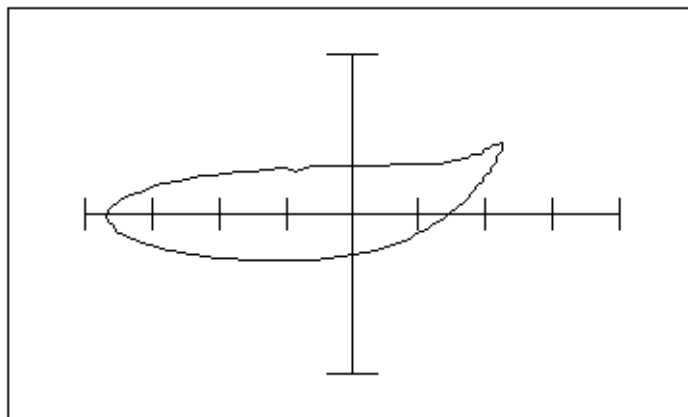


Figure A-6. Bad 4.7 μ F Capacitor, Electrolytic Abnormality.

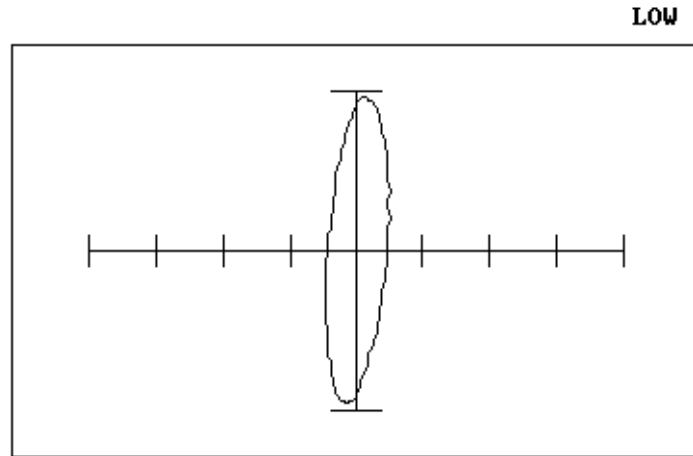


Figure A-7. Good 68µF Capacitor.

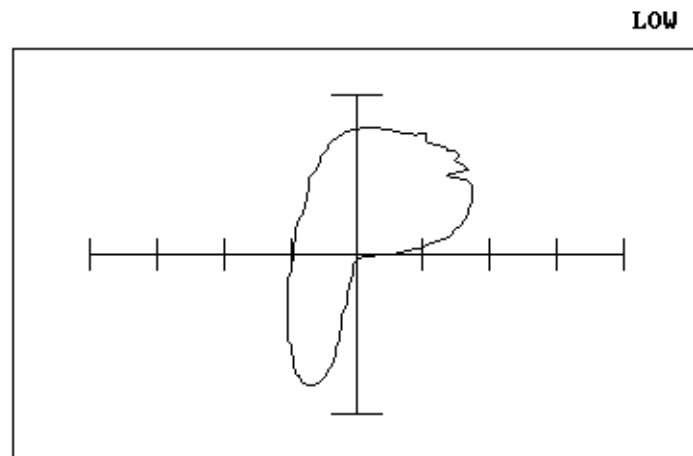


Figure A-8. Bad 68µF Capacitor, Breakdown with Current.

LOW

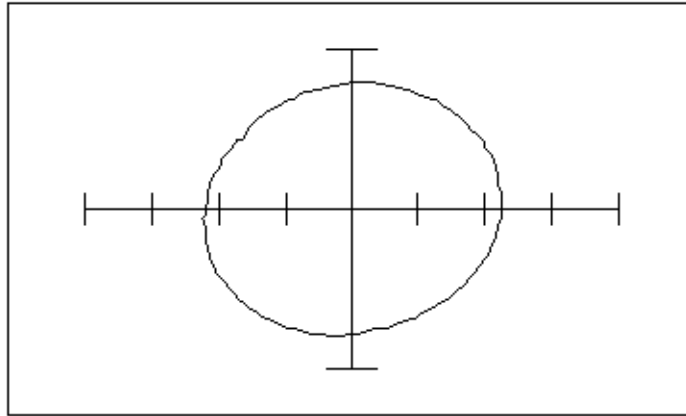


Figure A-9. Good 22µF Capacitor.

LOW

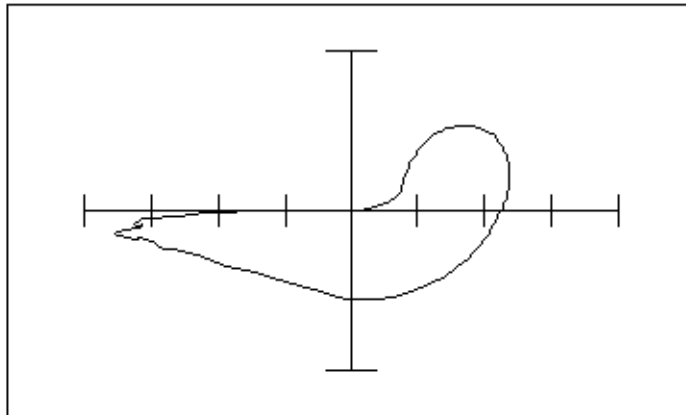


Figure A-10. Bad 22µF Capacitor.

MED1

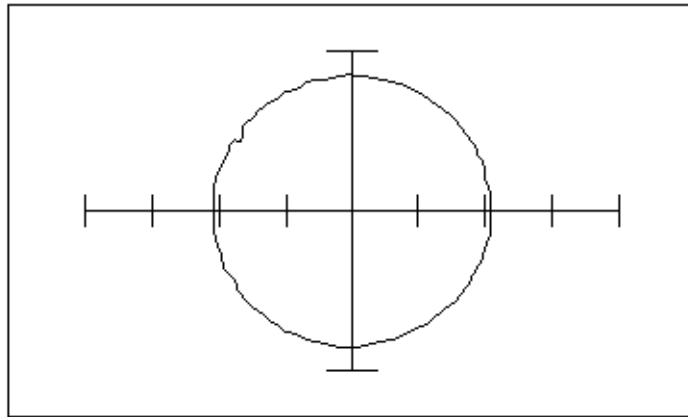


Figure A-11. Good 1 μ Capacitor.

MED1

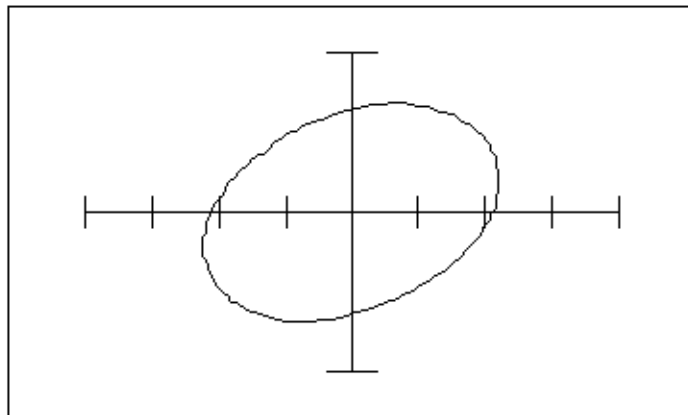


Figure A-12. Bad 1 μ F Capacitor, Leakage.

MED1

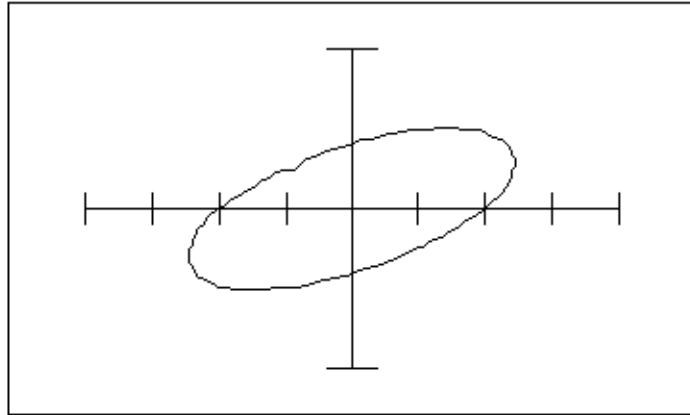


Figure A-13. Bad 1µF Capacitor.

MED1

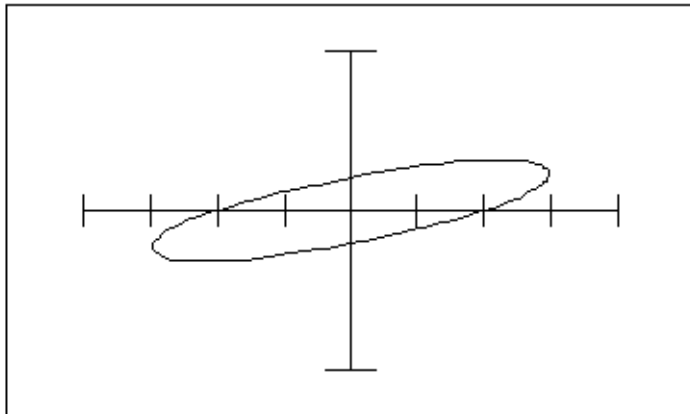


Figure A-14. Bad 1µF Capacitor.

LOW

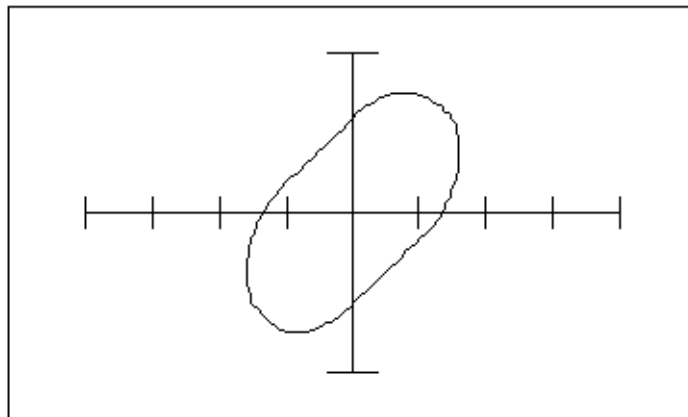


Figure A-15. Good 9.5mH Coil.

LOW

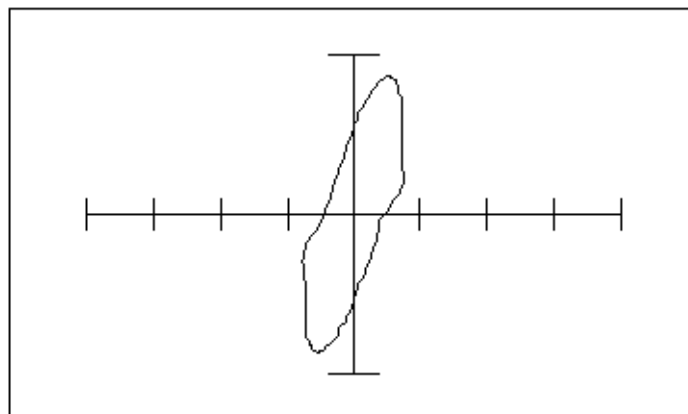


Figure A-16. Bad 9.5mH Coil, Damaged Core.

MED1

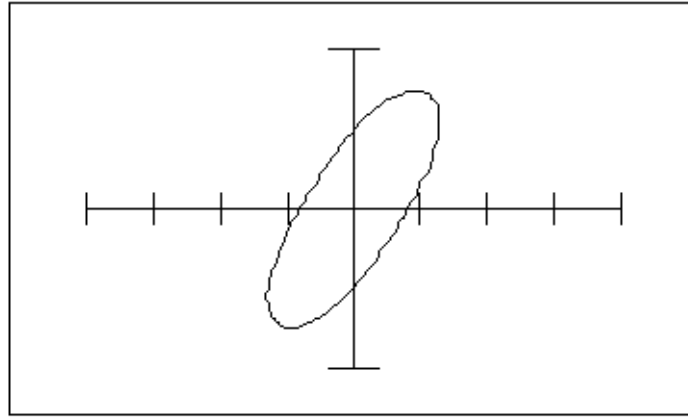


Figure A-17. Good 243mH Inductor.

MED1

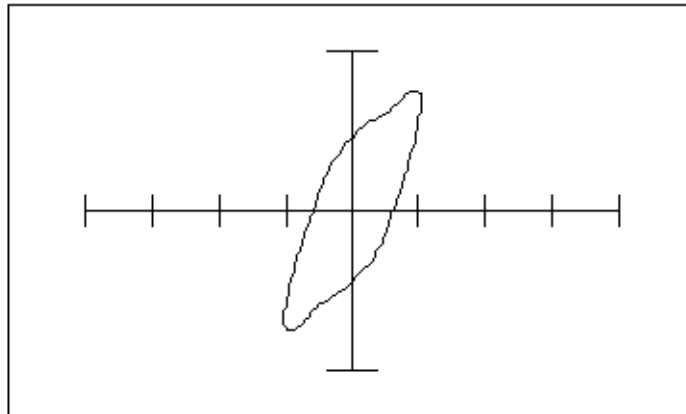


Figure A-18. Bad 243mH Inductor, Shorted Windings.

MED2

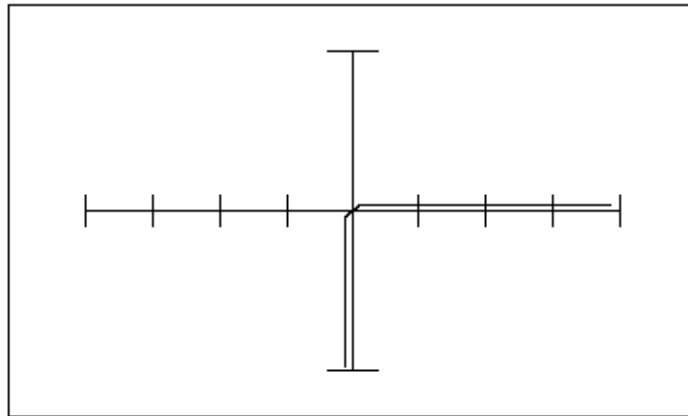


Figure A-19. Good Diode.

MED2

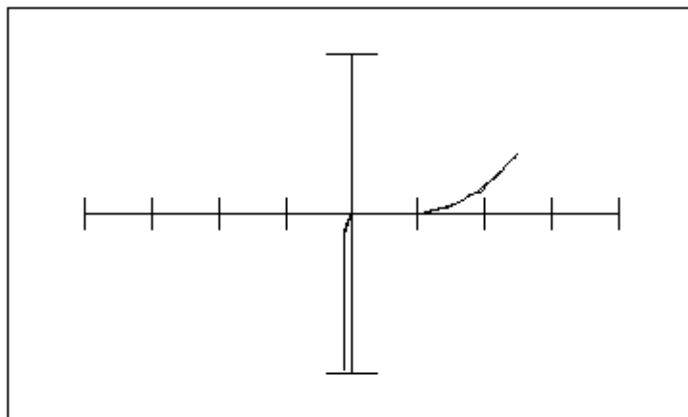


Figure A-20. Bad Diode, Leakage in the Reverse Bias Region.

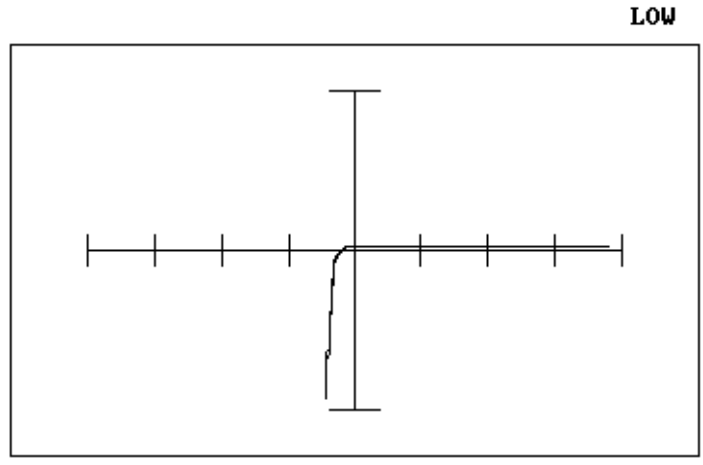


Figure A-21. Good Diode.

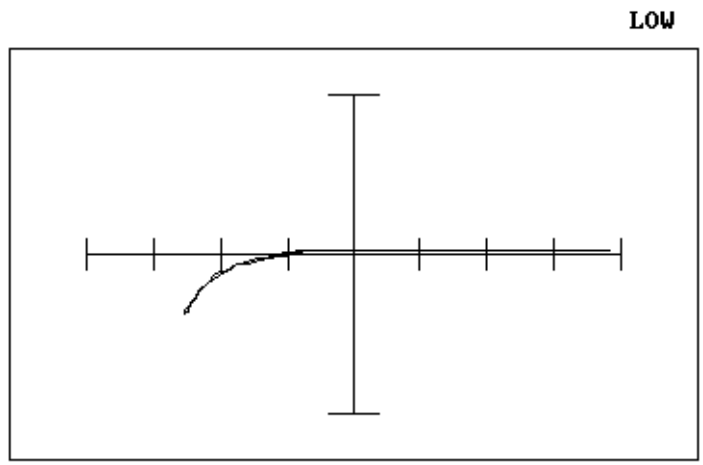


Figure A-22. Bad Diode, Leakage in the Forward Bias Region.

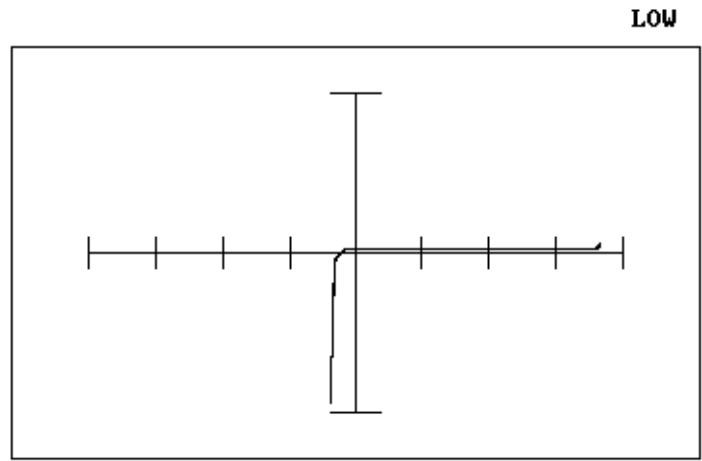


Figure A-23. Good Zener Diode.

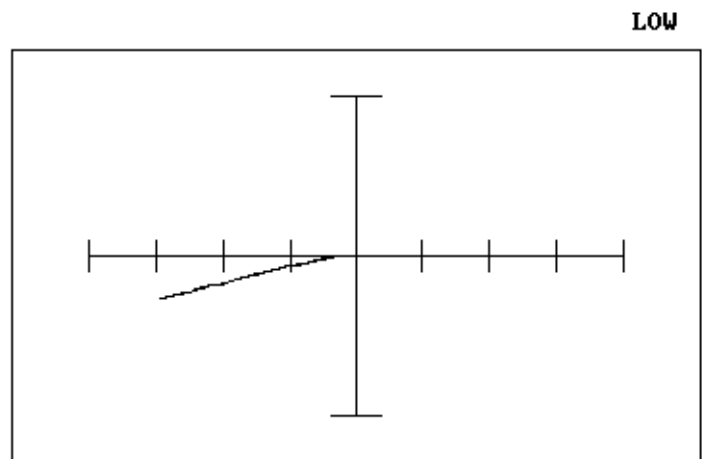


Figure A-24. Bad Zener Diode, Leakage.

MED1

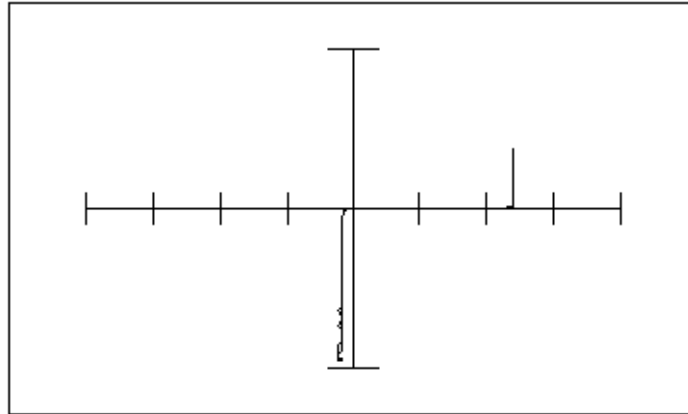


Figure A-25. Good Zener Diode.

MED1

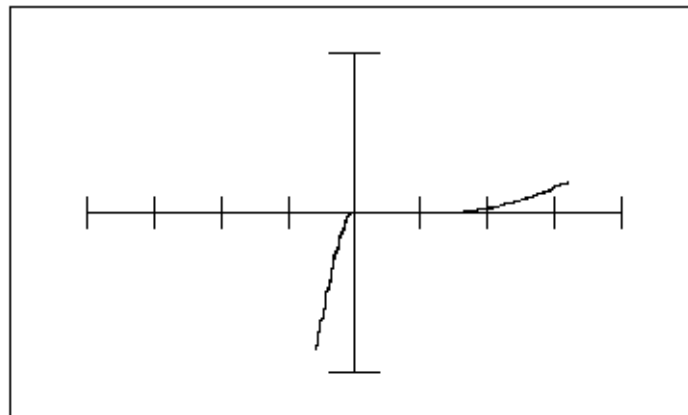


Figure A-26. Bad Zener Diode.

MED2

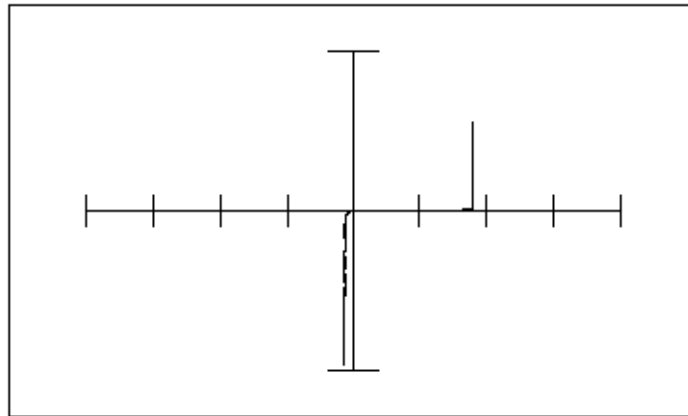


Figure A-27. Good Zener Diode.

MED2

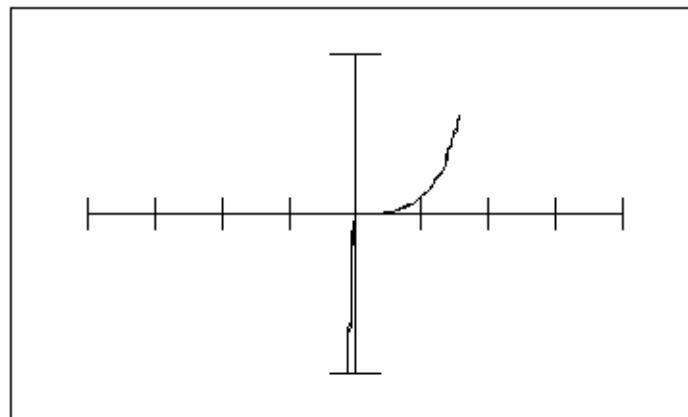


Figure A-28. Bad Zener Diode.

MED1

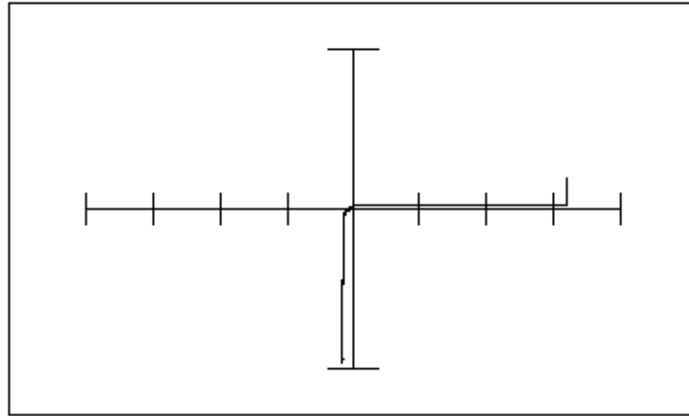


Figure A-29. Good Base-Emitter Junction of a TIP50.

MED1

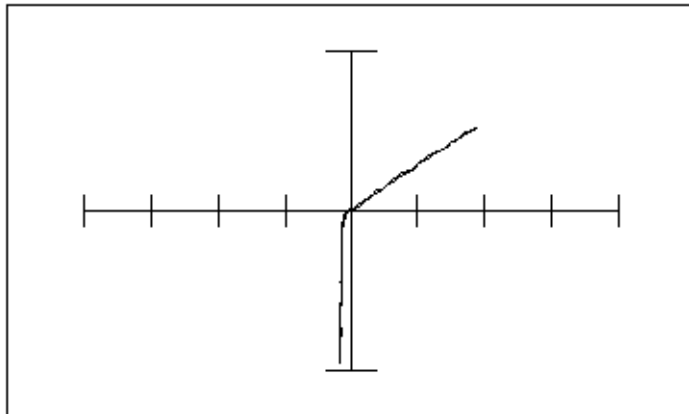


Figure A-30. Bad Base-Emitter Junction of a TIP50.

MED1

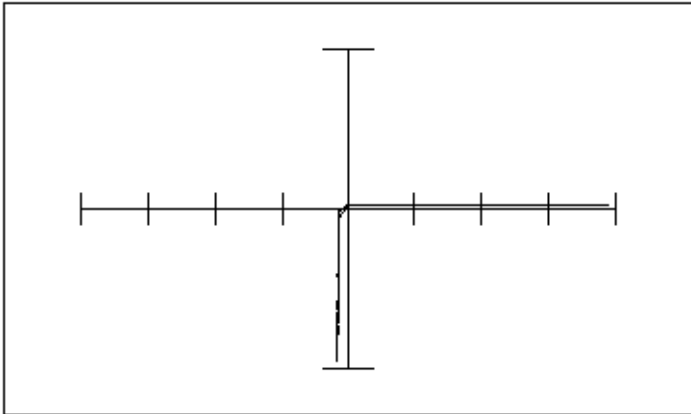


Figure A-31. Good Base-Collector Junction of a TIP50.

MED1

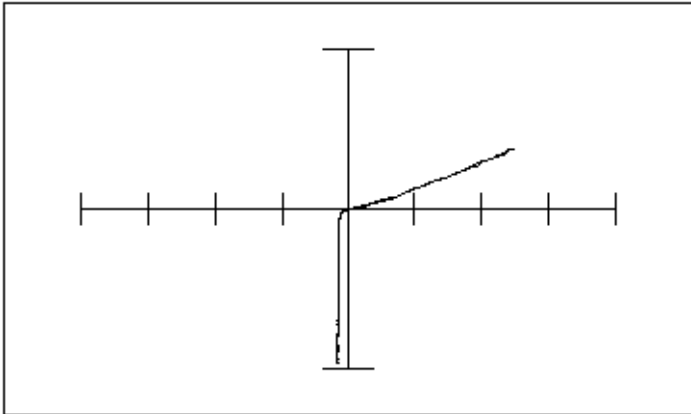


Figure A-32. Bad Base-Collector Junction of a TIP50.

MED1

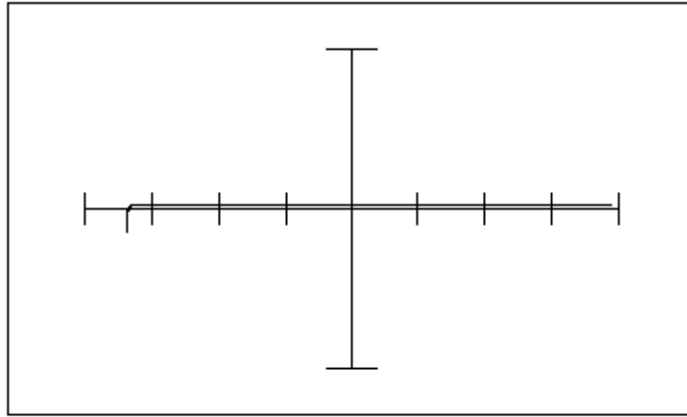


Figure A-33. Good Emitter-Collector Junction of a TIP50.

MED1

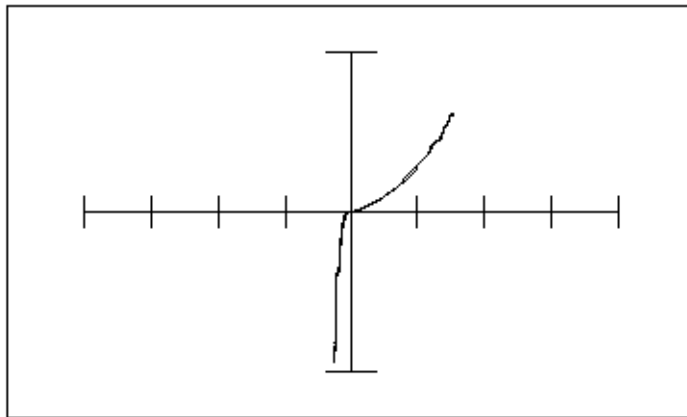


Figure A-34. Bad Emitter-Collector Junction of a TIP50.

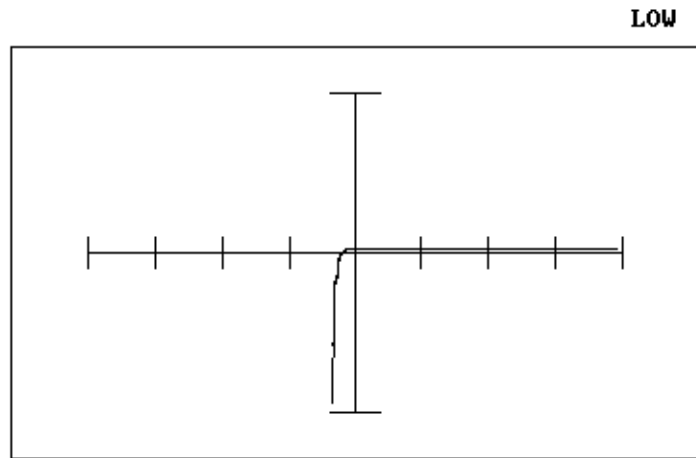


Figure A-35. Good Base-Emitter Junction of a 2N3055.

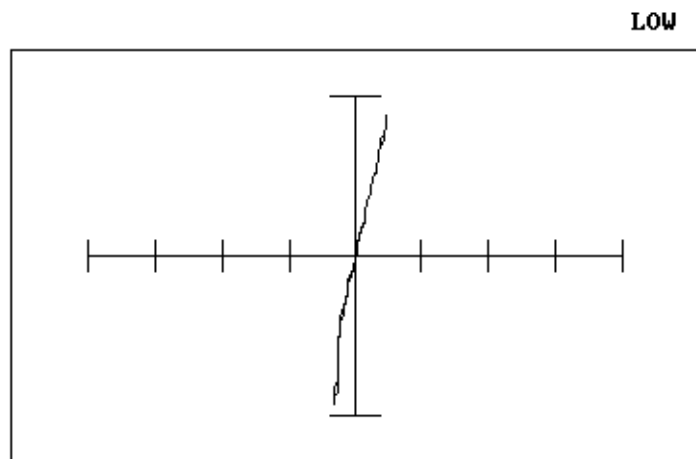


Figure A-36. Bad Base-Emitter Junction of a 2N3055.

MED2

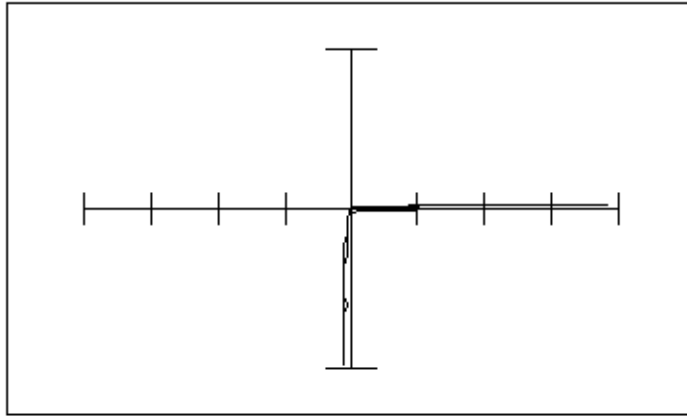


Figure A-37. Good Base-Collector Junction of a 2N3055.

MED2

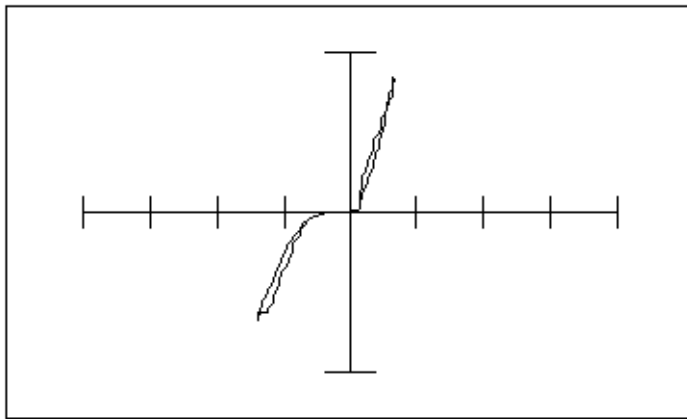


Figure A-38. Bad Base-Collector Junction of a 2N3055.

MED1

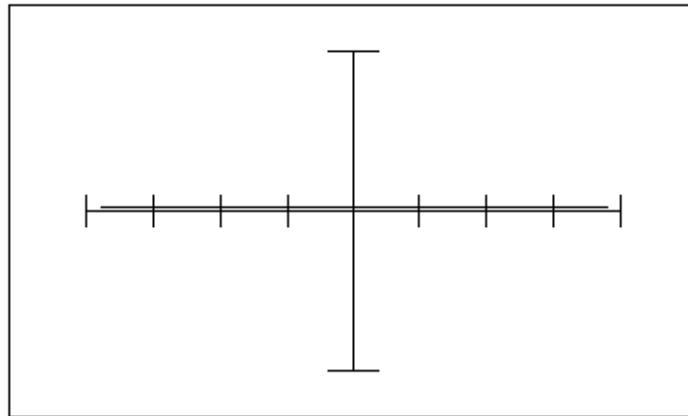


Figure A-39. Good Emitter-Collector Junction of a 2N3055.

MED1

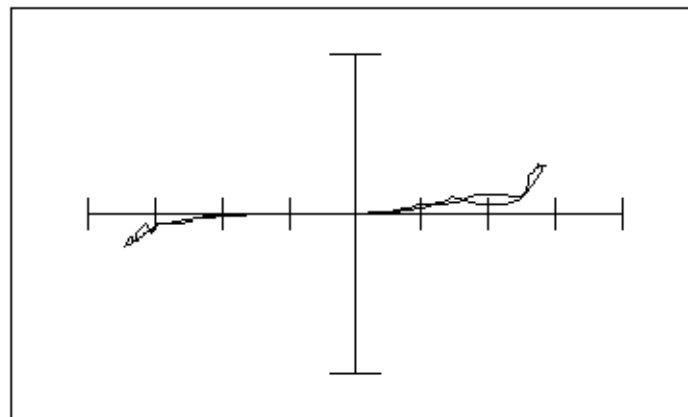


Figure A-40. Bad Emitter-Collector Junction of a 2N3055.

MED2

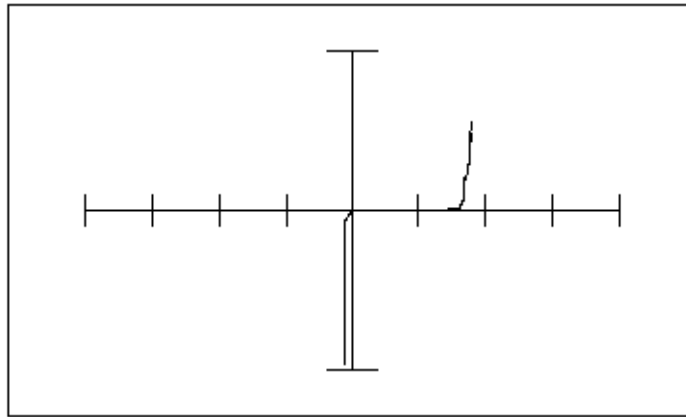


Figure A-41. Good 7400, Pin 10.

MED2

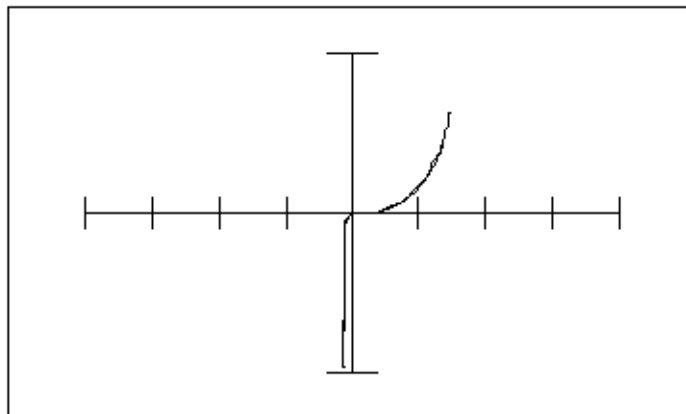


Figure A-42. Bad 7400, Pin 10.

MED2

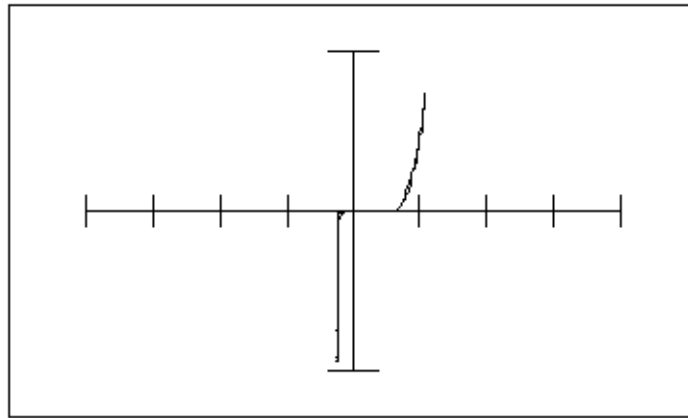


Figure A-43. Good CD4011, Pin 4.

MED2

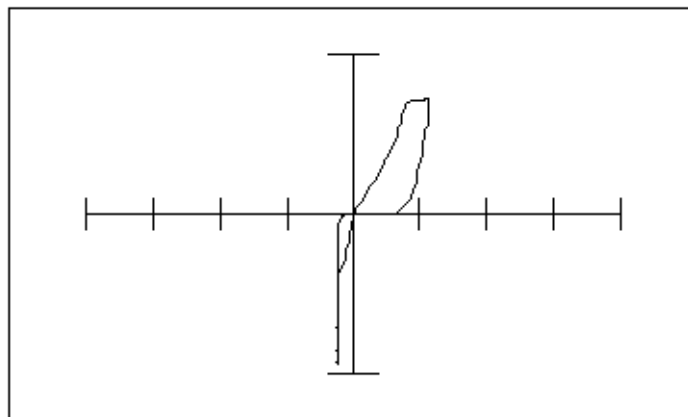


Figure A-44. Bad CD4011, Pin 4.