

Linear Regulator Series

BAxxDD0 Series Typical Performance Curves

No.AEK59-D1-0091-0

LIST

BA15DD0 ($V_O=1.5V$)	2
BA18DD0 ($V_O=1.8V$)	6
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BA15DD0 ($V_o=1.5V$)

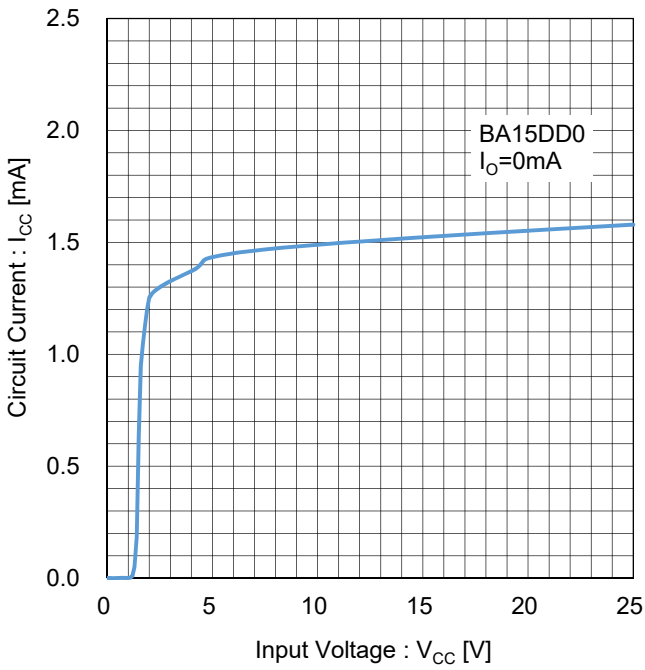


Figure 1. Circuit Current
Test Circuit A

Refer to the data of BA33DD0

Figure 2. Dropout Voltage vs Output Current
Test Circuit B

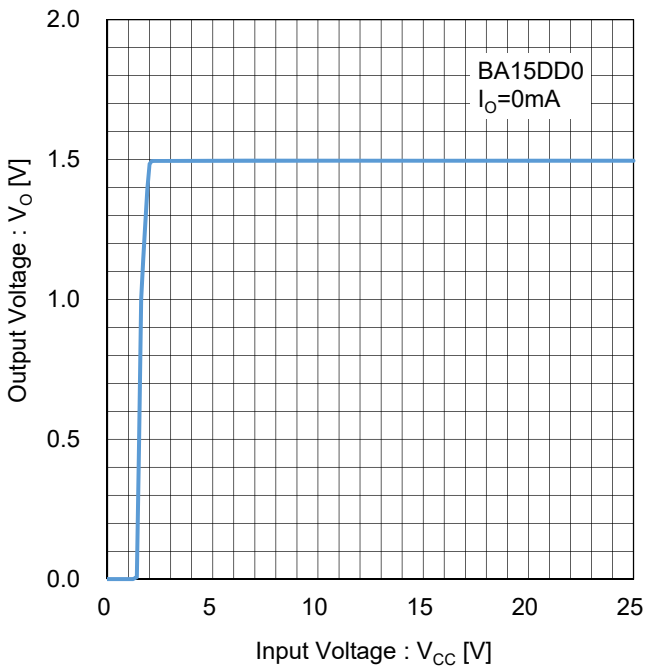


Figure 3. Output Voltage vs Input Voltage
($I_o=0mA$)
Test Circuit C

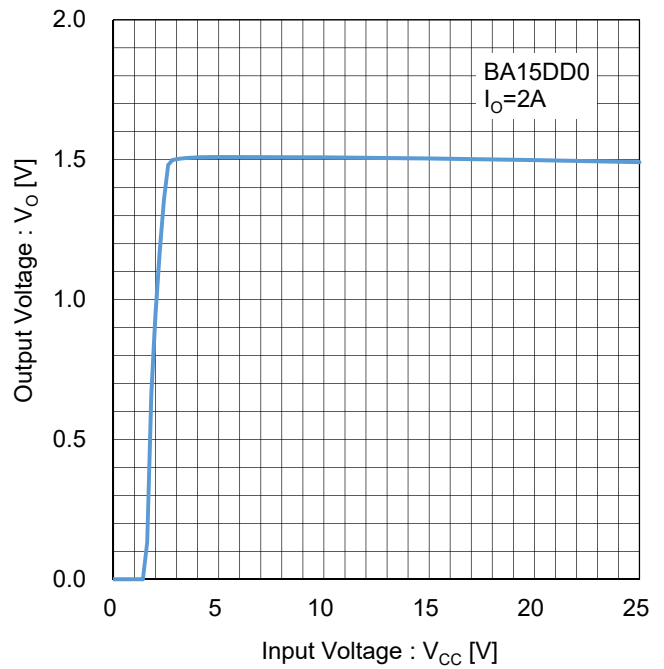


Figure 4. Output Voltage vs Input Voltage
($I_o=2A$)
Test Circuit C

BA15DD0 ($V_o=1.5V$)

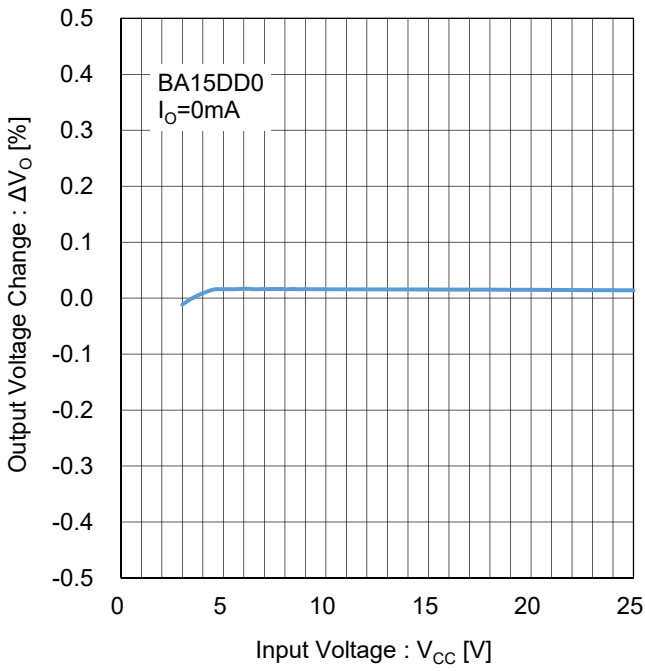


Figure 5. Line Regulation ($I_o=0mA$)
Test Circuit D

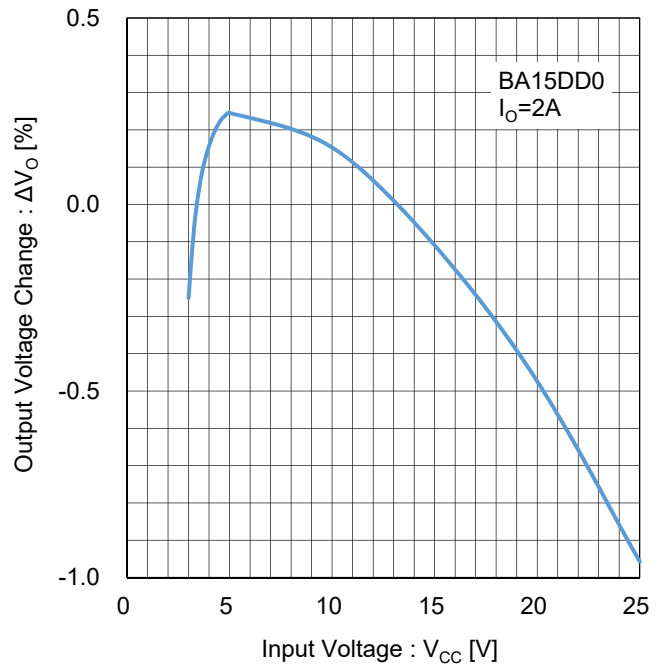


Figure 6. Line Regulation ($I_o=2A$)
Test Circuit D

Refer to the data of BA33DD0

Refer to the data of BA33DD0

Figure 7. Overcurrent Protection
Test Circuit E

Figure 8. Load Regulation
Test Circuit F

BA15DD0 ($V_O=1.5V$)

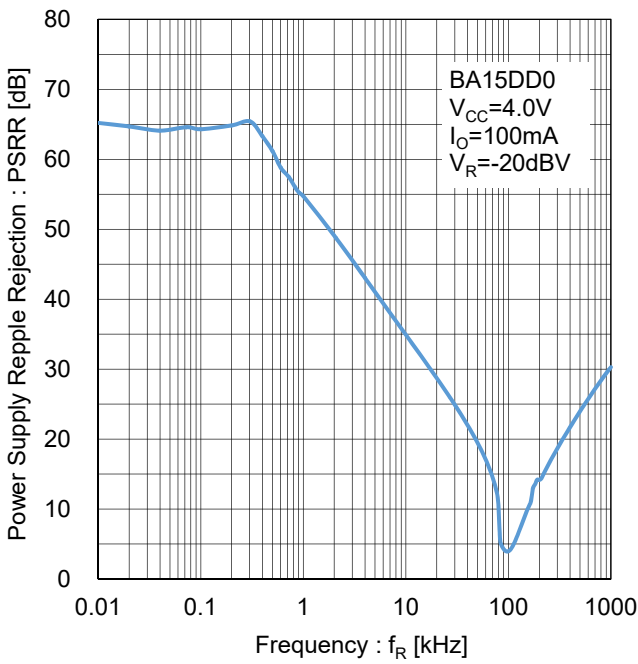


Figure 9. Ripple Rejection
Test Circuit G

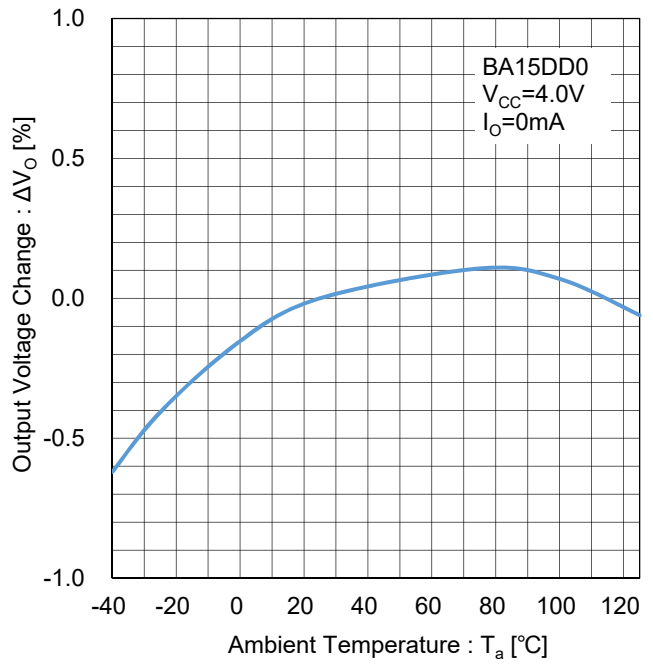


Figure 10. Output Voltage Temperature Stability
Test Circuit H

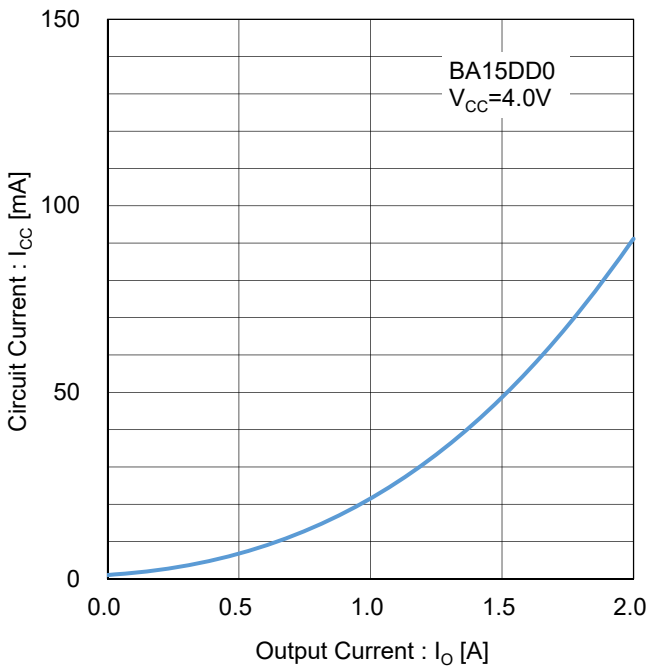


Figure 11. Circuit Current vs Output Current
Test Circuit I

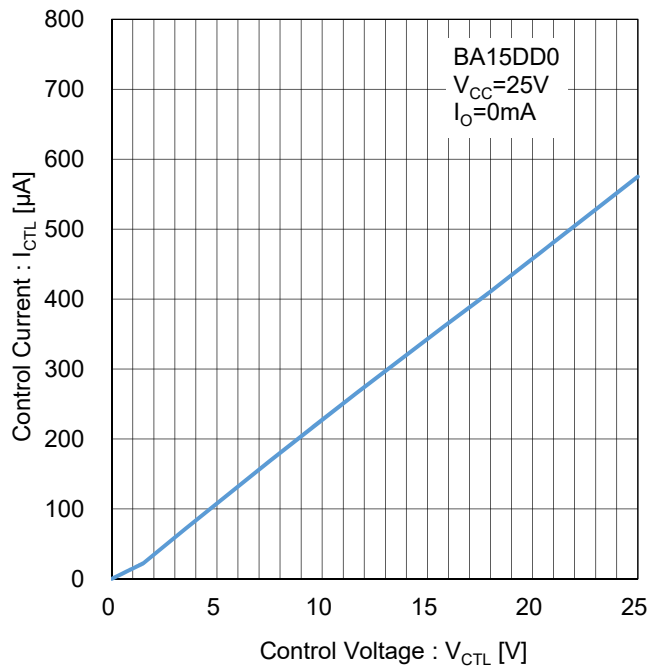


Figure 12. CTL Pin Current
Test Circuit J

BA15DD0 ($V_O=1.5V$)

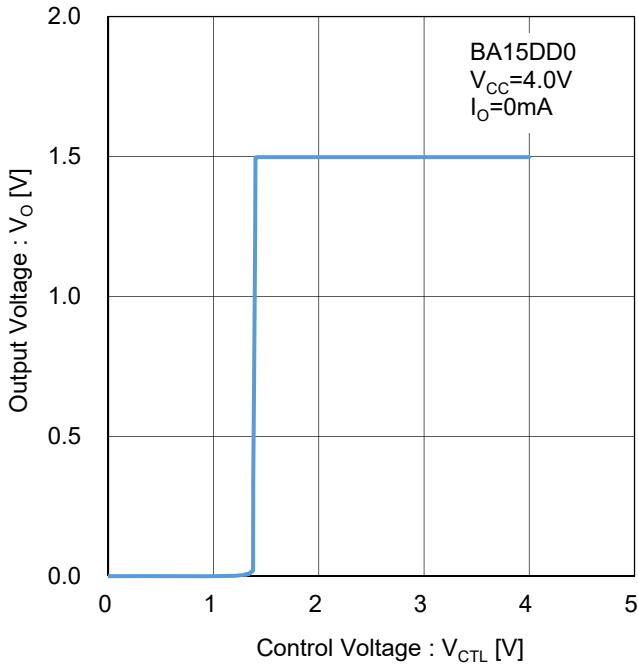


Figure 13. Output Voltage vs CTL Pin Voltage
Test Circuit K

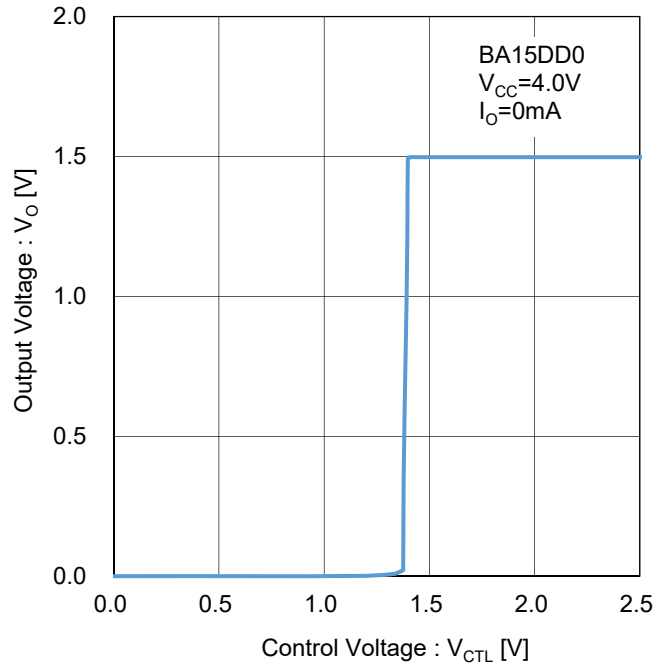


Figure 14. Output Voltage vs CTL Pin Voltage
Test Circuit K

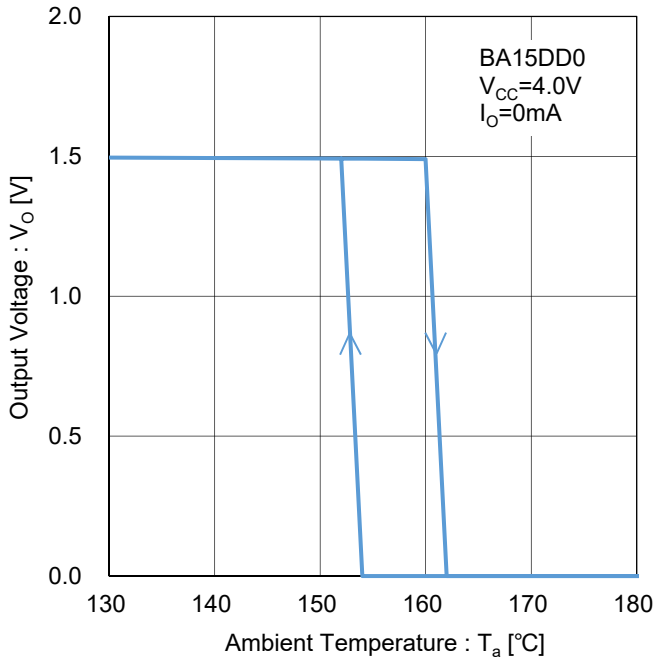


Figure 15. Thermal Shutdown
Test Circuit L

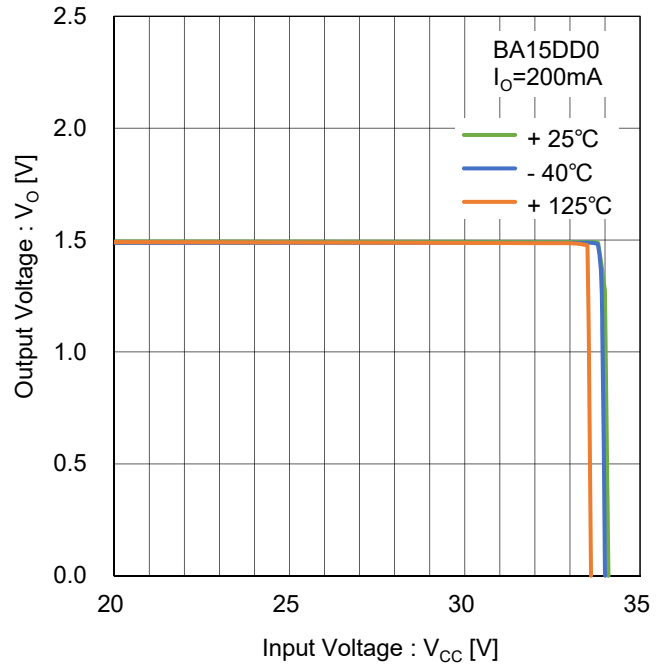


Figure 16. Overvoltage Protection
Test Circuit M

BA18DD0 ($V_o=1.8V$)

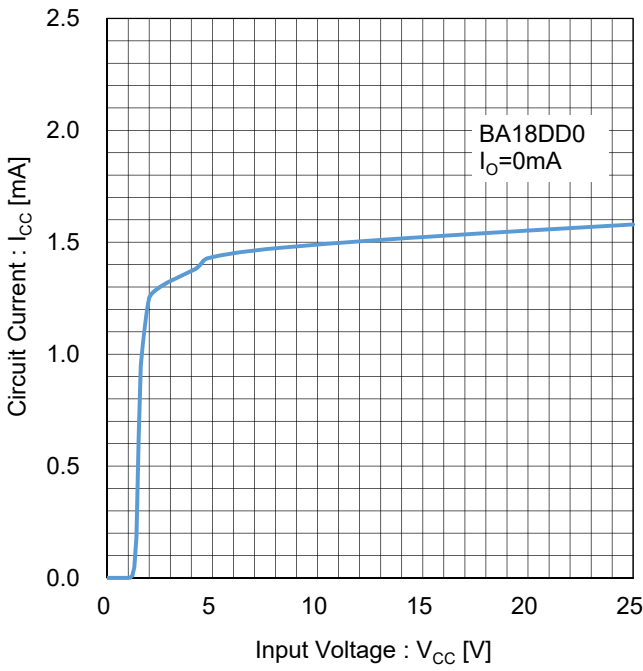


Figure 17. Circuit Current
Test Circuit A

Refer to the data of BA33DD0

Figure 18. Dropout Voltage vs Output Current
Test Circuit B

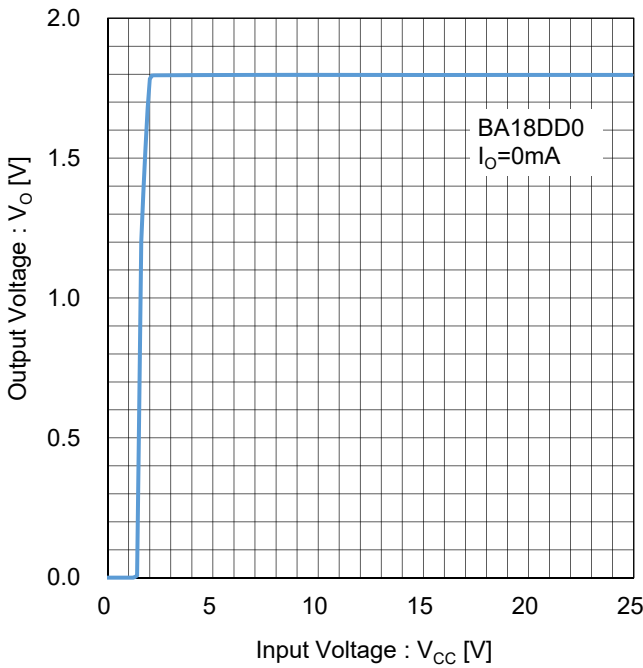


Figure 19. Output Voltage vs Input Voltage
($I_o=0mA$)
Test Circuit C

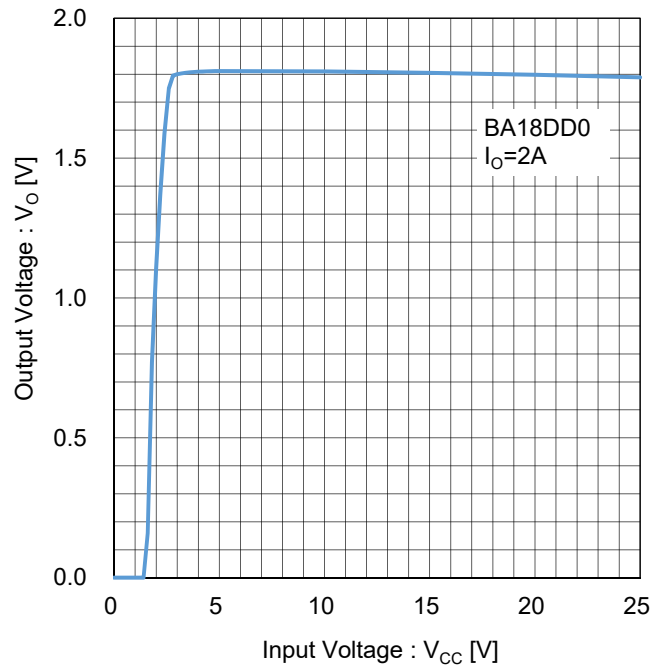


Figure 20. Output Voltage vs Input Voltage
($I_o=2A$)
Test Circuit C

BA18DD0 ($V_O=1.8V$)

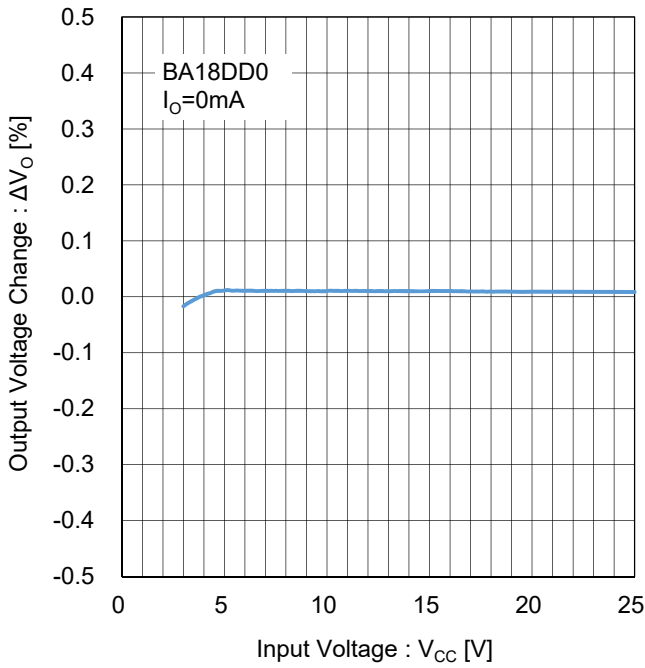


Figure 21. Line Regulation
($I_o=0mA$)
Test Circuit D

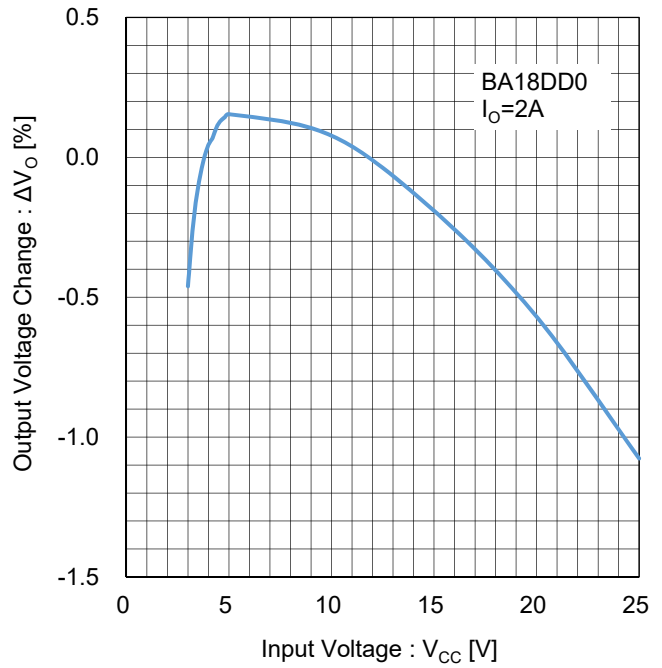


Figure 22. Line Regulation
($I_o=2A$)
Test Circuit D

Refer to the data of BA33DD0

Refer to the data of BA33DD0

Figure 23. Overcurrent Protection
Test Circuit E

Figure 24. Load Regulation
Test Circuit F

BA18DD0 ($V_O=1.8V$)

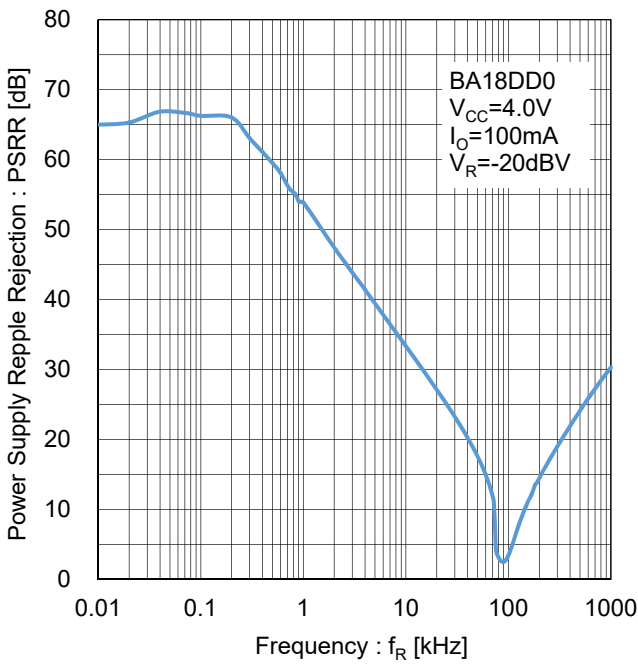


Figure 25. Ripple Rejection
Test Circuit G

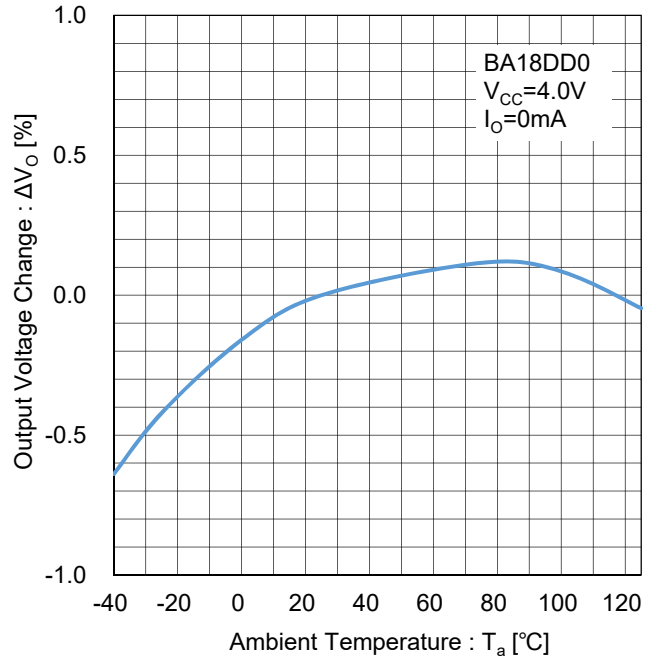


Figure 26. Output Voltage Temperature Stability
Test Circuit H

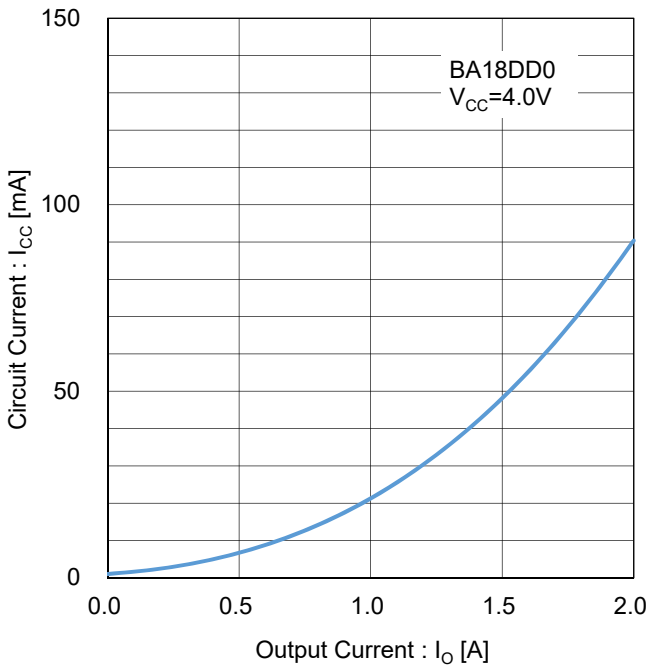


Figure 27. Circuit Current vs Output Current
Test Circuit I

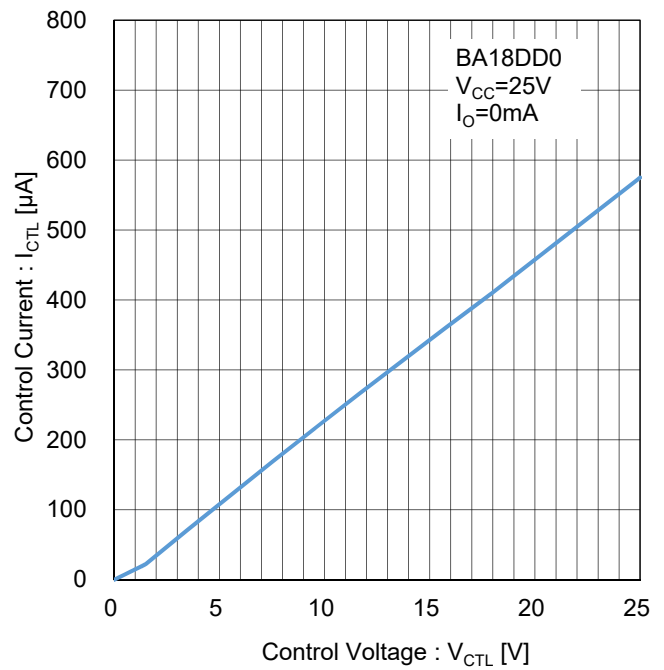


Figure 28. CTL Pin Current
Test Circuit J

BA18DD0 ($V_O=1.8V$)

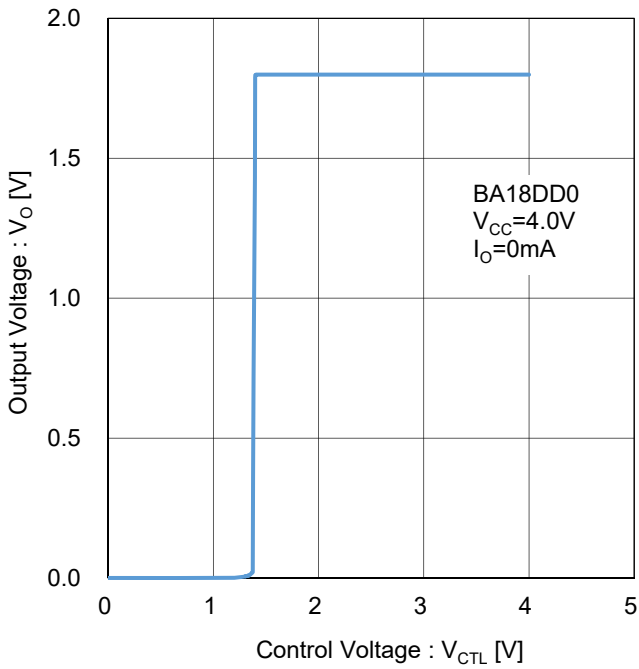


Figure 29. Output Voltage vs CTL Pin Voltage
Test Circuit K

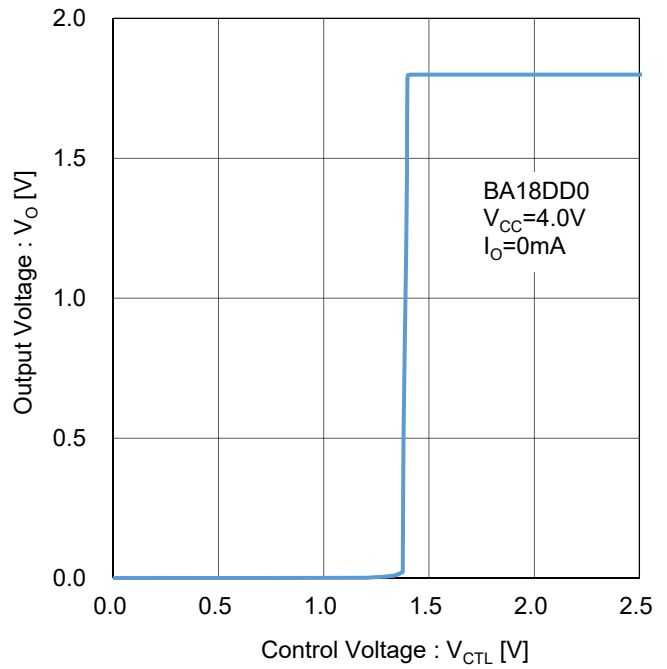


Figure 30. Output Voltage vs CTL Pin Voltage
Test Circuit K

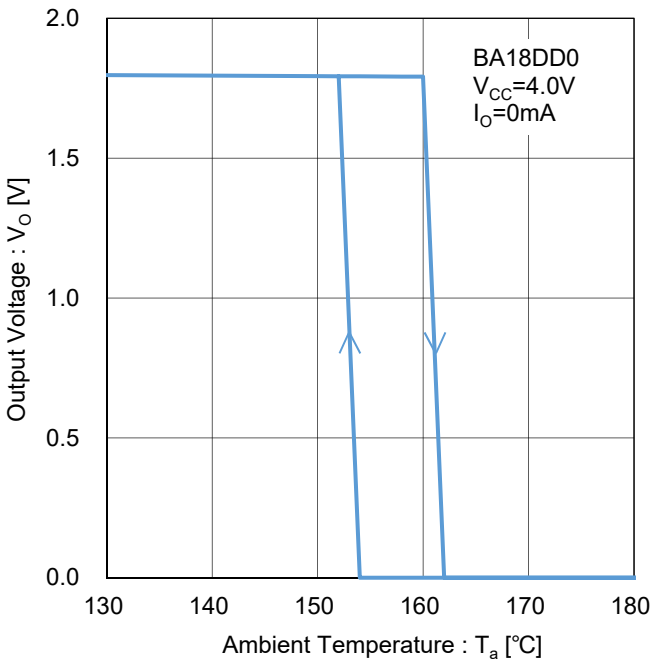


Figure 31. Thermal Shutdown
Test Circuit L

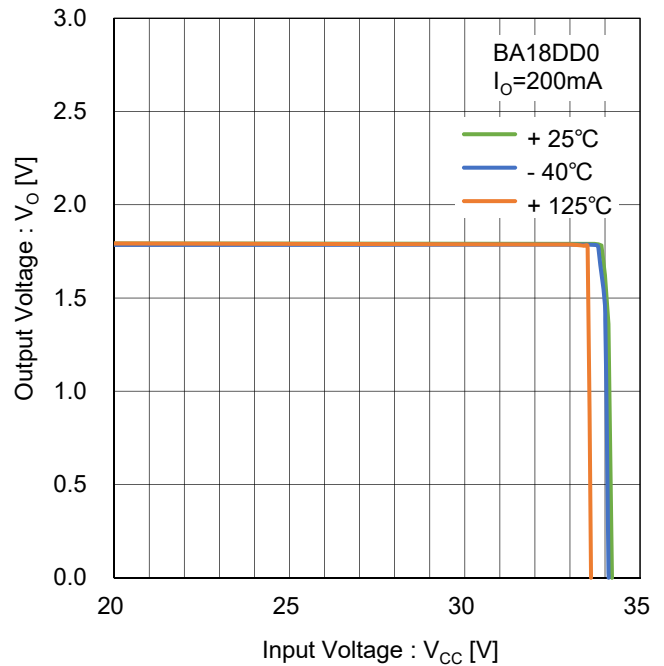


Figure 32. Overvoltage Protection
Test Circuit M

BA25DD0 ($V_o=2.5V$)

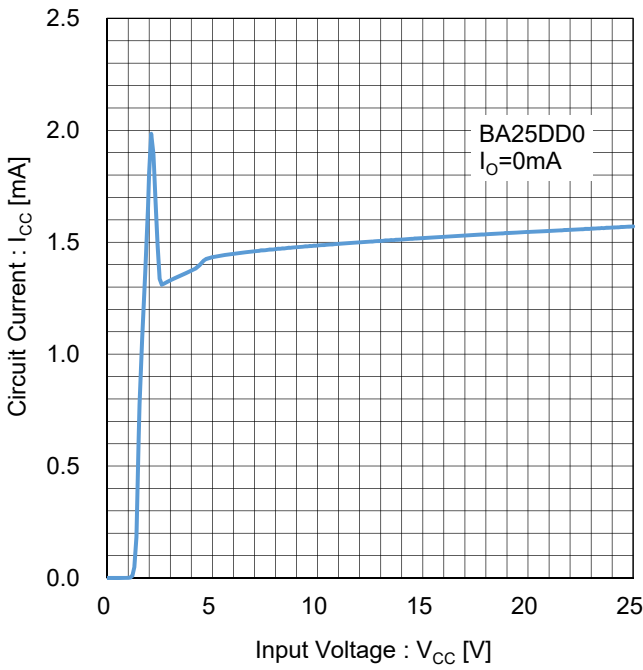


Figure 33. Circuit Current
Test Circuit A

Refer to the data of BA33DD0

Figure 34. Dropout Voltage vs Output Current
Test Circuit B

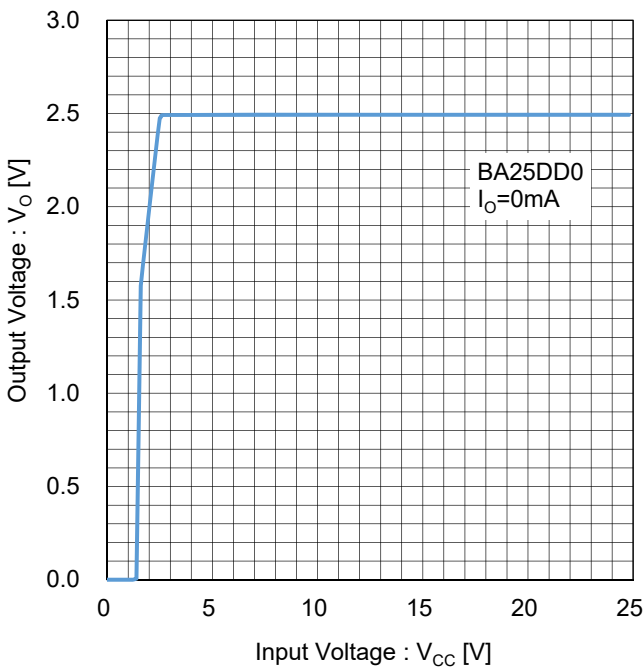


Figure 35. Output Voltage vs Input Voltage
($I_o=0mA$)
Test Circuit C

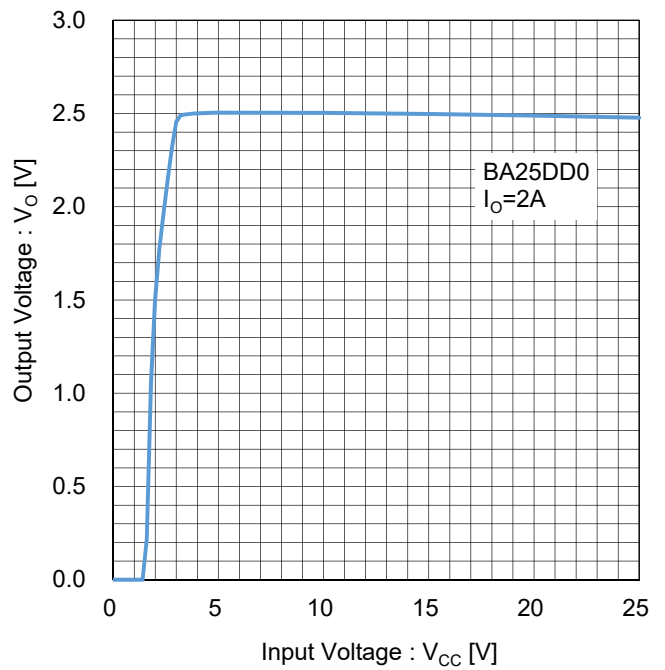


Figure 36. Output Voltage vs Input Voltage
($I_o=2A$)
Test Circuit C

BA25DD0 ($V_o=2.5V$)

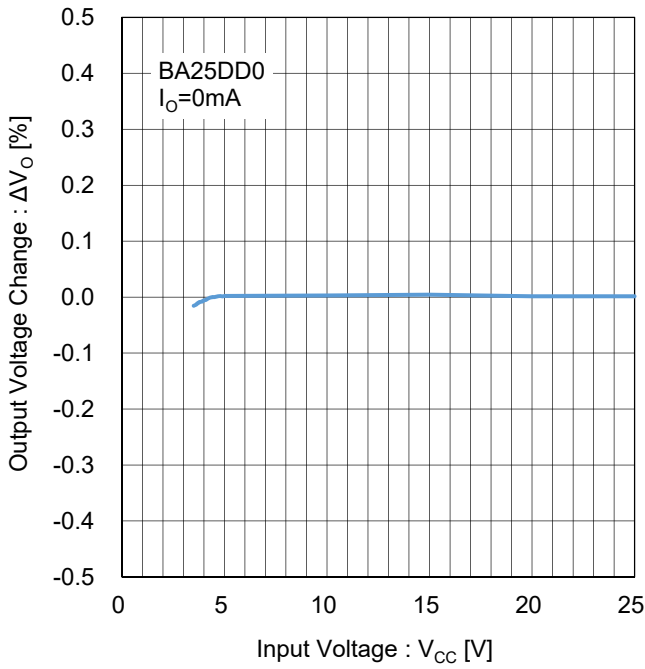


Figure 37. Line Regulation
($I_o=0mA$)
Test Circuit D

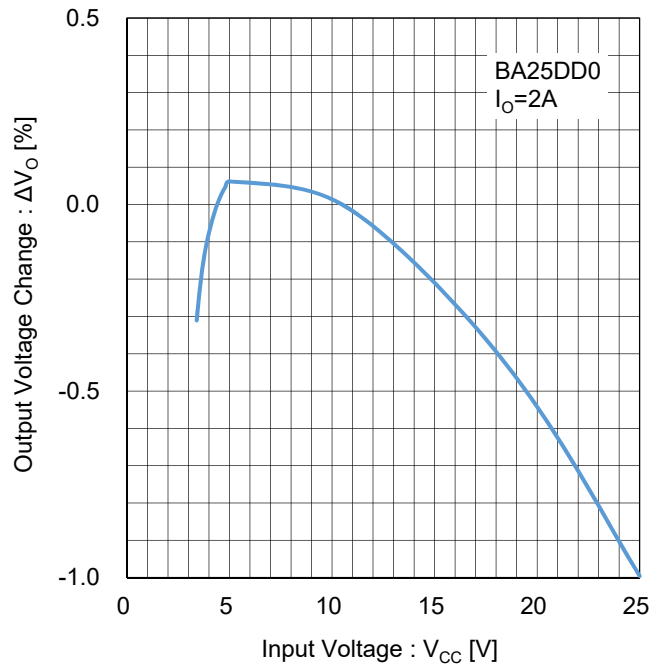


Figure 38. Line Regulation
($I_o=2A$)
Test Circuit D

Refer to the data of BA33DD0

Refer to the data of BA33DD0

Figure 39. Overcurrent Protection
Test Circuit E

Figure 40. Load Regulation
Test Circuit F

BA25DD0 ($V_o=2.5V$)

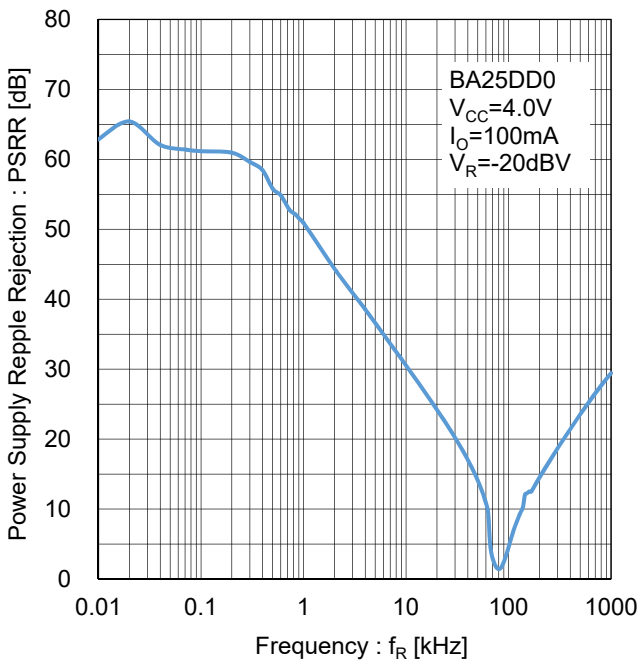


Figure 41. Ripple Rejection
Test Circuit G

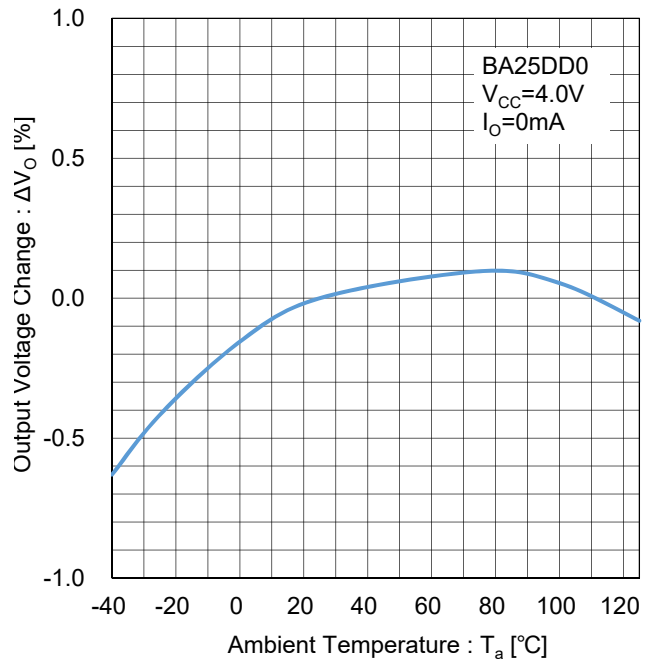


Figure 42. Output Voltage Temperature Stability
Test Circuit H

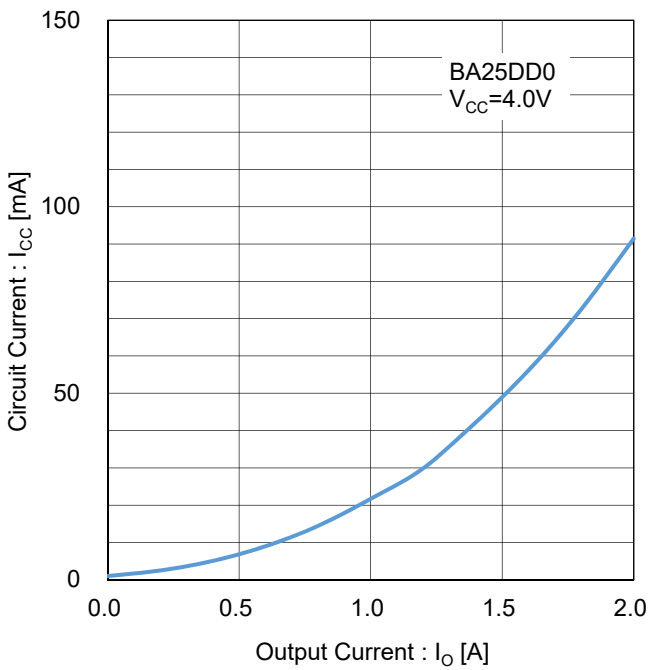


Figure 43. Circuit Current vs Output Current
Test Circuit I

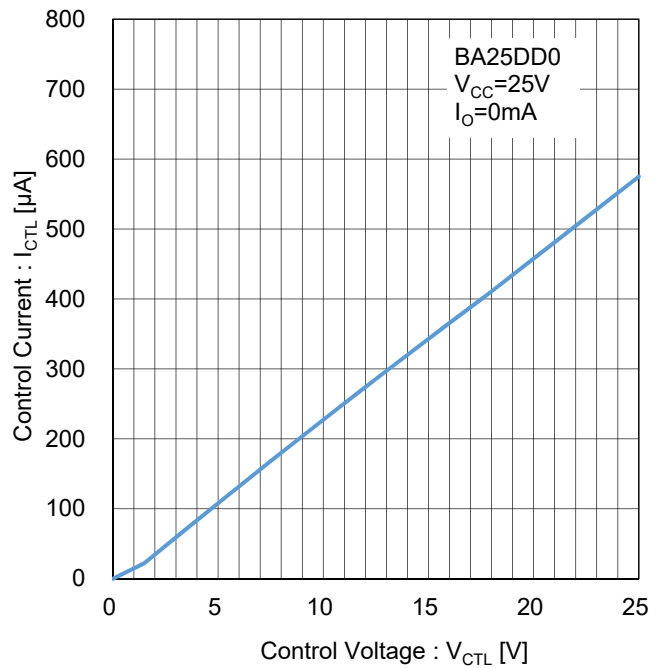


Figure 44. CTL Pin Current
Test Circuit J

BA25DD0 ($V_O=2.5V$)

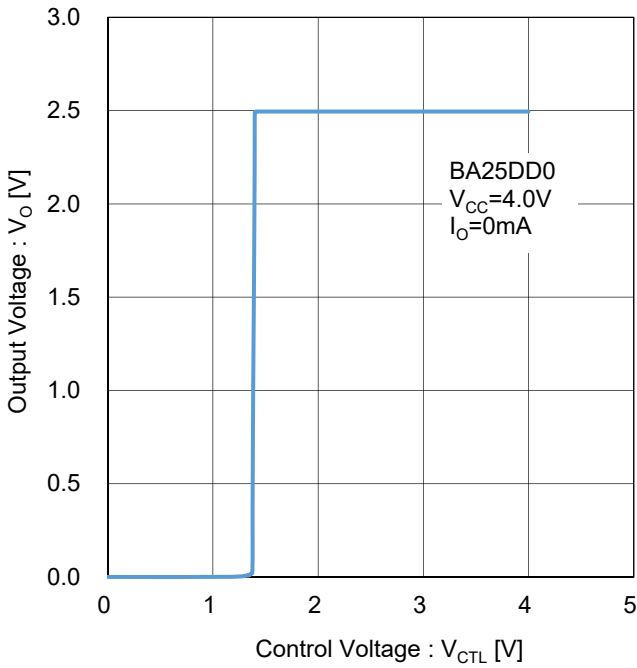


Figure 45. Output Voltage vs CTL Pin Voltage
Test Circuit K

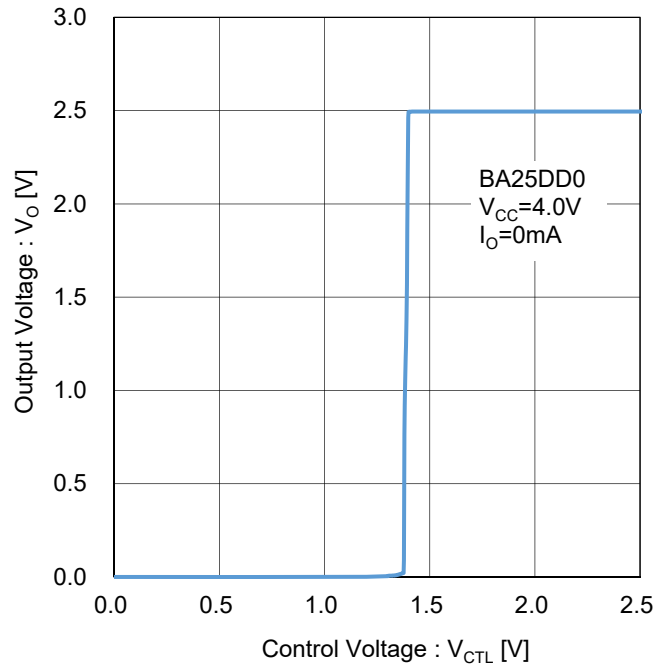


Figure 46. Output Voltage vs CTL Pin Voltage
Test Circuit K

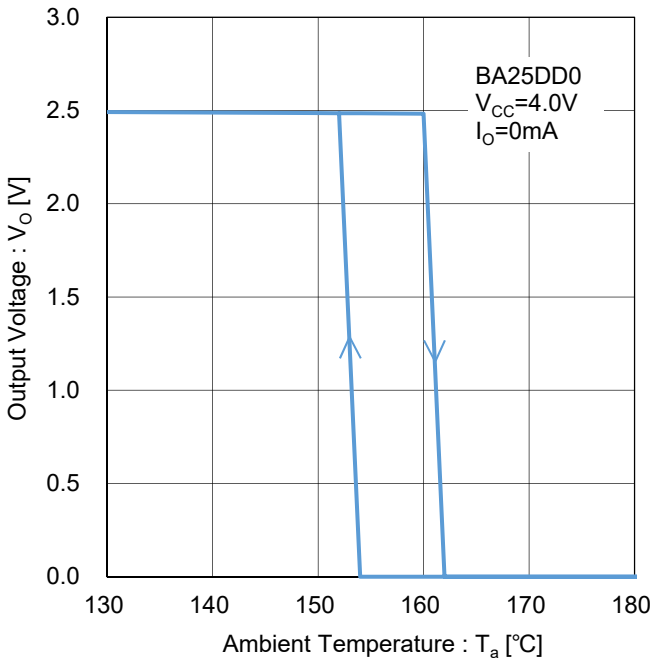


Figure 47. Thermal Shutdown
Test Circuit L

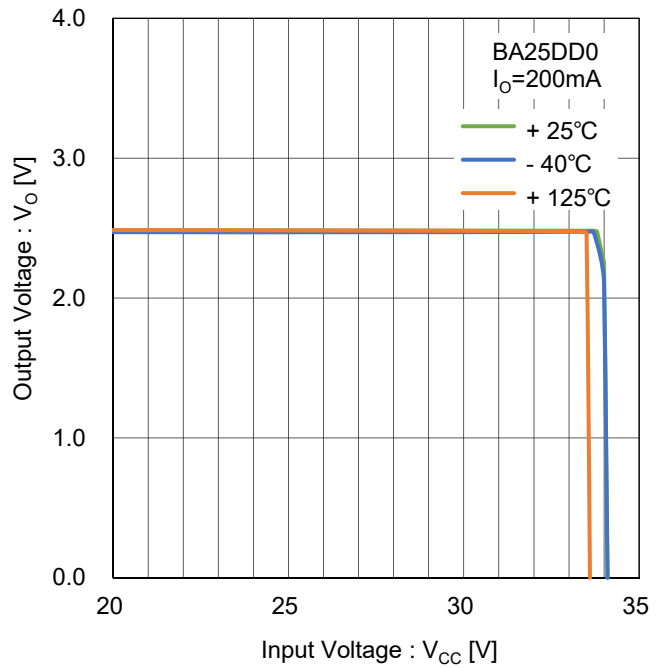


Figure 48. Overvoltage Protection
Test Circuit M

BA30DD0 ($V_o=3.0V$)

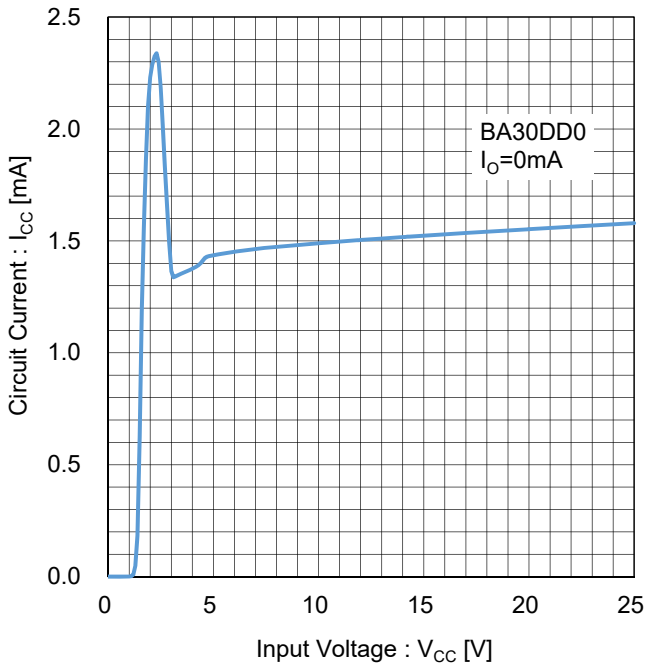


Figure 49. Circuit Current
Test Circuit A

Refer to the data of BA33DD0

Figure 50. Dropout Voltage vs Output Current
Test Circuit B

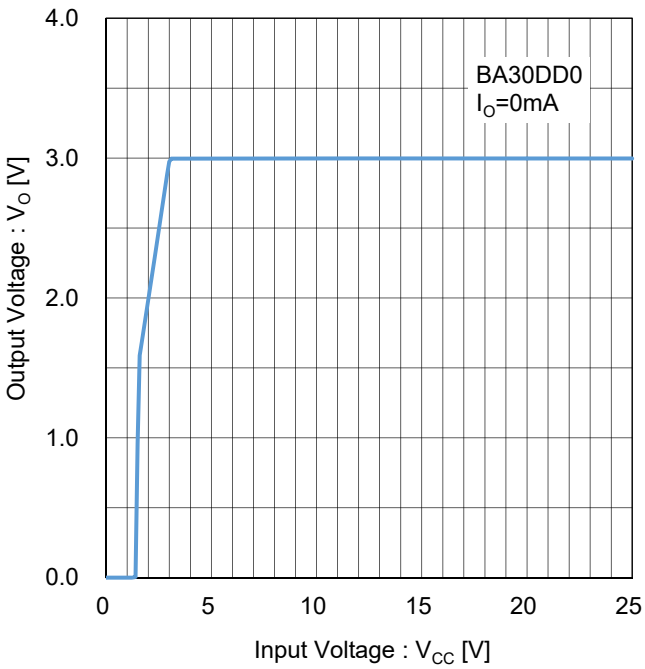


Figure 51. Output Voltage vs Input Voltage
($I_o=0mA$)
Test Circuit C

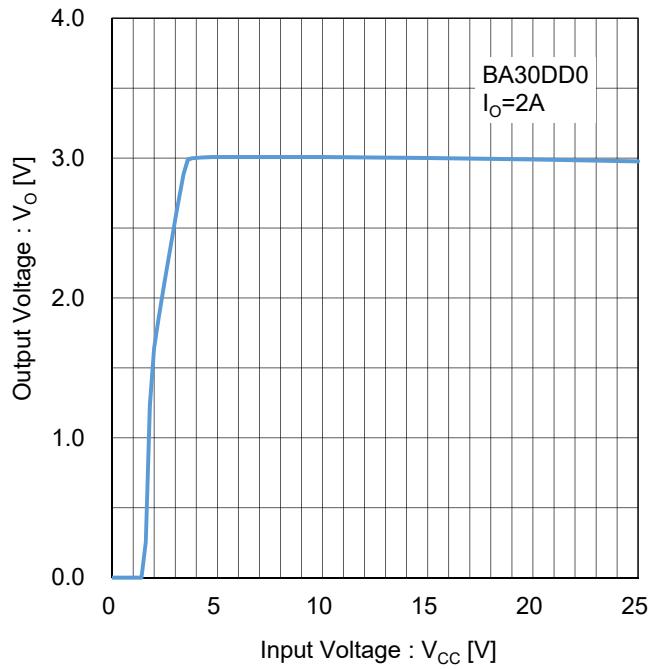


Figure 52. Output Voltage vs Input Voltage
($I_o=2A$)
Test Circuit C

BA30DD0 (V_O=3.0V)

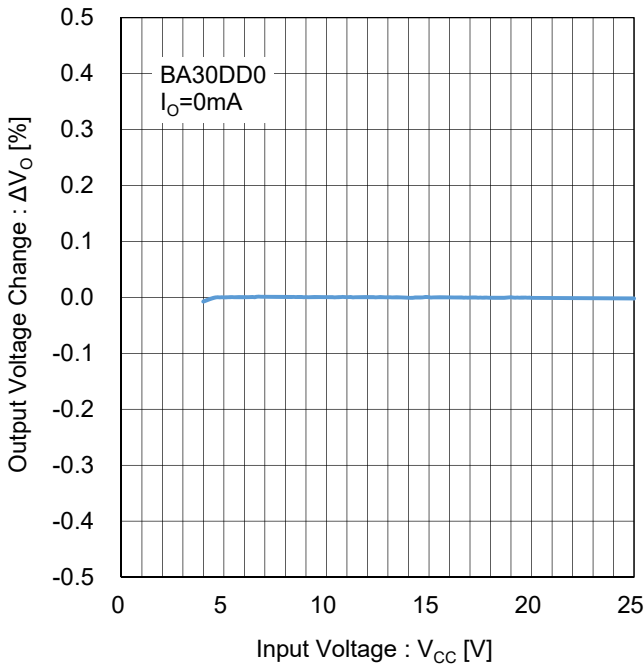


Figure 53. Line Regulation
(I_o=0mA)
Test Circuit D

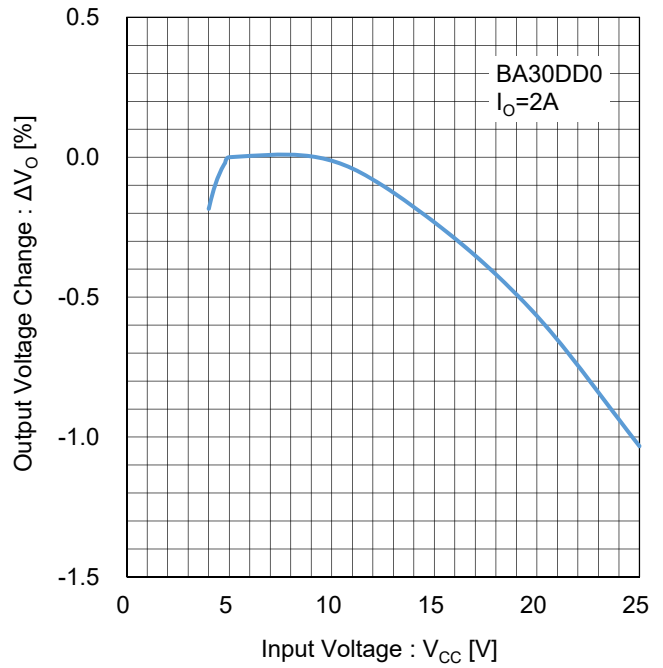


Figure 54. Line Regulation
(I_o=2A)
Test Circuit D

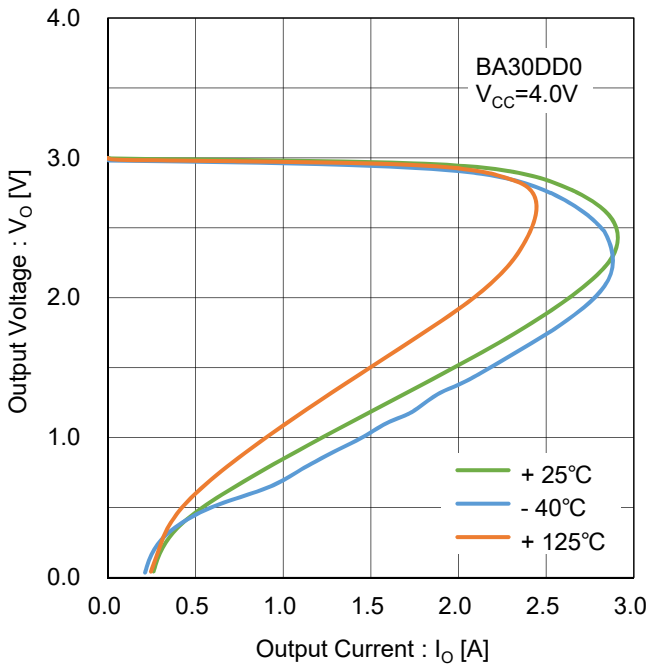


Figure 55. Overcurrent Protection
Test Circuit E

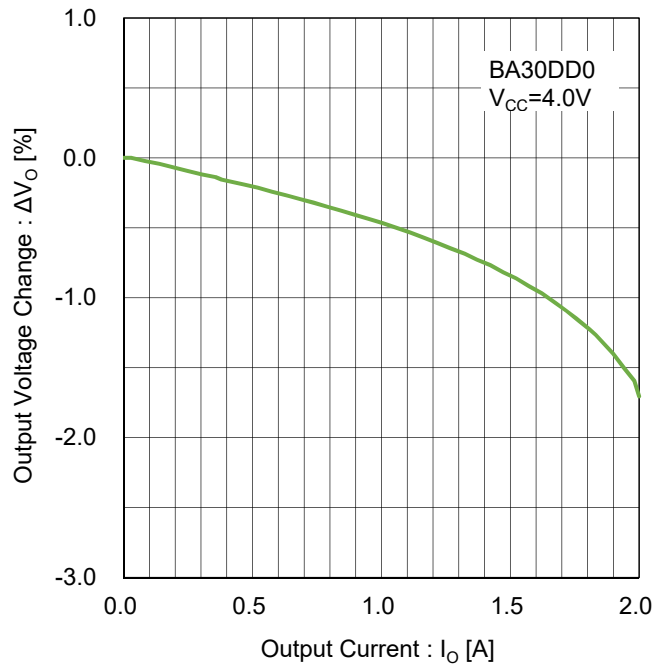


Figure 56. Load Regulation
Test Circuit F

BA30DD0 ($V_O=3.0V$)

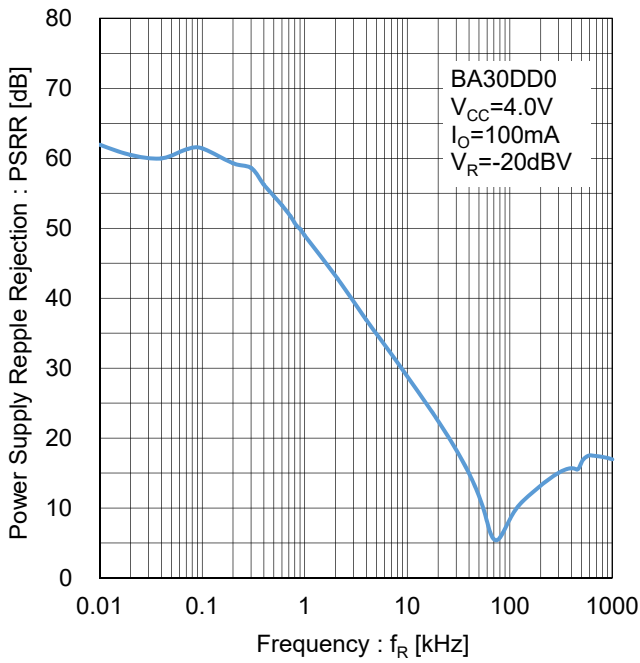


Figure 57. Ripple Rejection
Test Circuit G

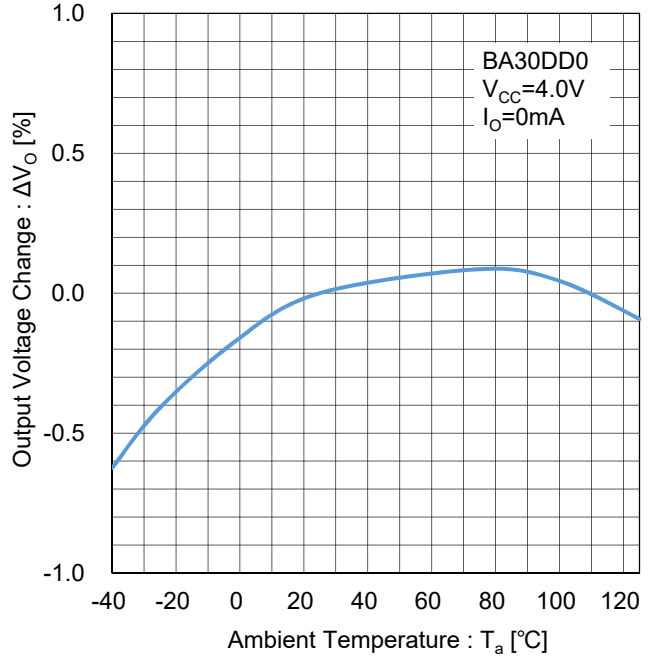


Figure 58. Output Voltage Temperature Stability
Test Circuit H

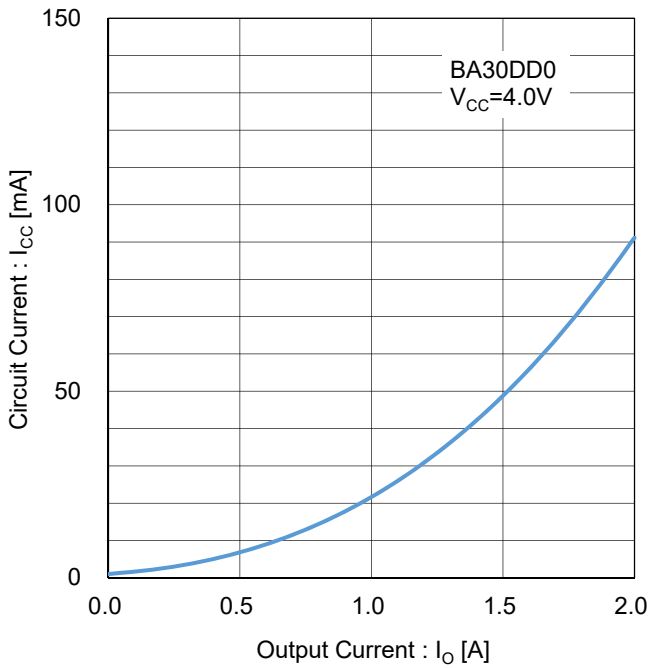


Figure 59. Circuit Current vs Output Current
Test Circuit I

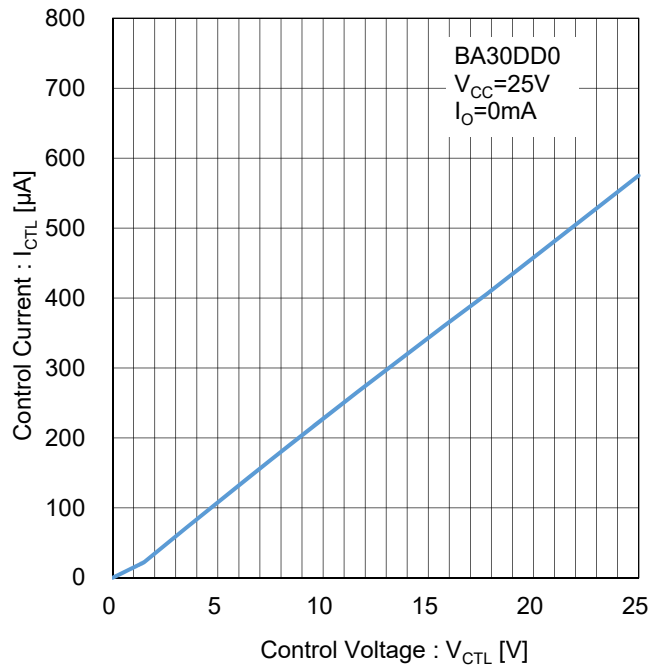


Figure 60. CTL Pin Current
Test Circuit J

BA30DD0 ($V_o=3.0V$)

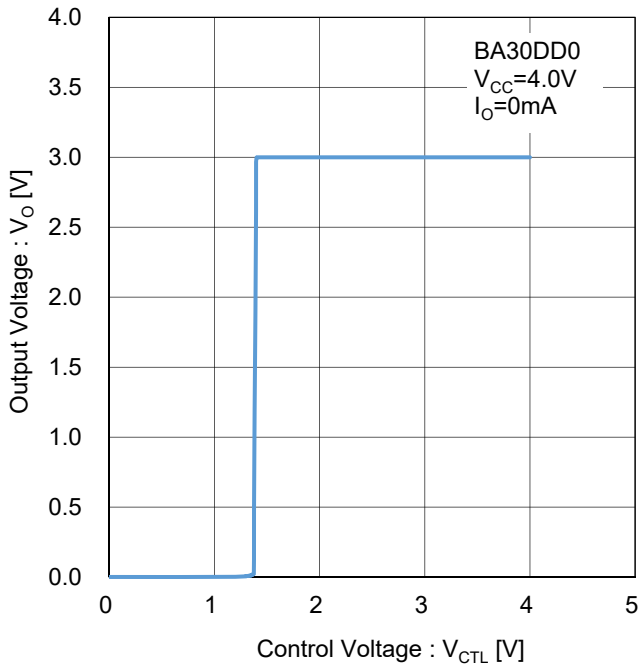


Figure 61. Output Voltage vs CTL Pin Voltage
 Test Circuit K

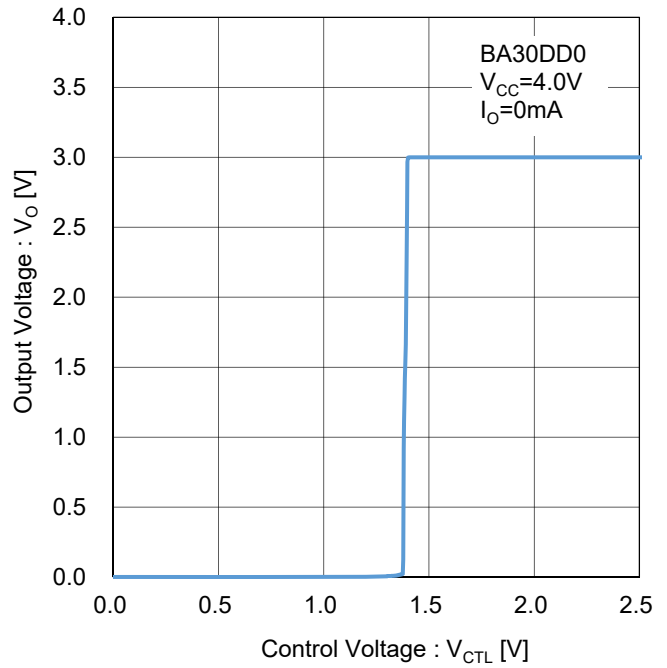


Figure 62. Output Voltage vs CTL Pin Voltage
 Test Circuit K

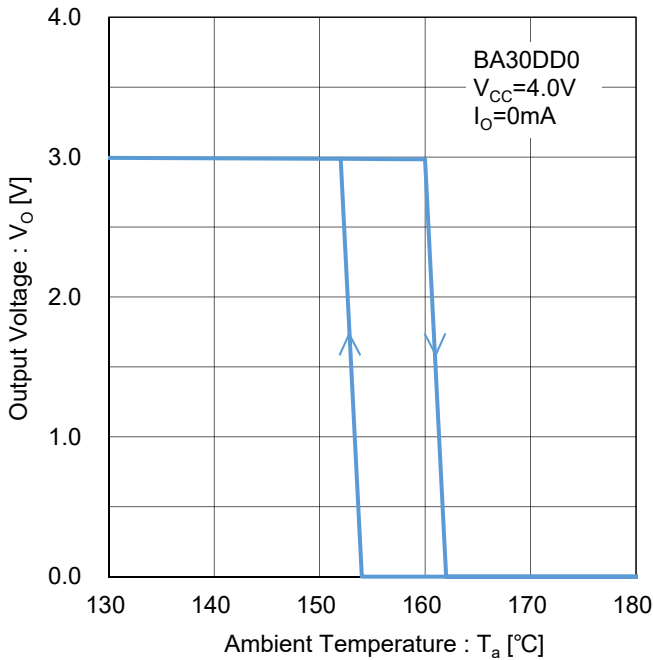


Figure 63. Thermal Shutdown
 Test Circuit L

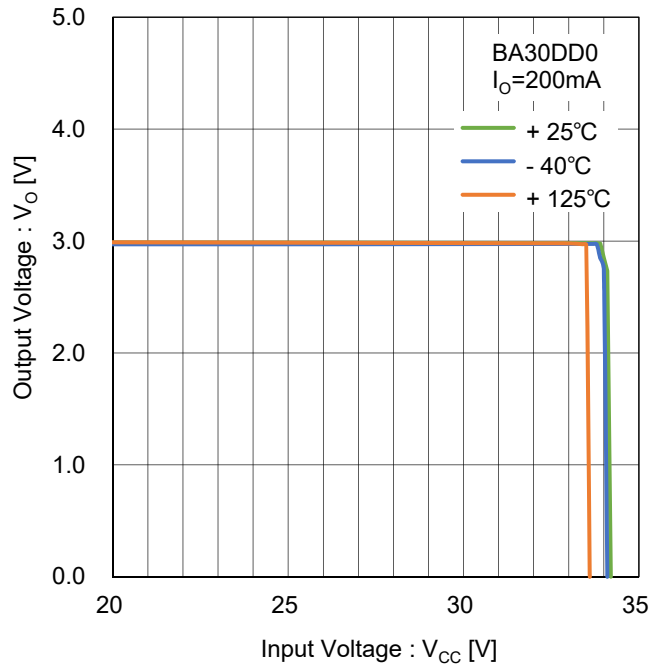


Figure 64. Overvoltage Protection
 Test Circuit M

BA33DD0 ($V_o=3.3V$)

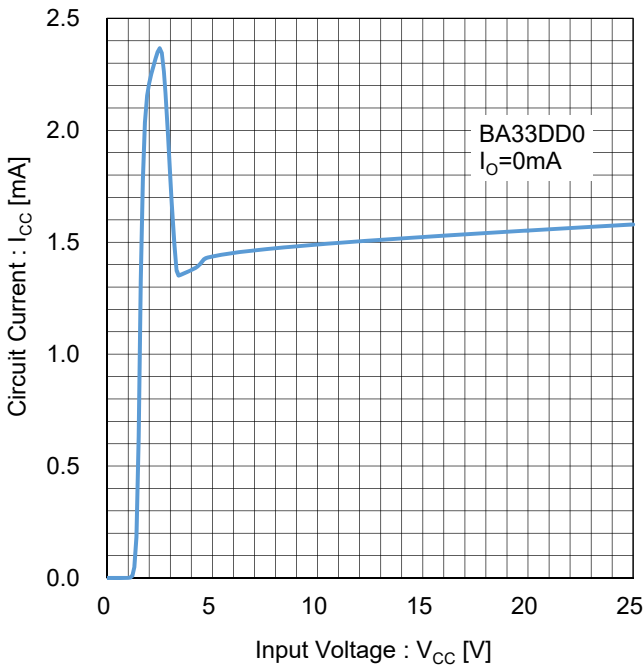


Figure 65. Circuit Current
Test Circuit A

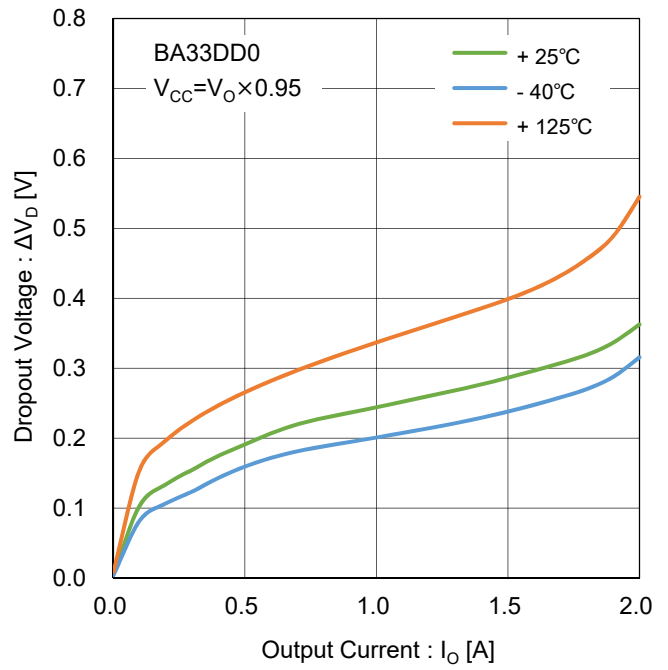


Figure 66. Dropout Voltage vs Output Current
Test Circuit B

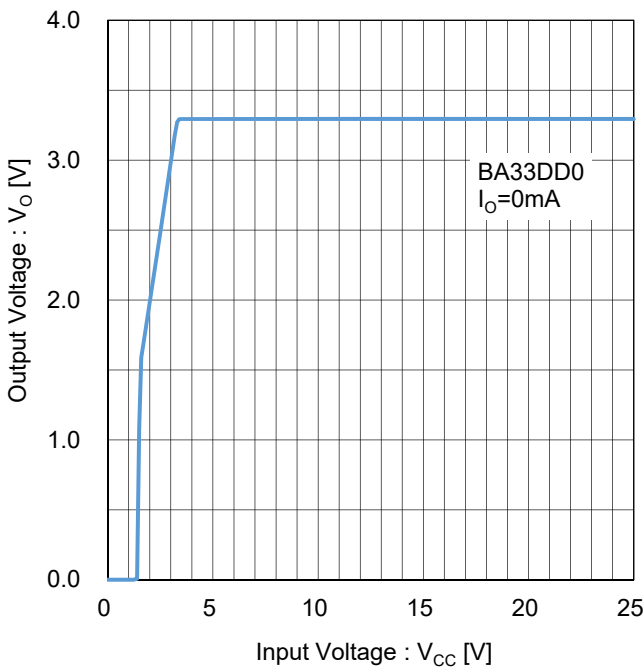


Figure 67. Output Voltage vs Input Voltage
($I_o=0mA$)
Test Circuit C

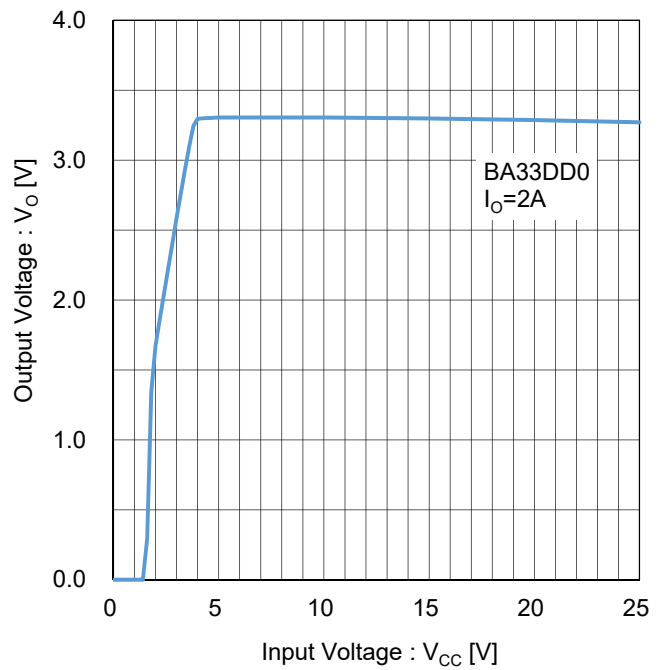


Figure 68. Output Voltage vs Input Voltage
($I_o=2A$)
Test Circuit C

BA33DD0 ($V_o=3.3V$)

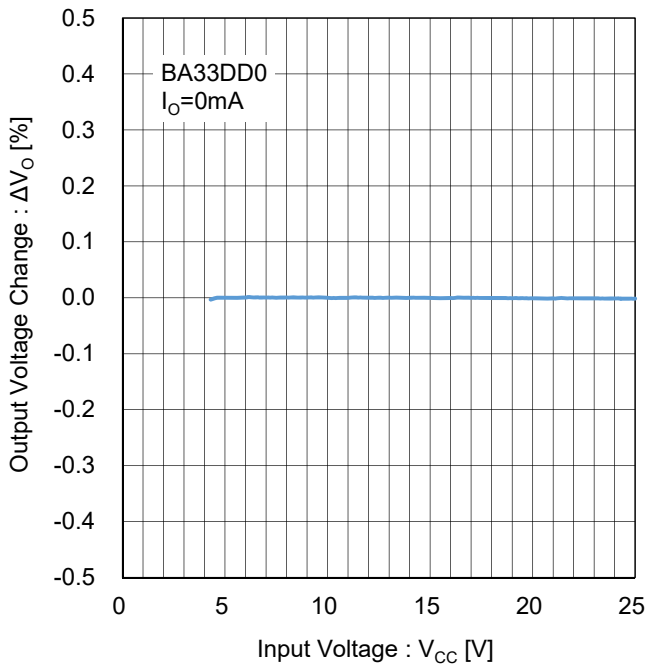


Figure 69. Line Regulation
($I_o=0mA$)
Test Circuit D

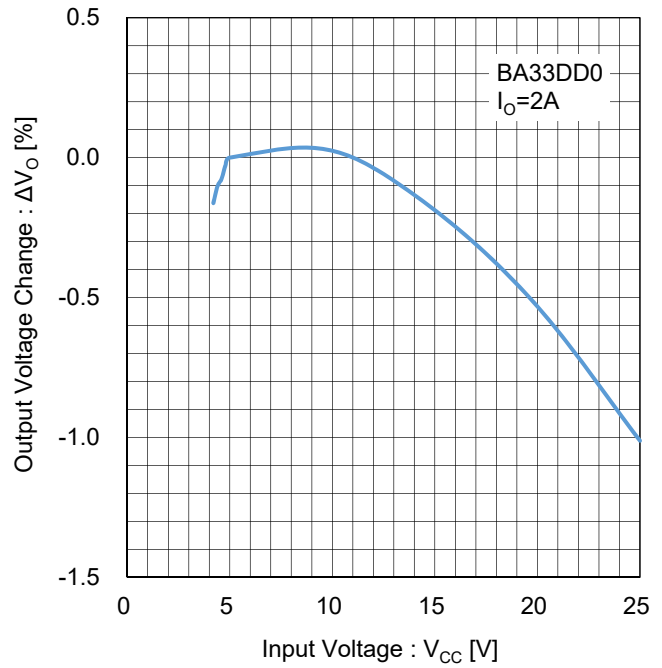


Figure 70. Line Regulation
($I_o=2A$)
Test Circuit D

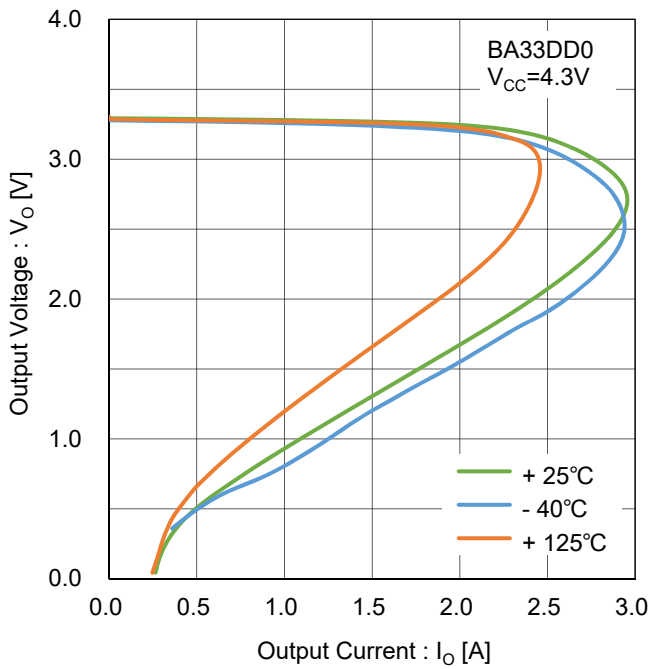


Figure 71. Overcurrent Protection
Test Circuit E

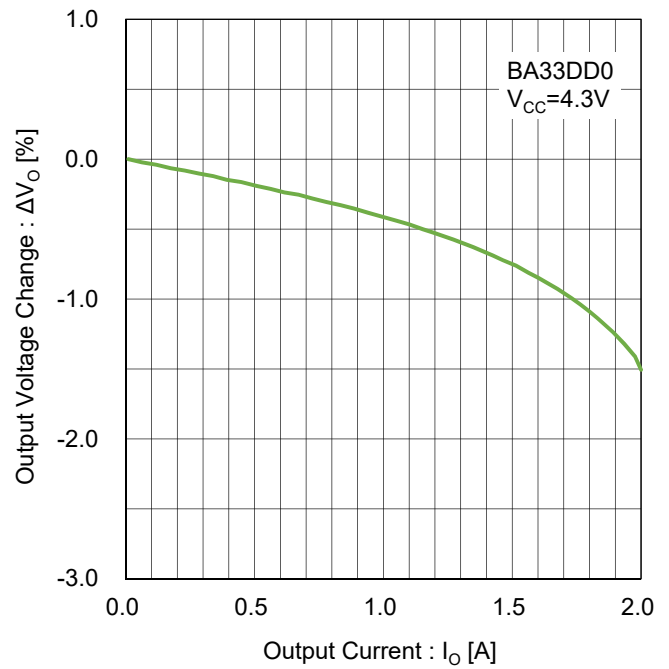


Figure 72. Load Regulation
Test Circuit F

BA33DD0 ($V_o=3.3V$)

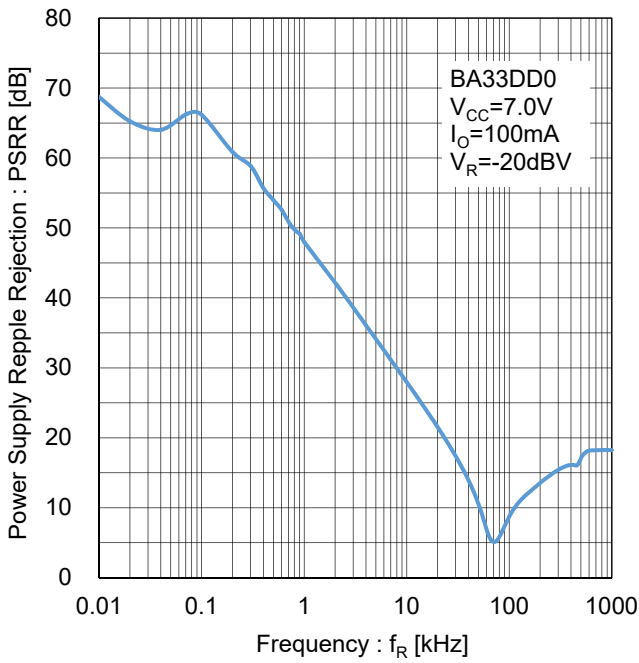


Figure 73. Ripple Rejection Test Circuit G

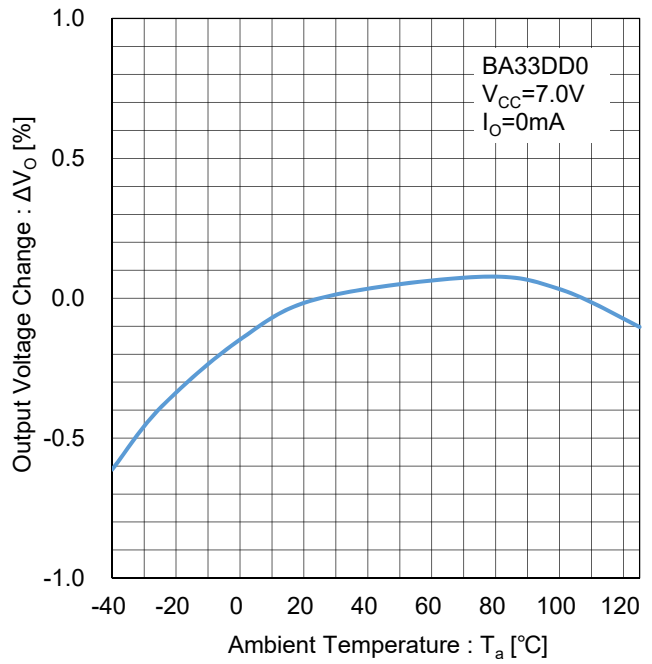


Figure 74. Output Voltage Temperature Stability Test Circuit H

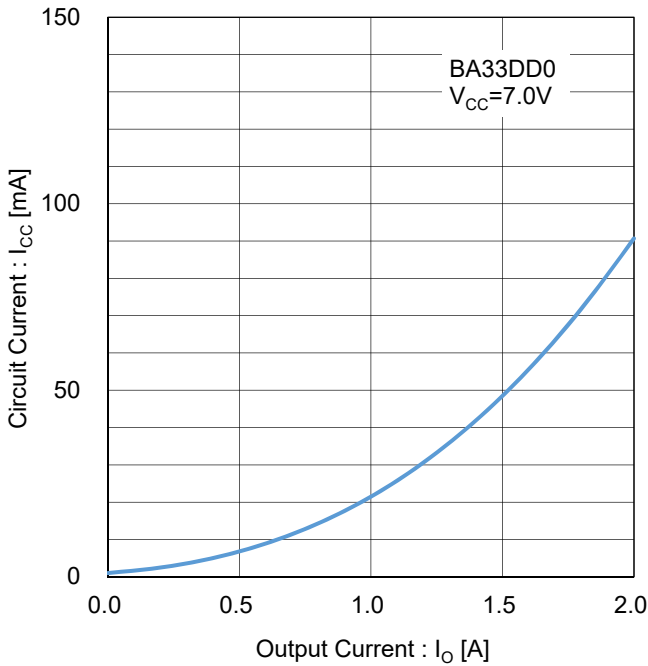


Figure 75. Circuit Current vs Output Current Test Circuit I

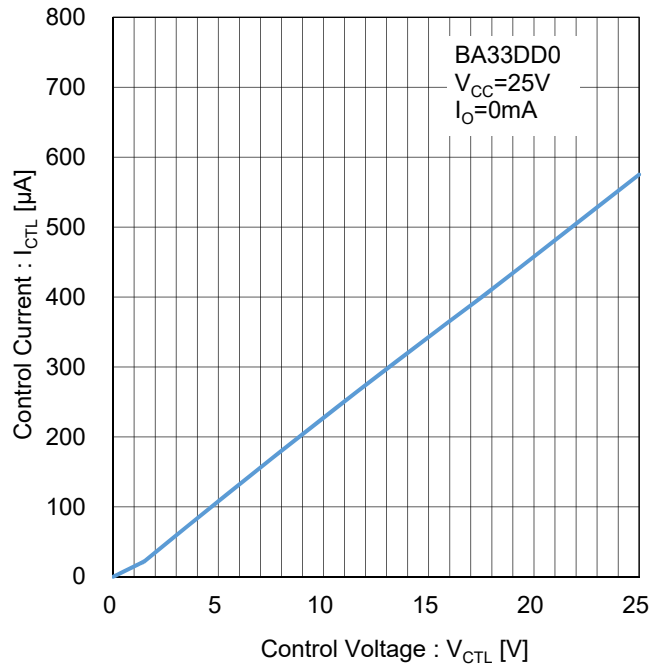


Figure 76. CTL Pin Current Test Circuit J

BA33DD0 ($V_O=3.3V$)

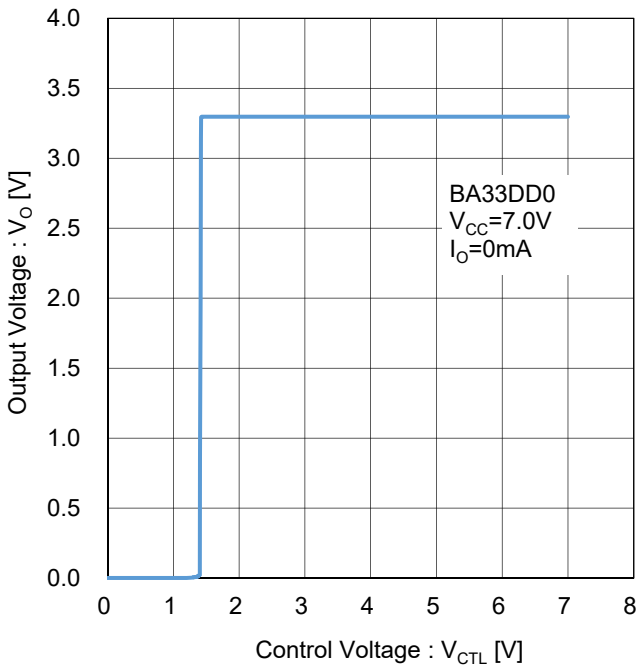


Figure 77. Output Voltage vs CTL Pin Voltage
Test Circuit K

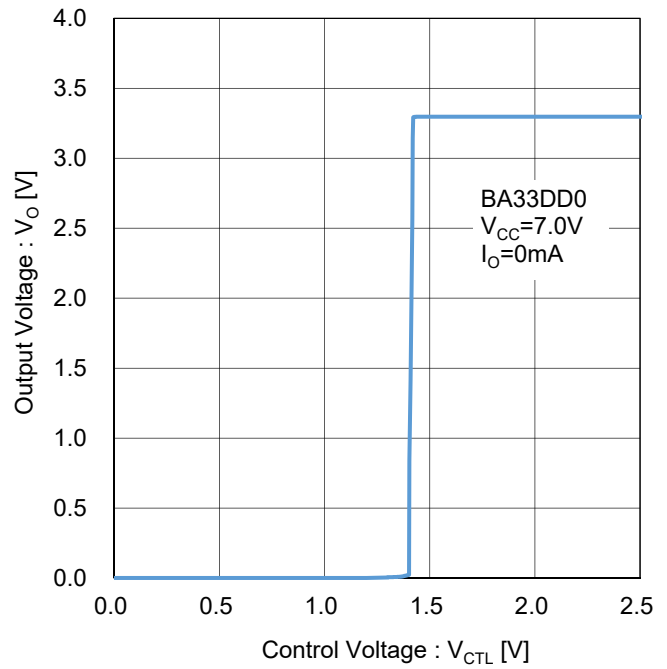


Figure 78. Output Voltage vs CTL Pin Voltage
Test Circuit K

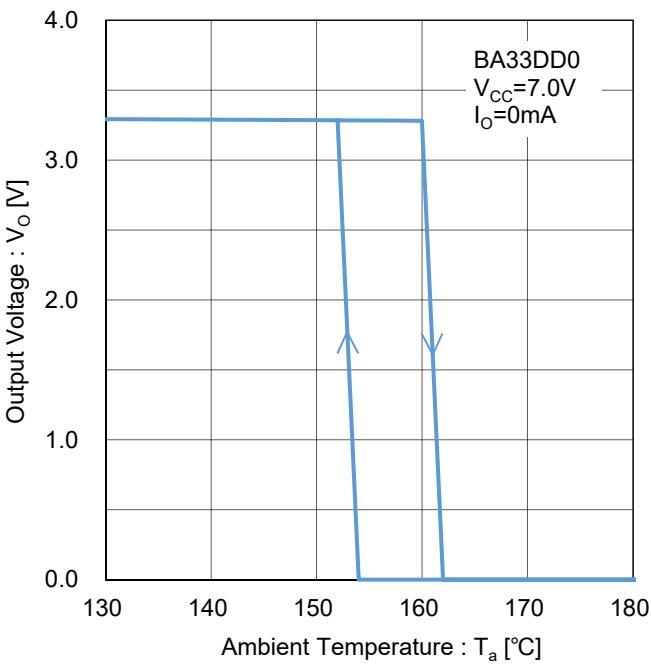


Figure 79. Thermal Shutdown
Test Circuit L

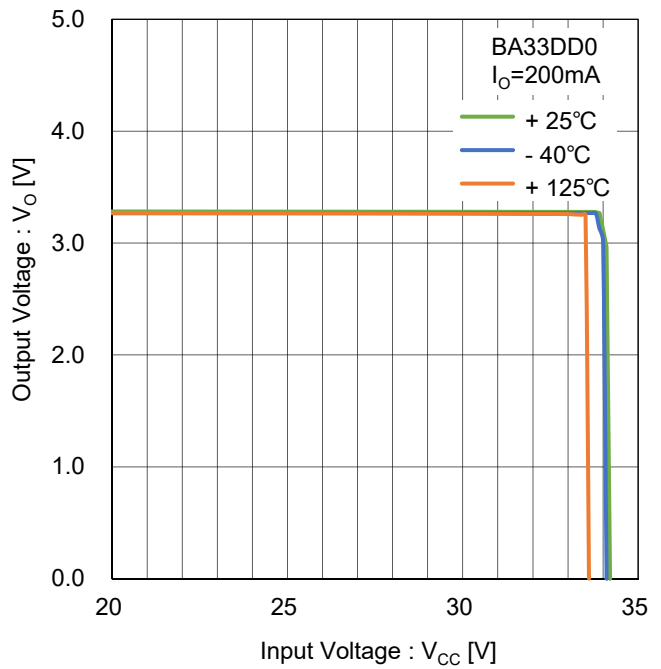


Figure 80. Overvoltage Protection
Test Circuit M

BA50DD0 ($V_O=5.0V$)

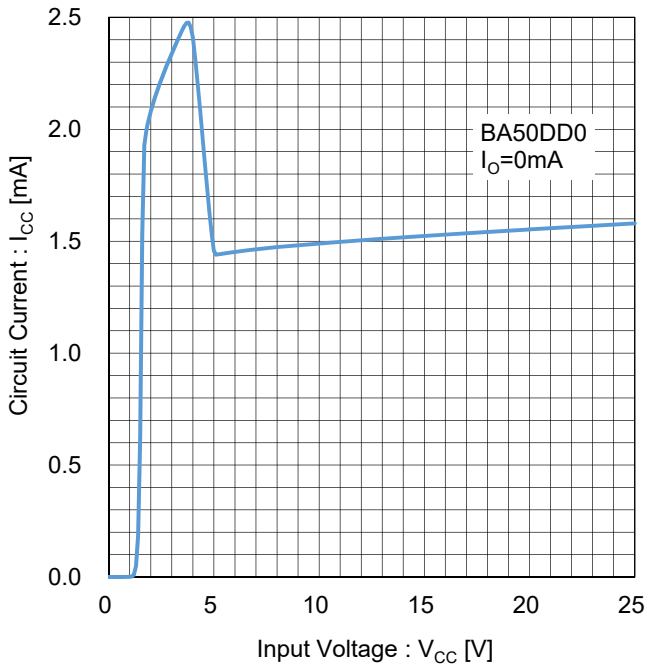


Figure 81. Circuit Current
Test Circuit A

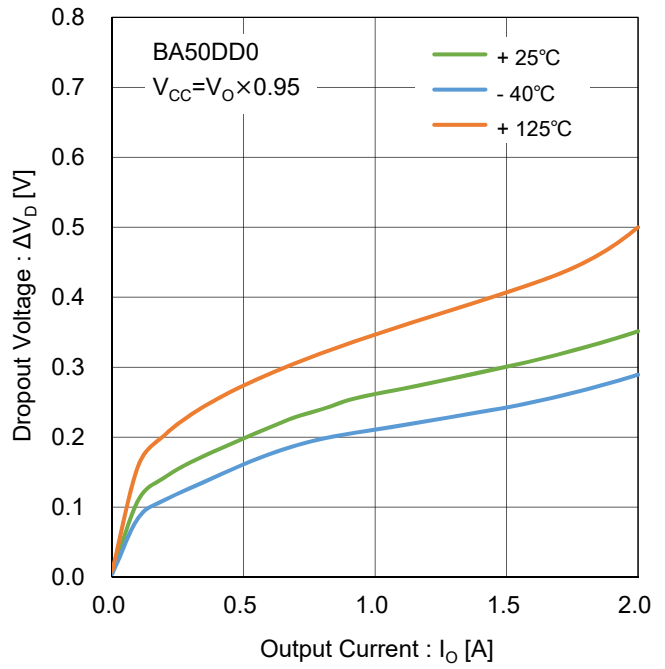


Figure 82. Dropout Voltage vs Output Current
Test Circuit B

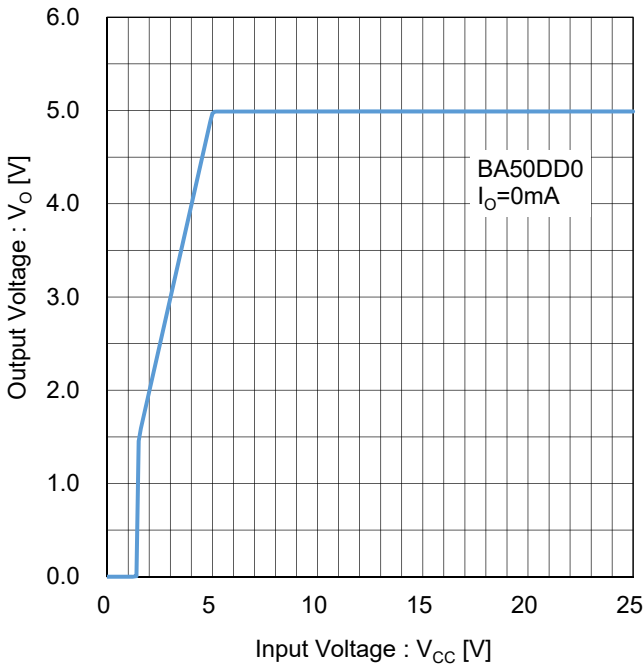


Figure 83. Output Voltage vs Input Voltage
($I_o=0mA$)
Test Circuit C

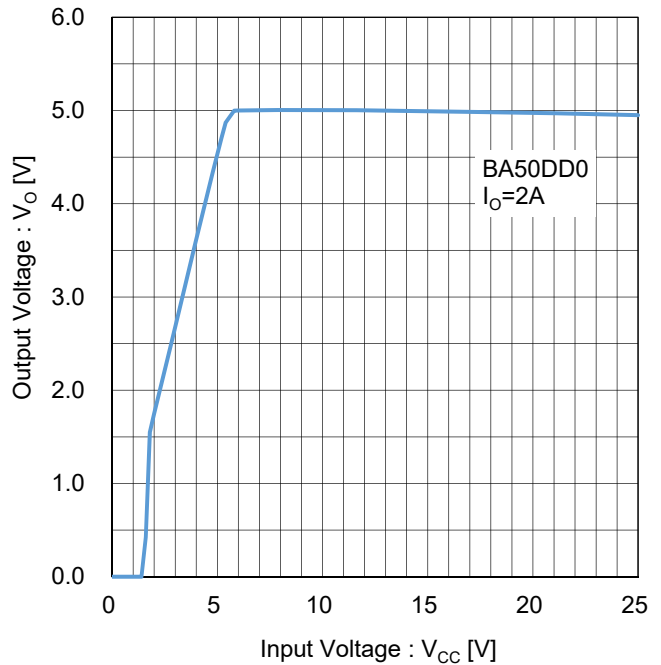


Figure 84. Output Voltage vs Input Voltage
($I_o=2A$)
Test Circuit C

BA50DD0 ($V_O=5.0V$)

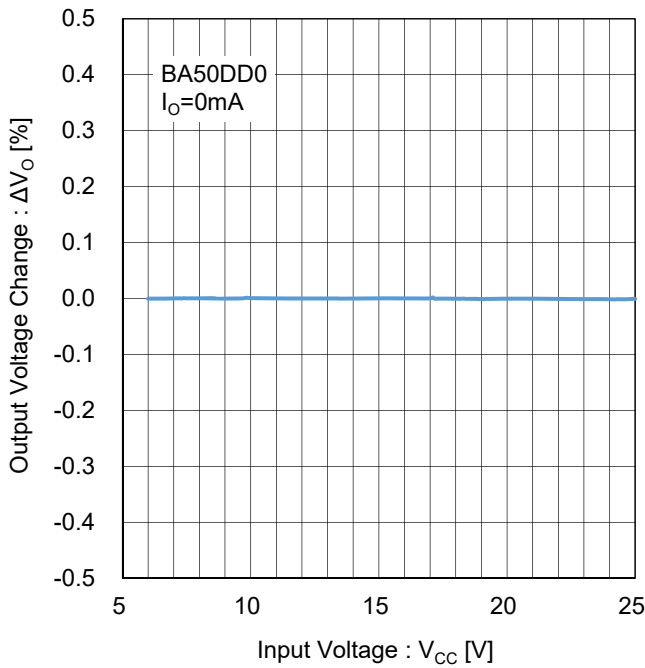


Figure 85. Line Regulation ($I_o=0mA$)
Test Circuit D

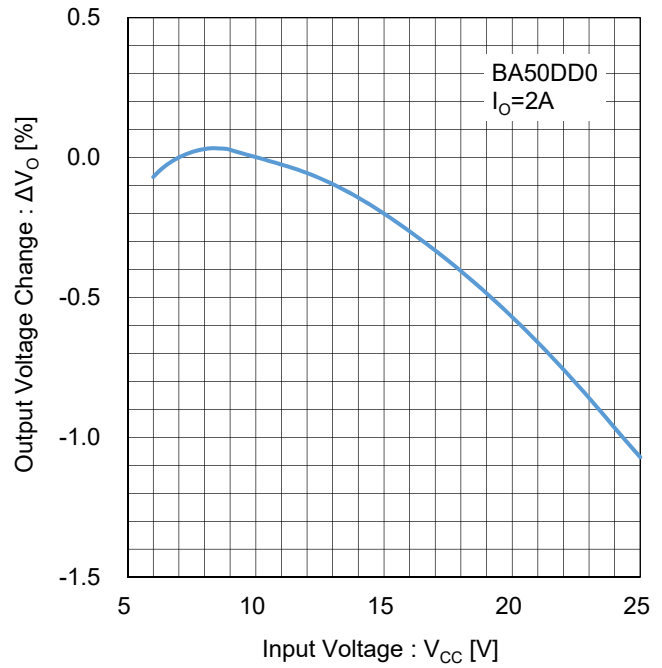


Figure 86. Line Regulation ($I_o=2A$)
Test Circuit D

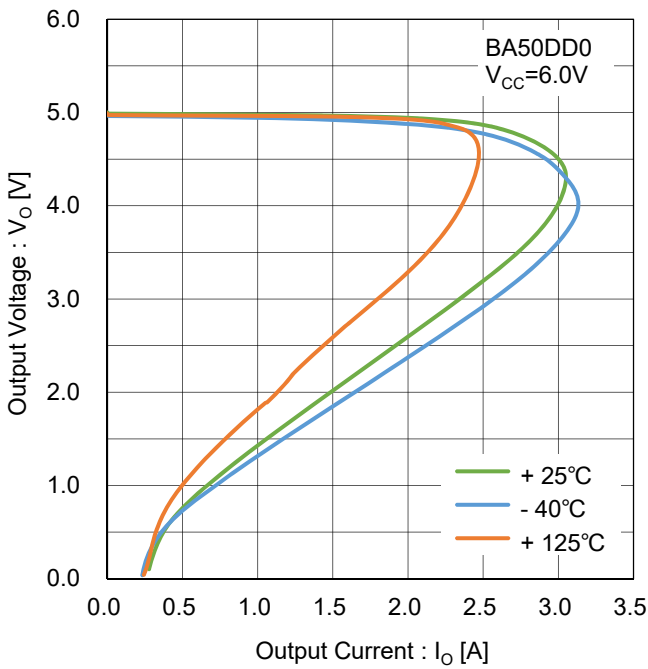


Figure 87. Overcurrent Protection
Test Circuit E

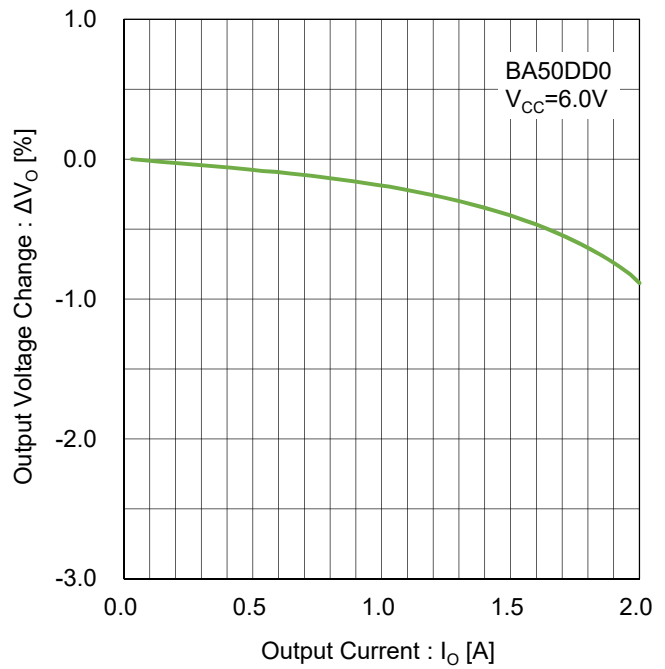


Figure 88. Load Regulation
Test Circuit F

BA50DD0 ($V_O=5.0V$)

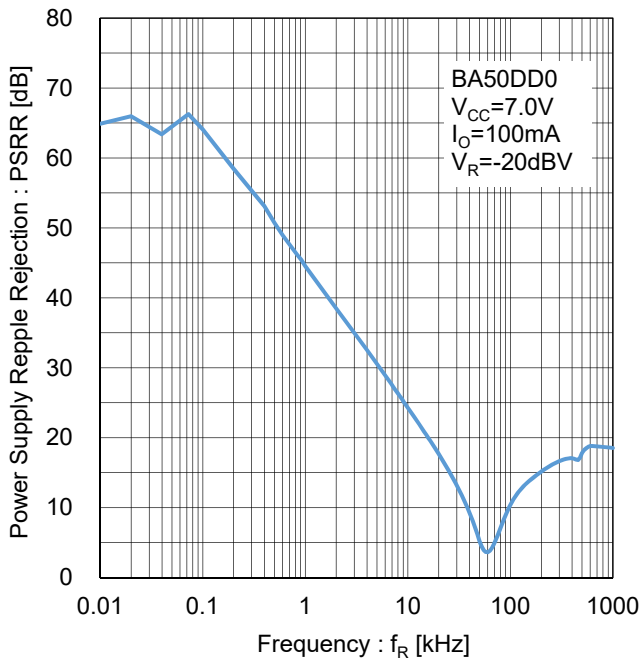


Figure 89. Ripple Rejection
Test Circuit G

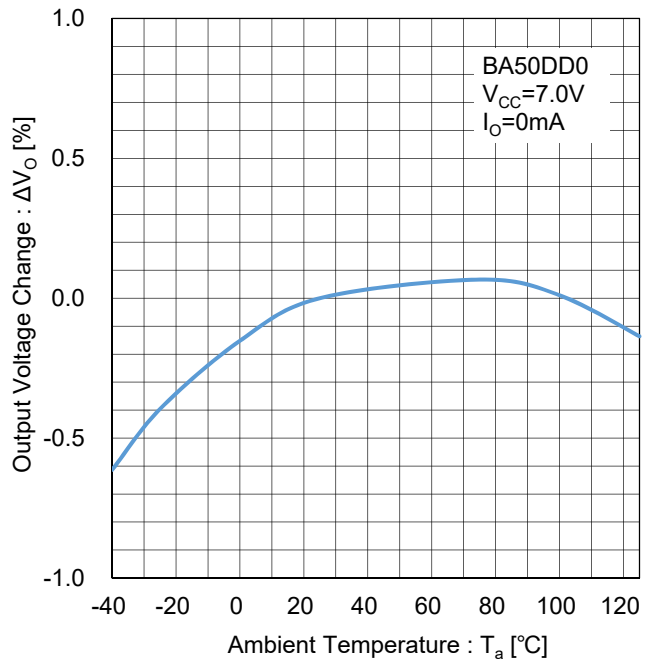


Figure 90. Output Voltage Temperature Stability
Test Circuit H

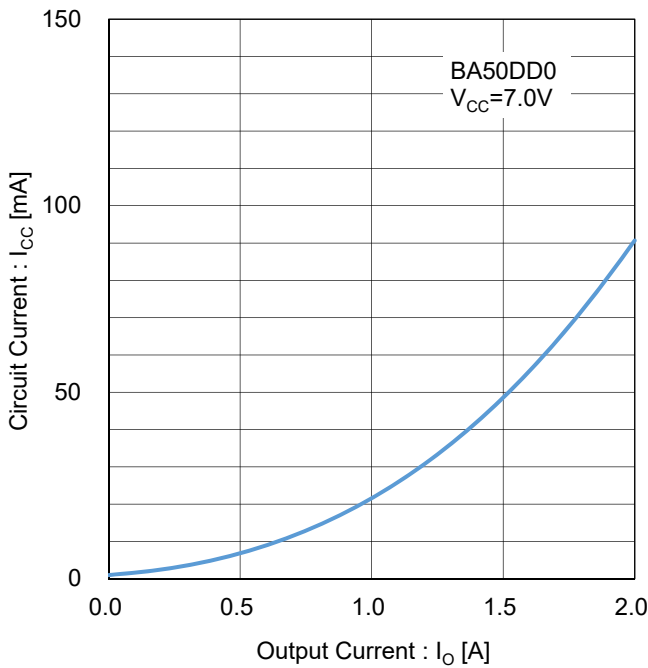


Figure 91. Circuit Current vs Output Current
Test Circuit I

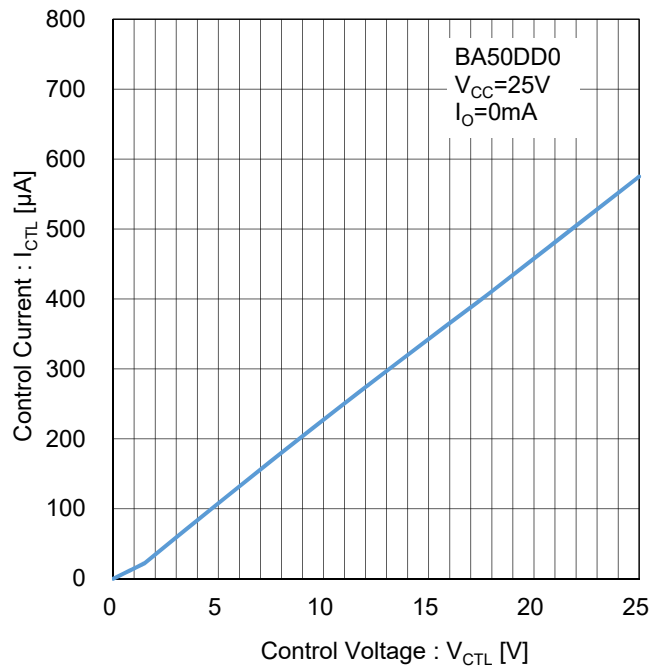


Figure 92. CTL Pin Current
Test Circuit J

BA50DD0 ($V_O=5.0V$)

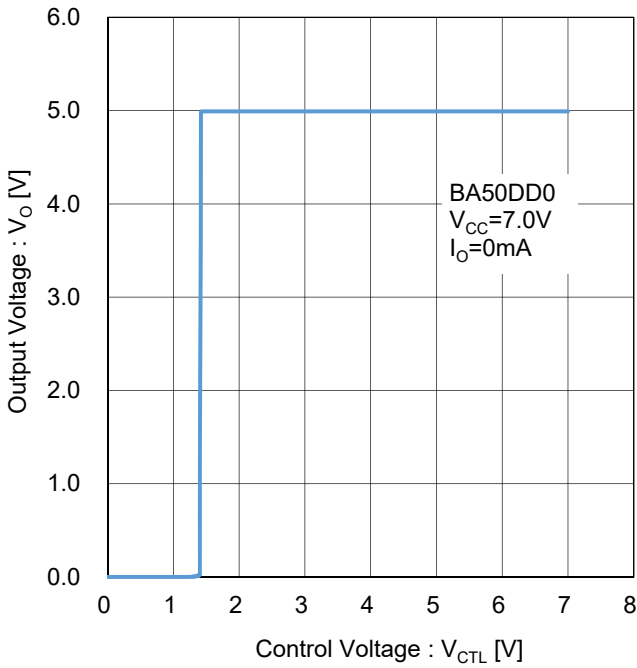


Figure 93. Output Voltage vs CTL Pin Voltage
 Test Circuit K

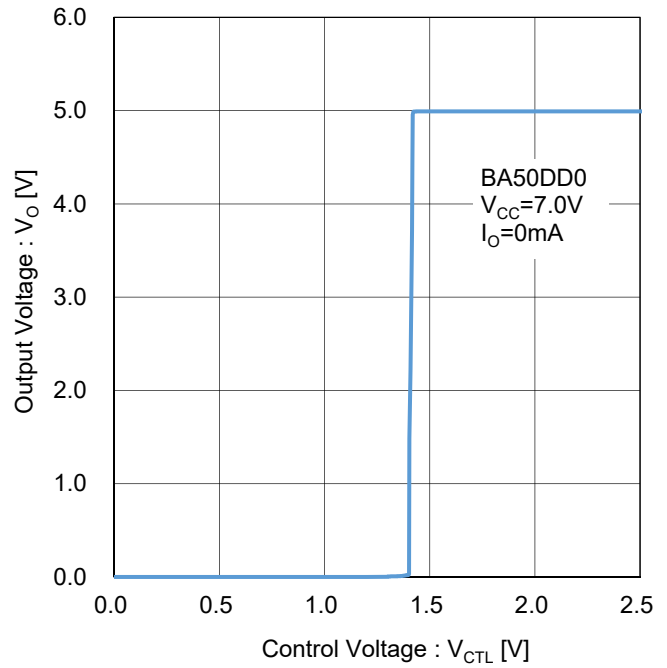


Figure 94. Output Voltage vs CTL Pin Voltage
 Test Circuit K

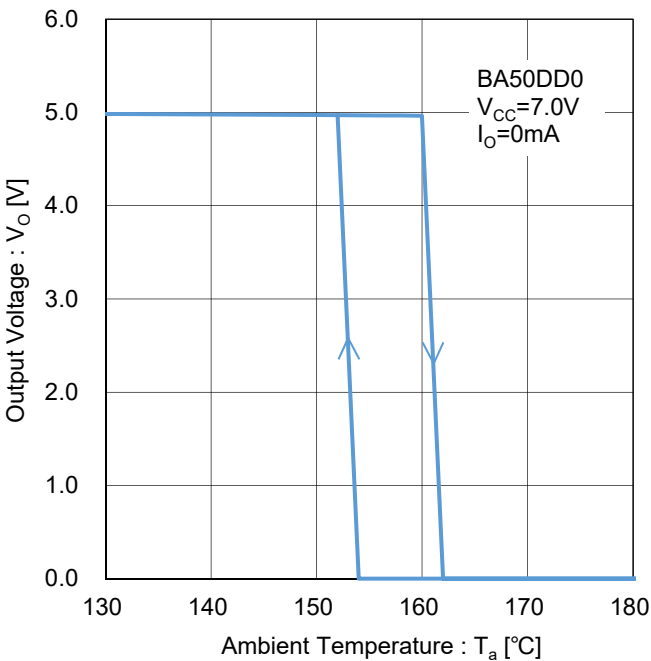


Figure 95. Thermal Shutdown
 Test Circuit L

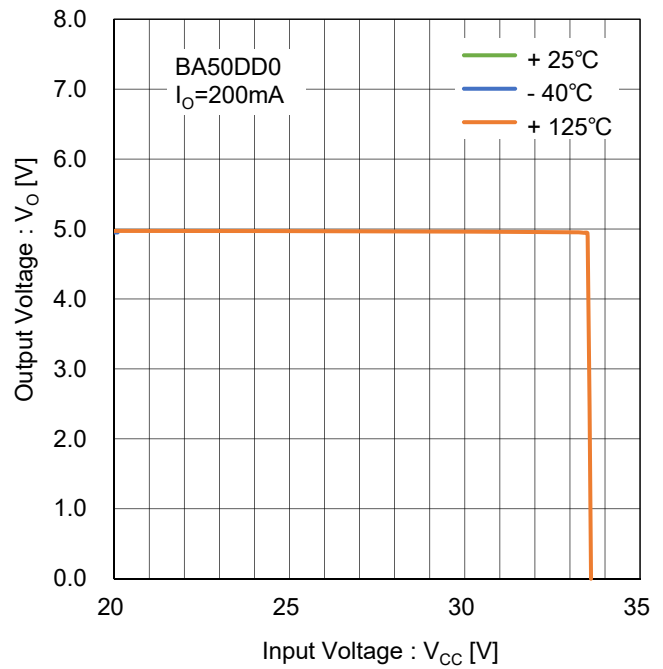


Figure 96. Overvoltage Protection
 Test Circuit M

BA90DD0 ($V_o=9.0V$)

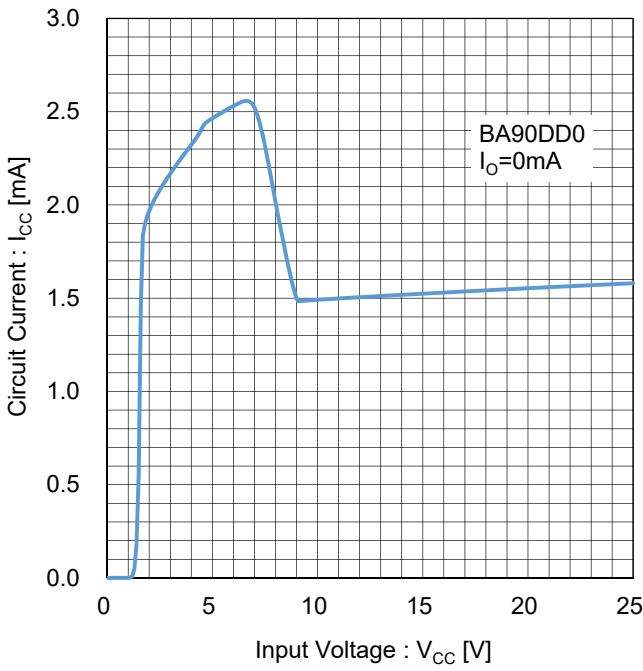


Figure 97. Circuit Current
Test Circuit A

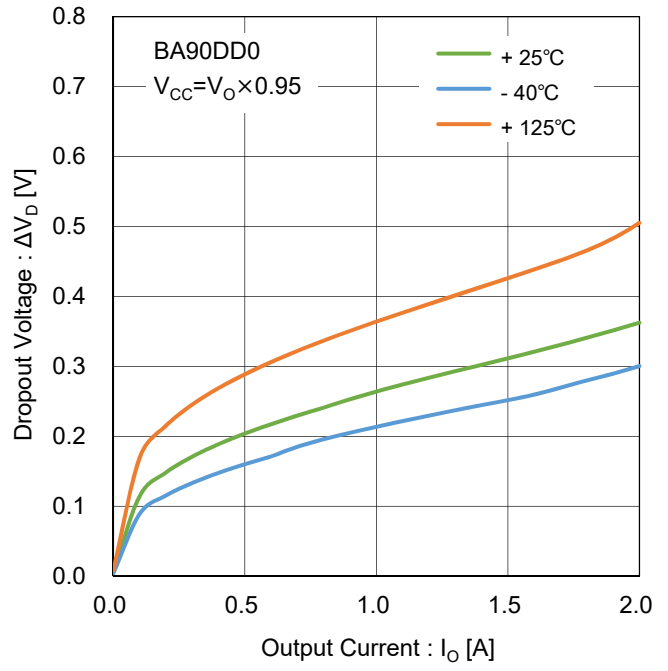


Figure 98. Dropout Voltage vs Output Current
Test Circuit B

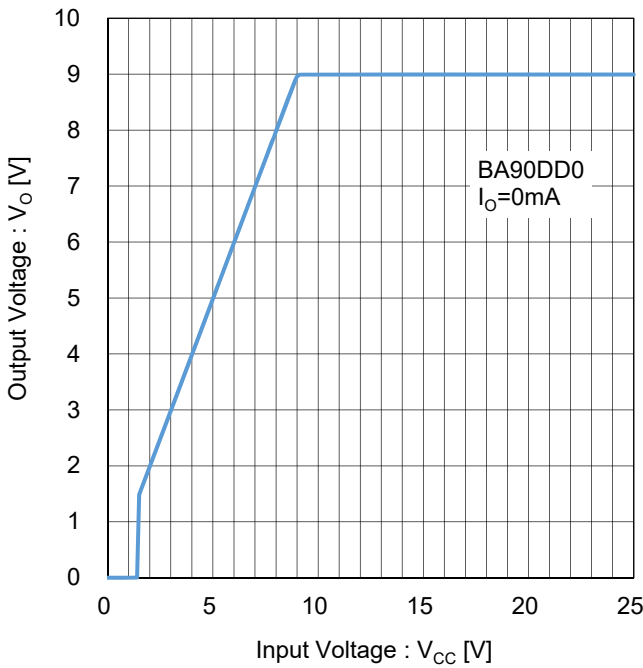


Figure 99. Output Voltage vs Input Voltage
($I_o=0mA$)
Test Circuit C

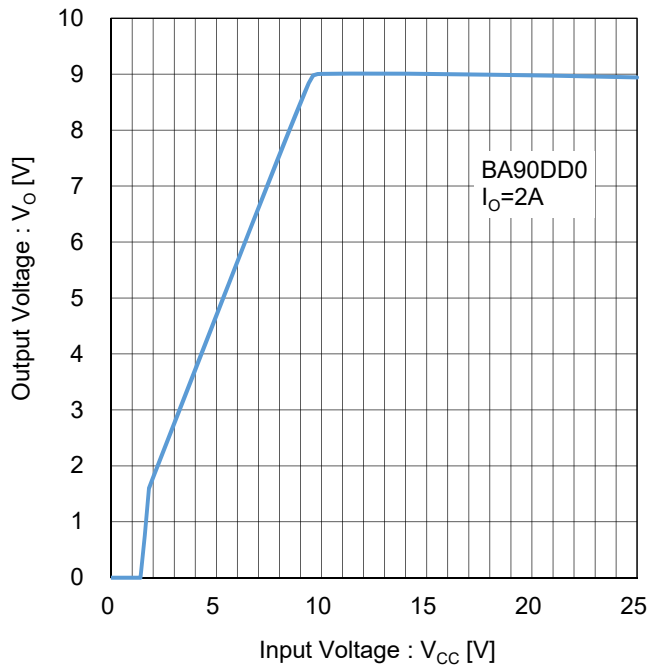


Figure 100. Output Voltage vs Input Voltage
($I_o=2A$)
Test Circuit C

BA90DD0 ($V_o=9.0V$)

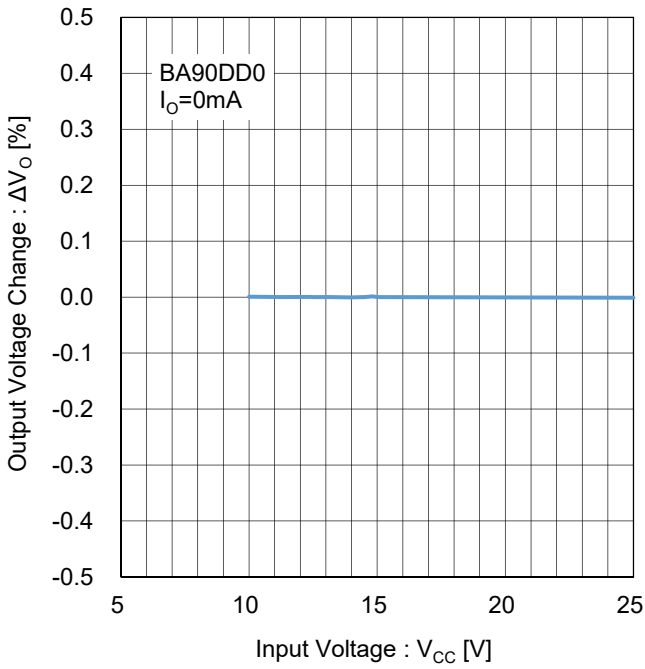


Figure 101. Line Regulation ($I_o=0\text{mA}$)
Test Circuit D

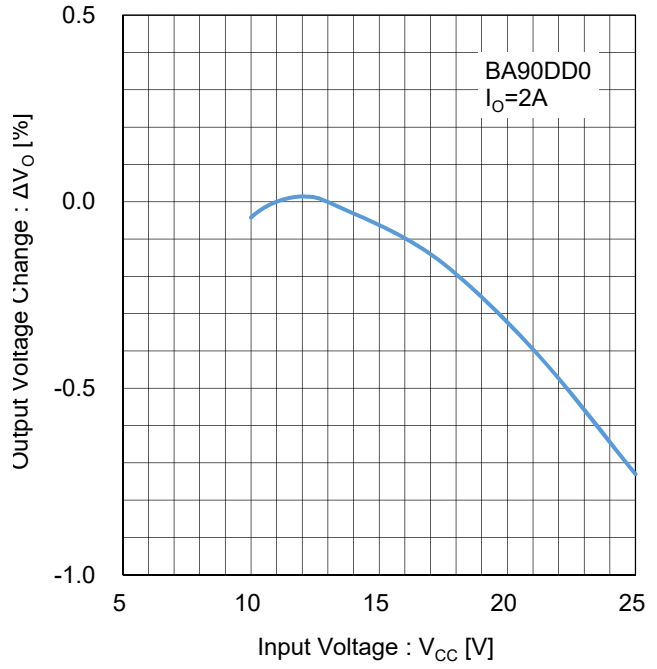


Figure 102. Line Regulation ($I_o=2\text{A}$)
Test Circuit D

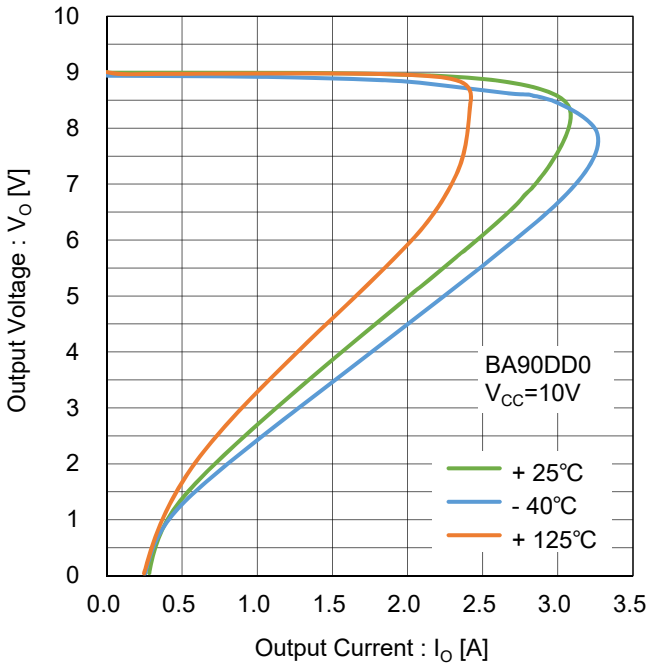


Figure 103. Overcurrent Protection
Test Circuit E

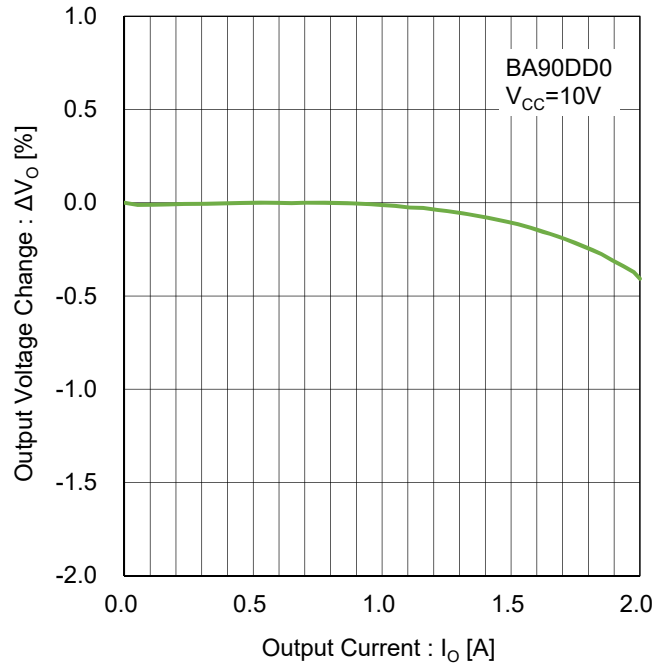


Figure 104. Load Regulation
Test Circuit F

BA90DD0 ($V_O=9.0V$)

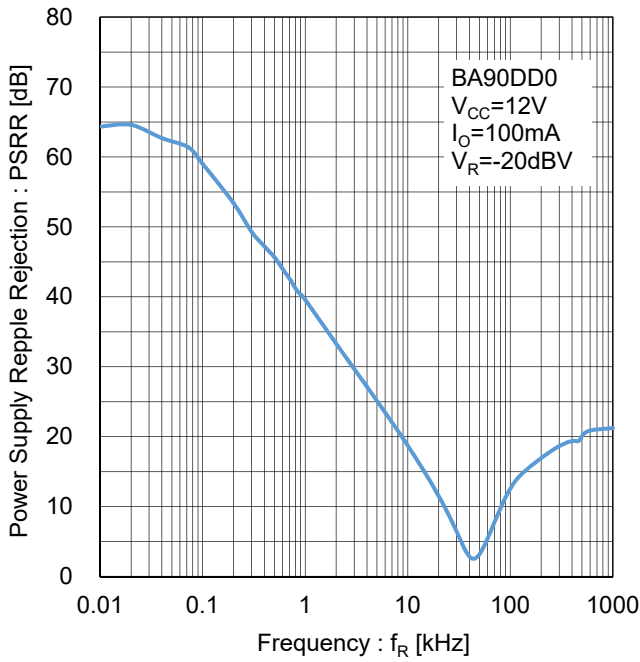


Figure 105. Ripple Rejection
Test Circuit G

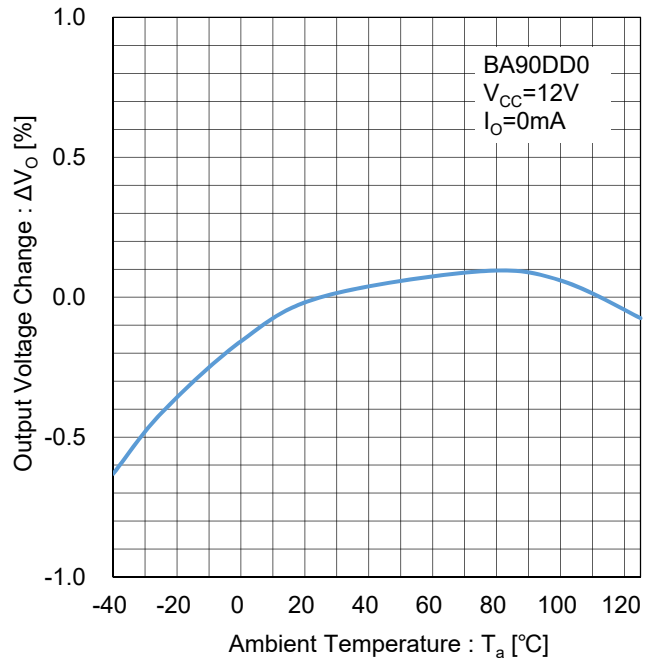


Figure 106. Output Voltage Temperature Stability
Test Circuit H

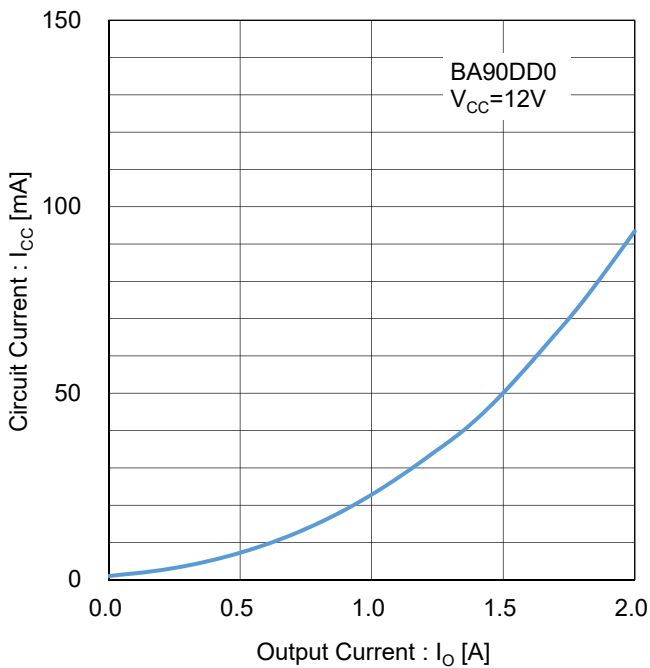


Figure 107. Circuit Current vs Output Current
Test Circuit I

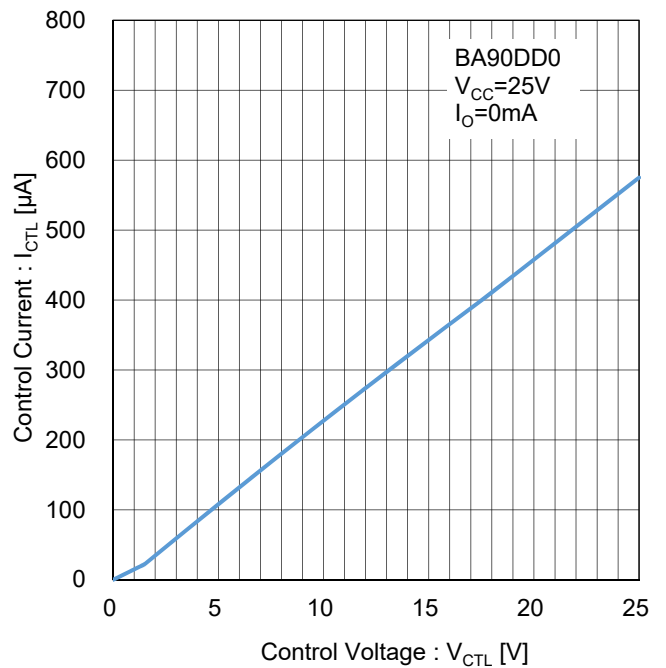


Figure 108. CTL Pin Current
Test Circuit J

BA90DD0 ($V_O=9.0V$)

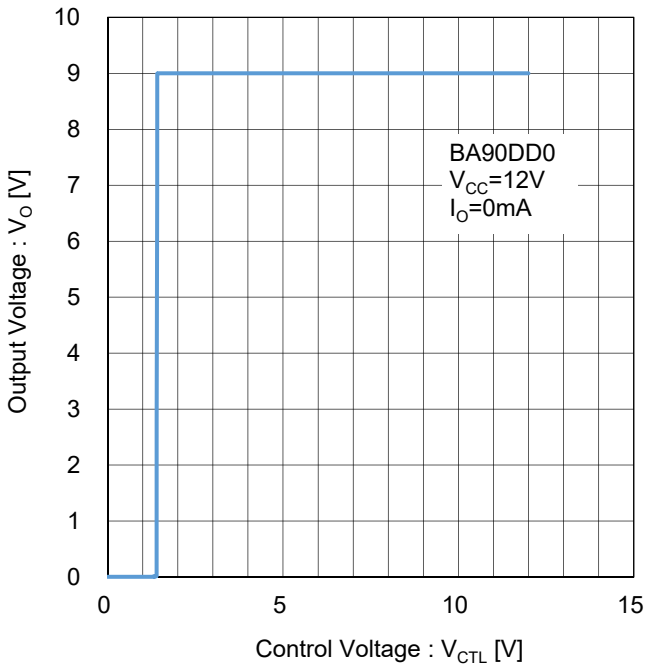


Figure 109. Output Voltage vs CTL Pin Voltage
Test Circuit K

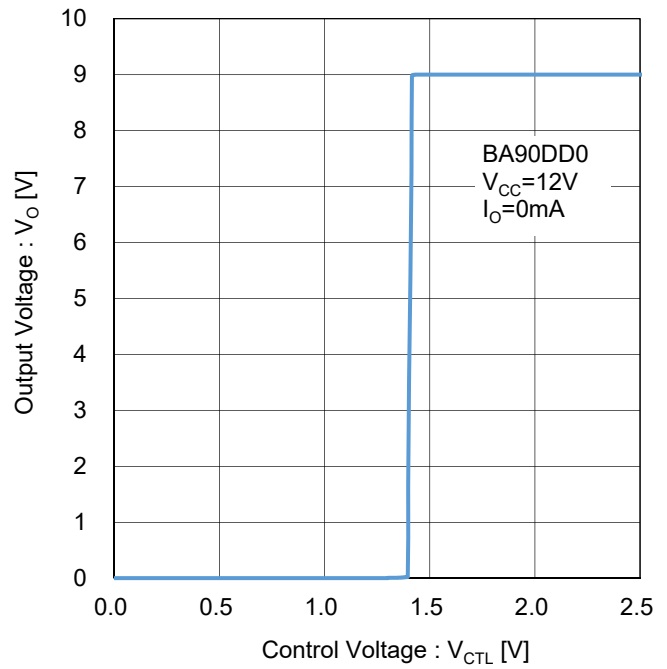


Figure 110. Output Voltage vs CTL Pin Voltage
Test Circuit K

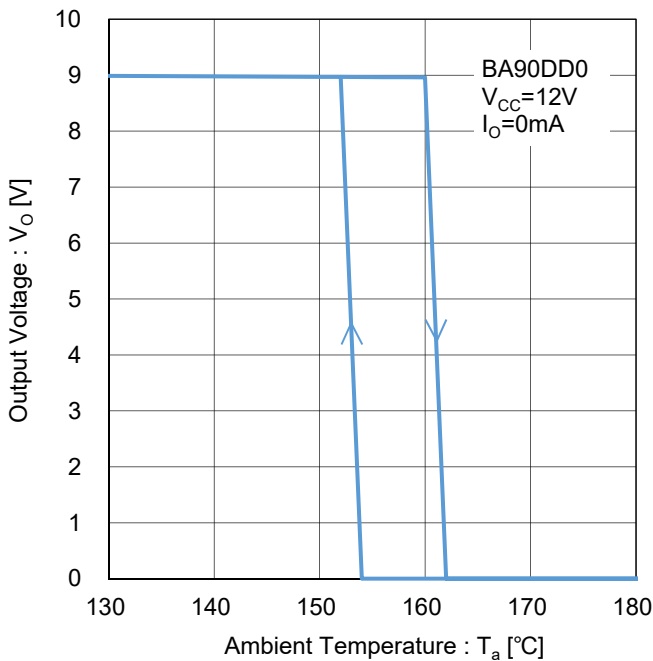


Figure 111. Thermal Shutdown
Test Circuit L

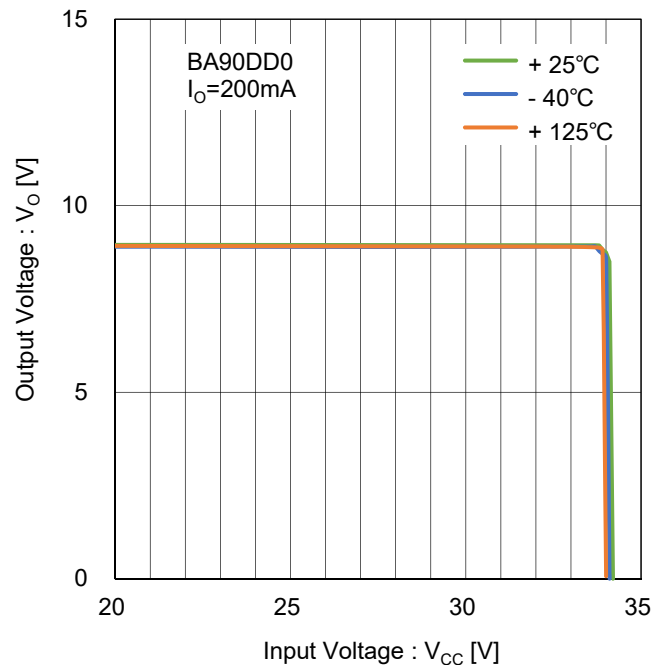


Figure 112. Overvoltage Protection
Test Circuit M

BAJ2DD0 ($V_O=12V$)

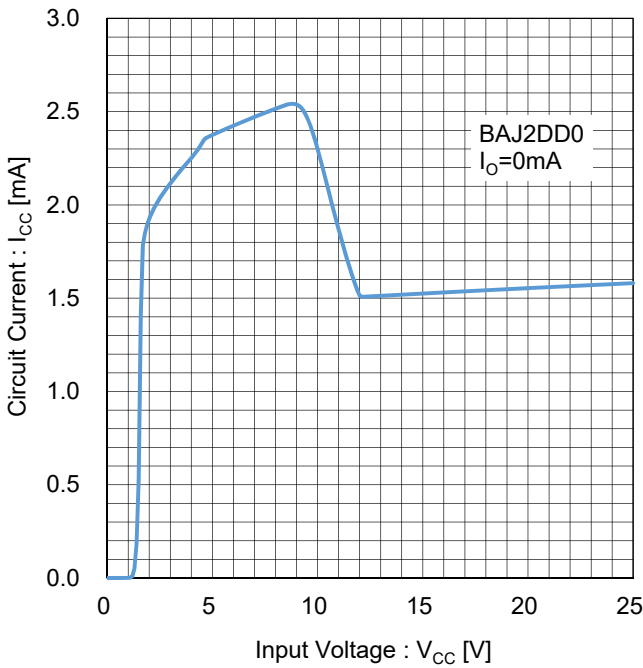


Figure 113. Circuit Current
Test Circuit A

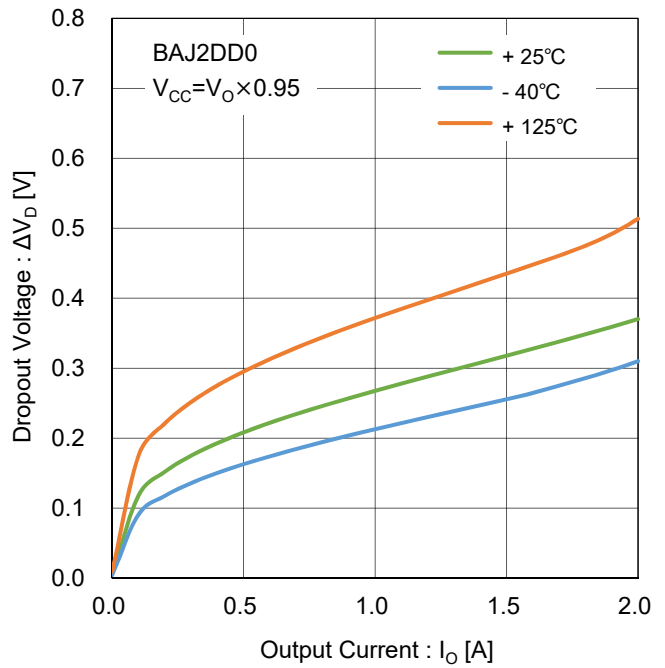


Figure 114. Dropout Voltage vs Output Current
Test Circuit B

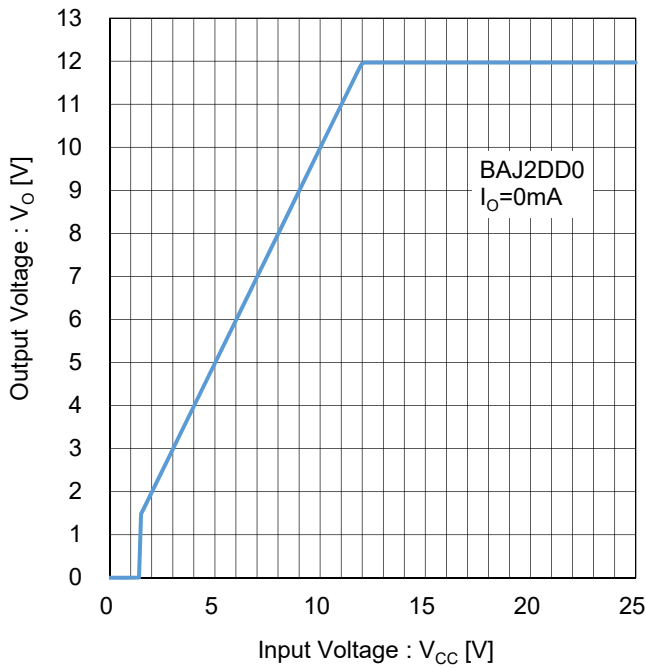


Figure 115. Output Voltage vs Input Voltage
($I_O=0mA$)
Test Circuit C

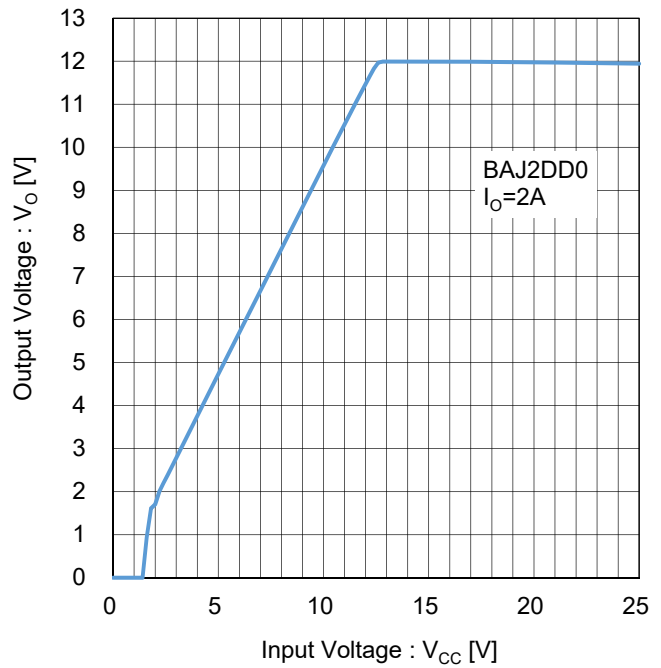


Figure 116. Output Voltage vs Input Voltage
($I_O=2A$)
Test Circuit C

BAJ2DD0 ($V_o=12V$)

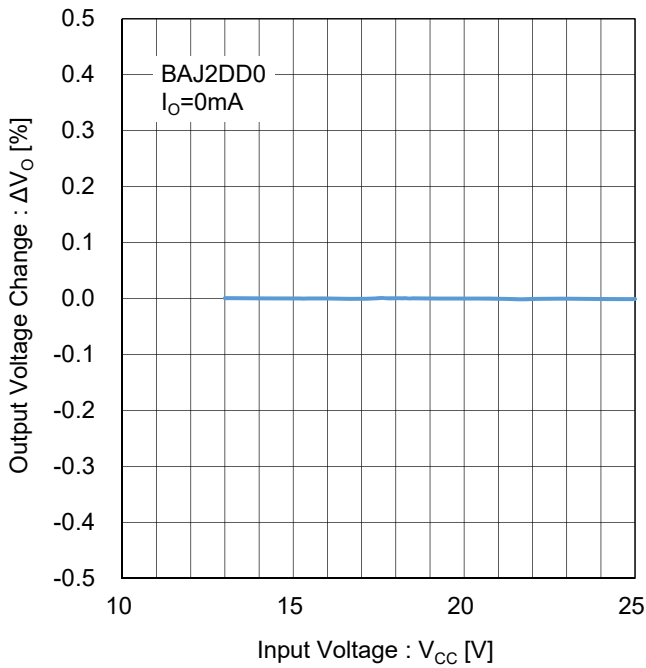


Figure 117. Line Regulation
($I_o=0mA$)
Test Circuit D

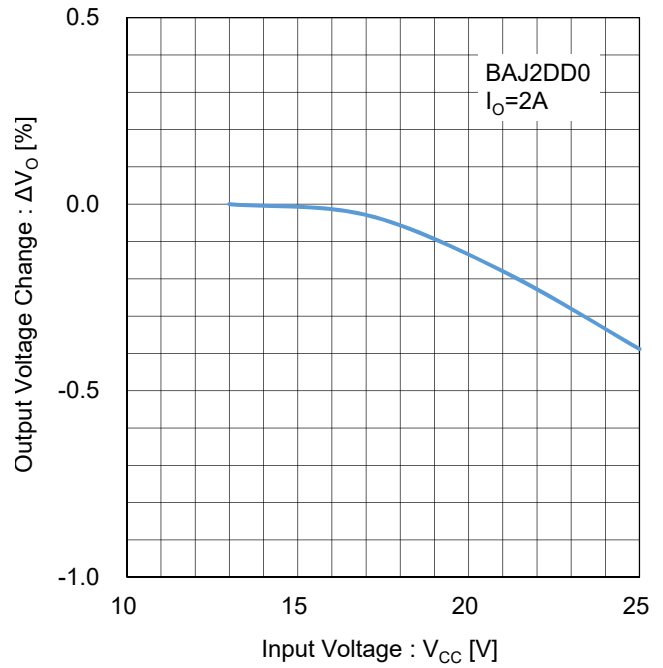


Figure 118. Line Regulation
($I_o=2A$)
Test Circuit D

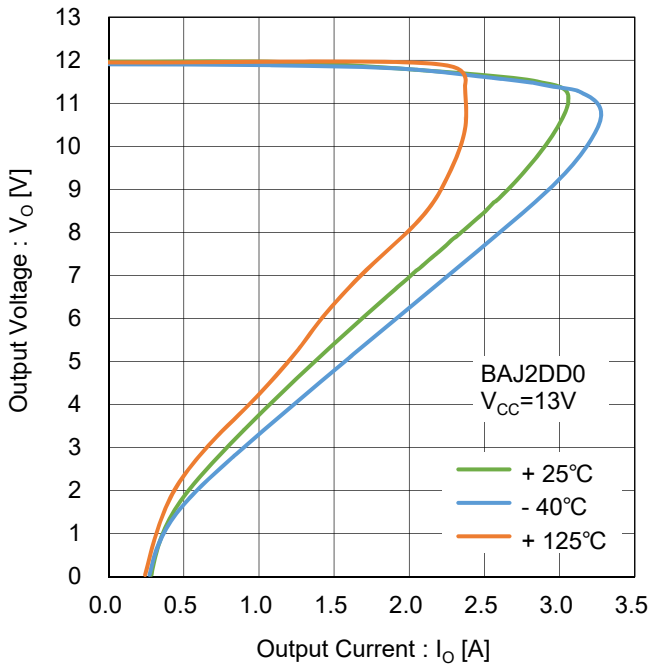


Figure 119. Overcurrent Protection
Test Circuit E

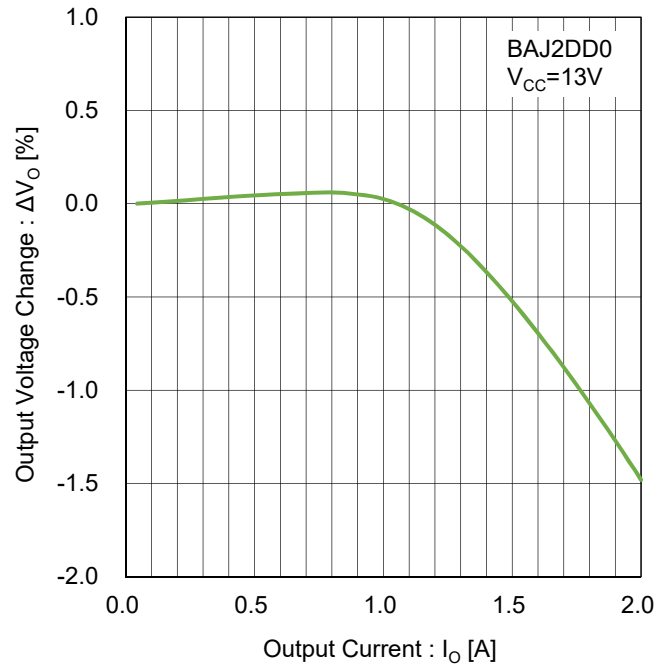


Figure 120. Load Regulation
Test Circuit F

BAJ2DD0 ($V_o=12V$)

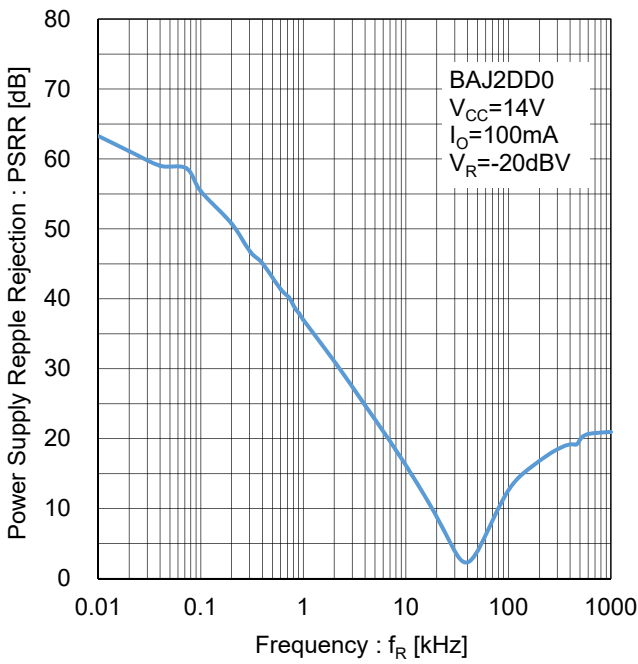


Figure 121. Ripple Rejection
Test Circuit G

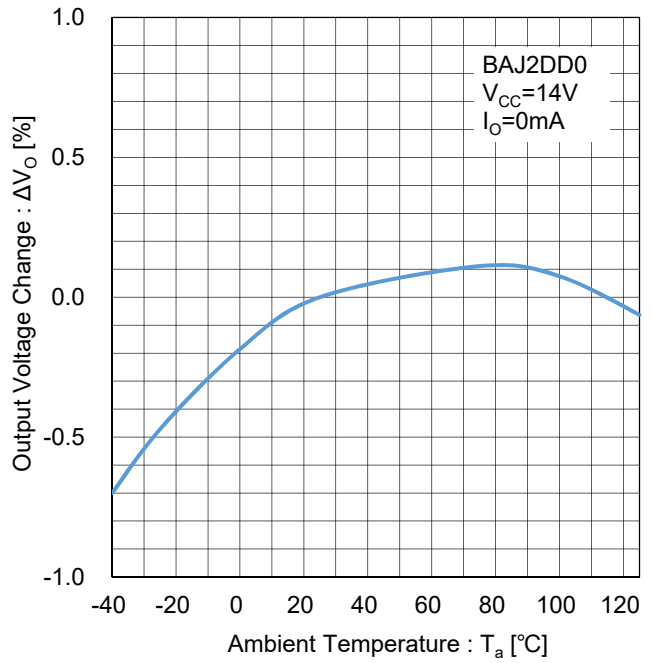


Figure 122. Output Voltage Temperature Stability
Test Circuit H

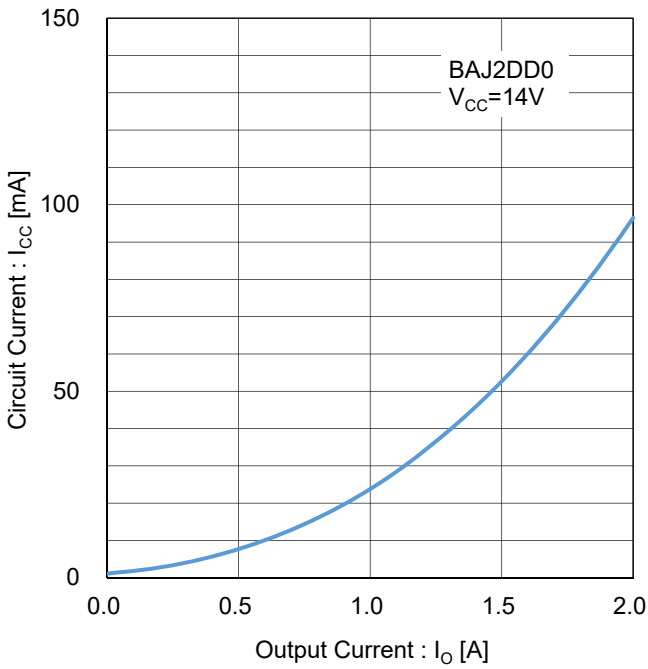


Figure 123. Circuit Current vs Output Current
Test Circuit I

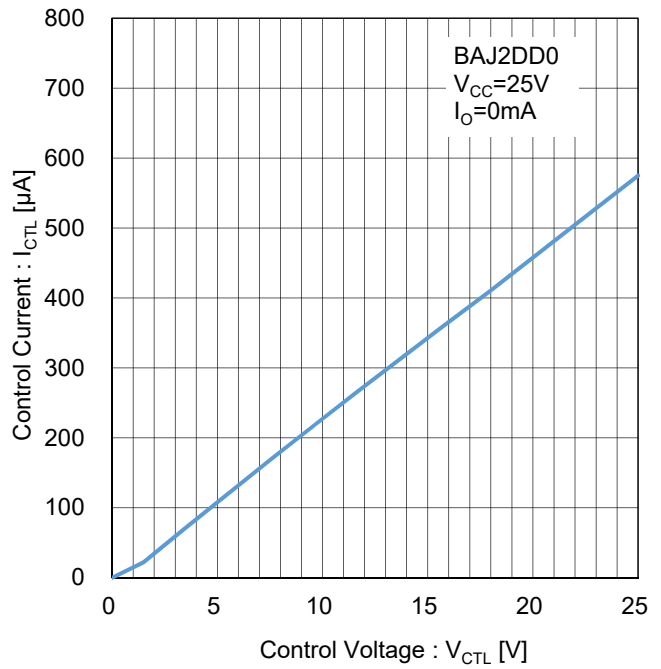


Figure 124. CTL Pin Current
Test Circuit J

BAJ2DD0 ($V_o=12V$)

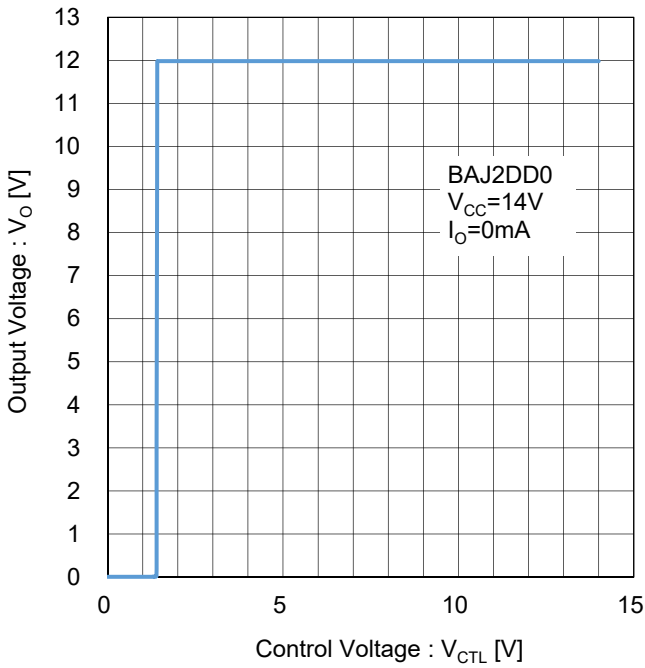


Figure 125. Output Voltage vs CTL Pin Voltage
 Test Circuit K

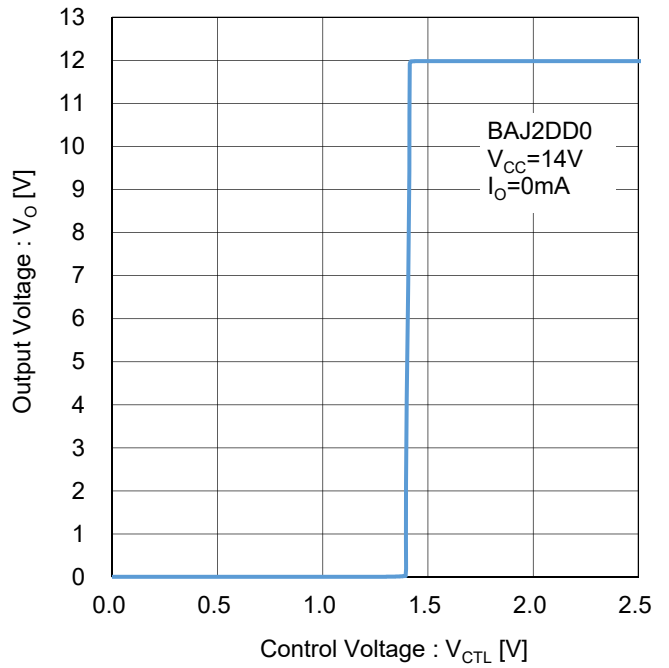


Figure 126. Output Voltage vs CTL Pin Voltage
 Test Circuit K

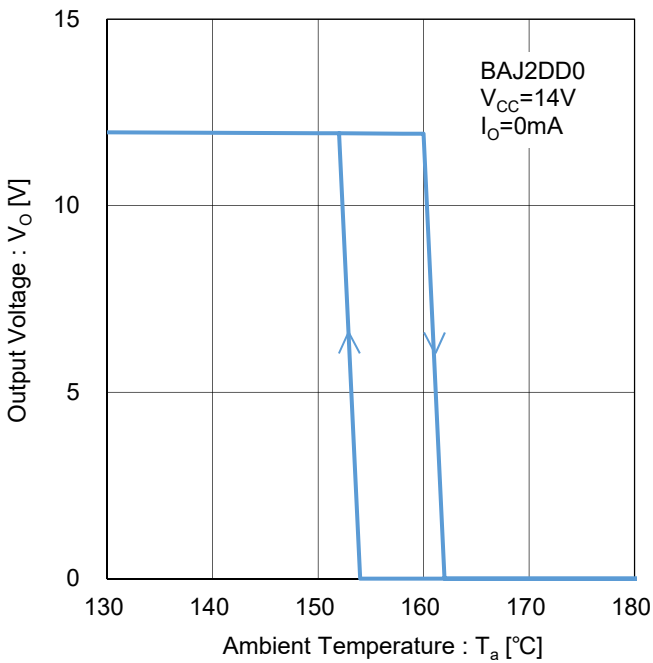


Figure 127. Thermal Shutdown
 Test Circuit L

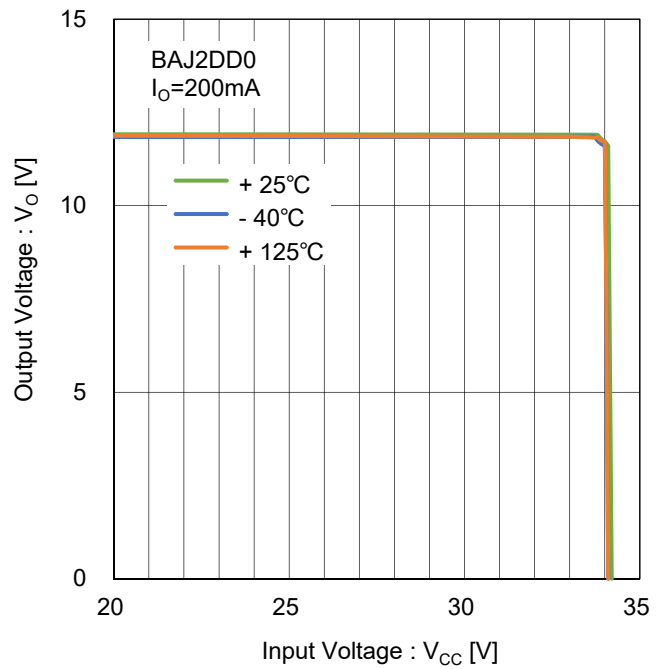


Figure 128. Overvoltage Protection
 Test Circuit M

BAJ6DD0 ($V_O=16V$)

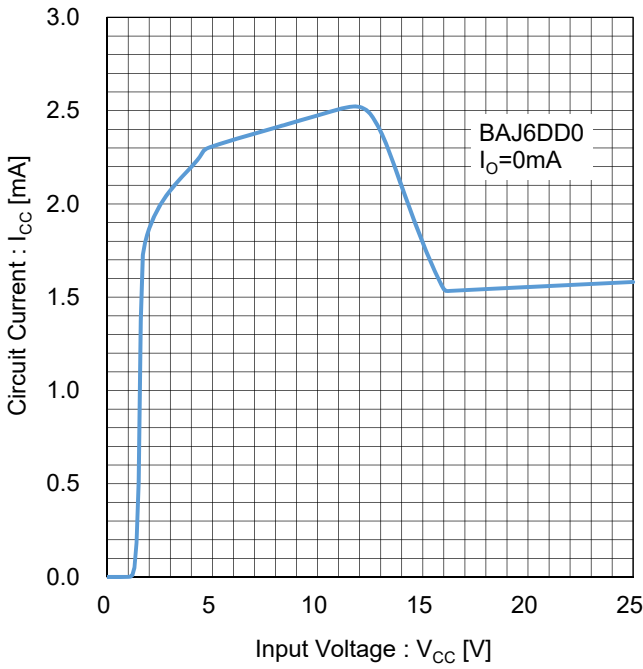


Figure 129. Circuit Current
Test Circuit A

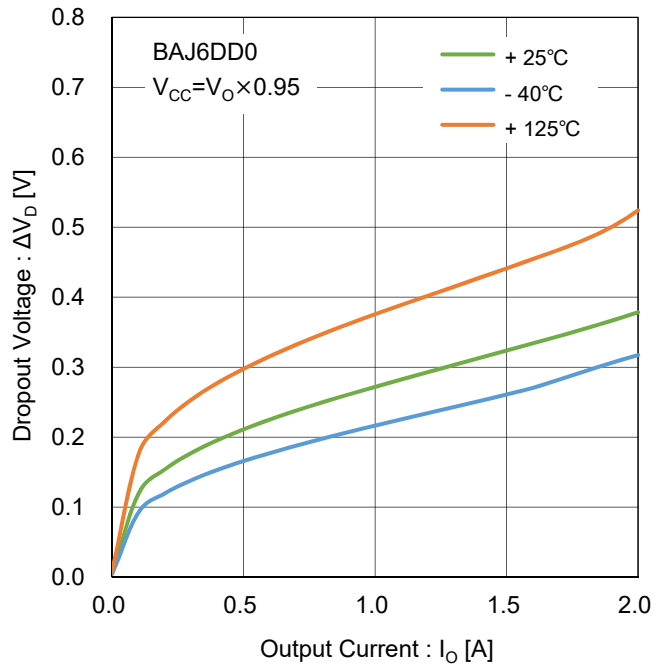


Figure 130. Dropout Voltage vs Output Current
Test Circuit B

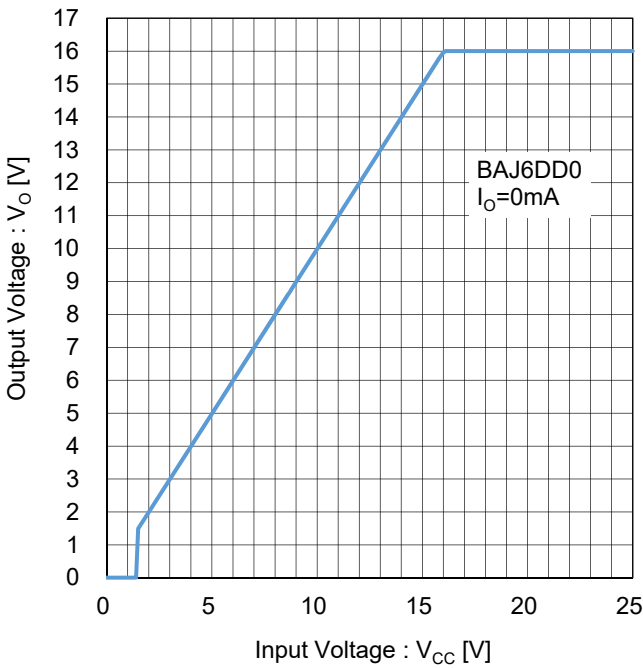


Figure 131. Output Voltage vs Input Voltage
($I_O=0mA$)
Test Circuit C

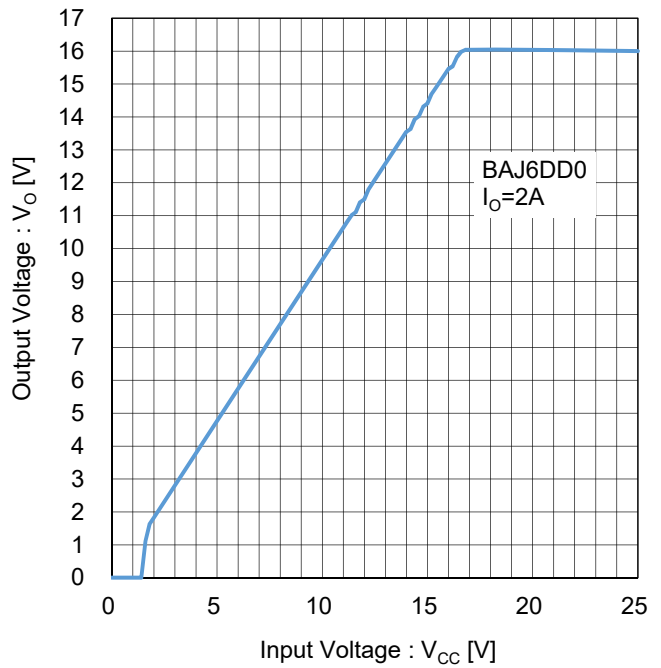


Figure 132. Output Voltage vs Input Voltage
($I_O=2A$)
Test Circuit C

BAJ6DD0 ($V_o=16V$)

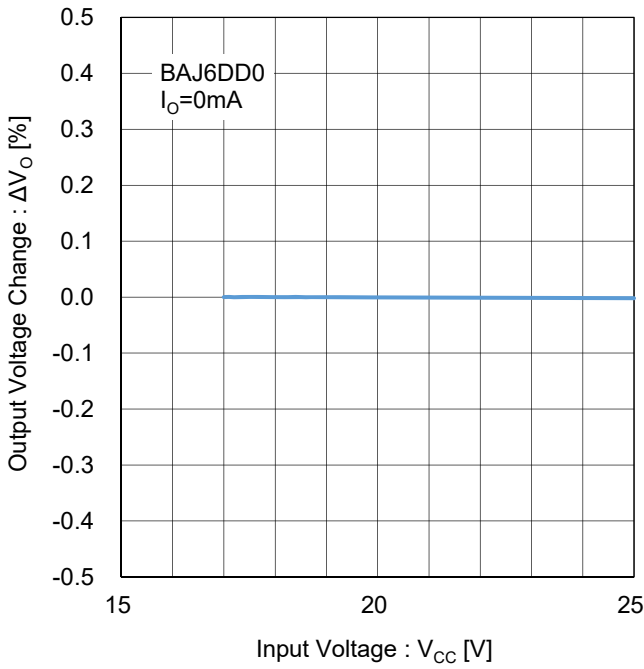


Figure 133. Line Regulation
($I_o=0mA$)
Test Circuit D

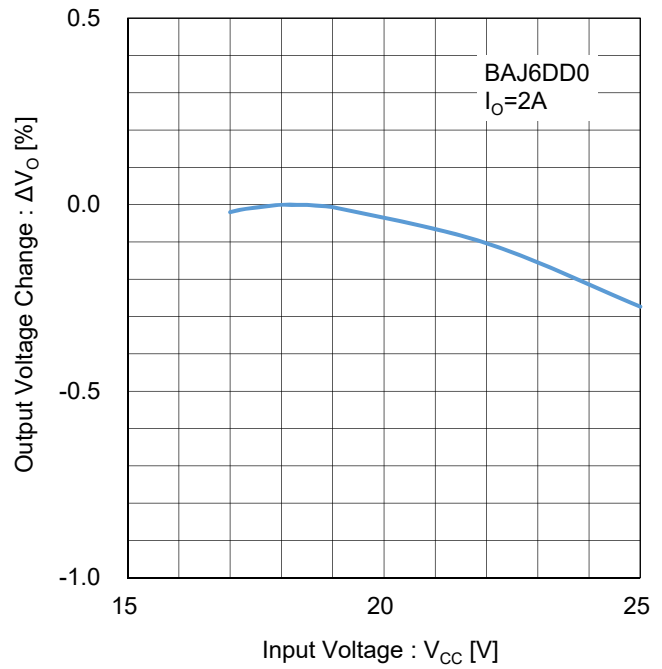


Figure 134. Line Regulation
($I_o=2A$)
Test Circuit D

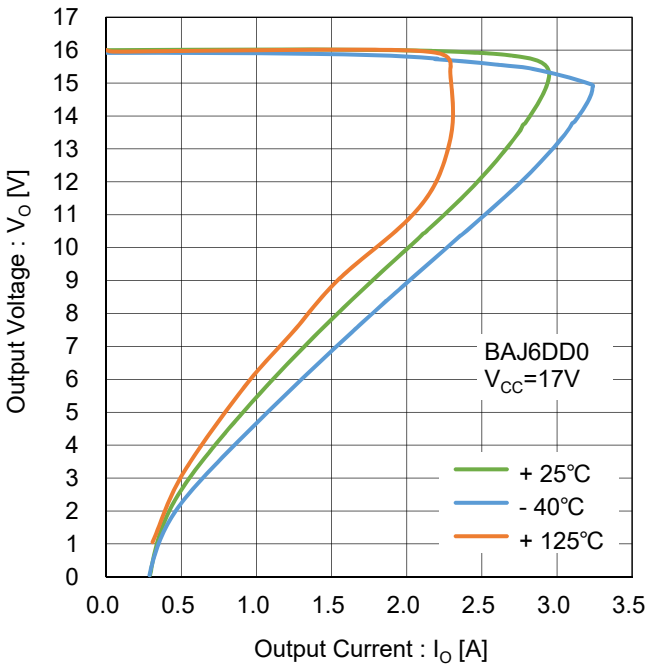


Figure 135. Overcurrent Protection
Test Circuit E

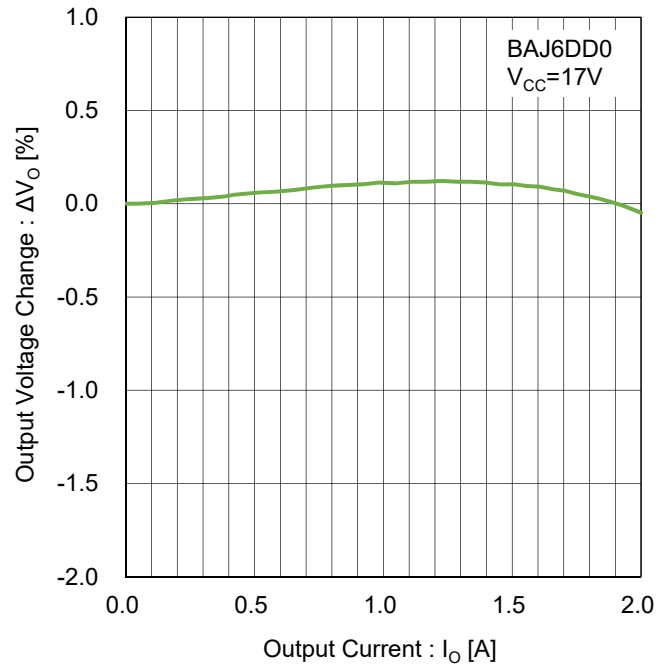


Figure 136. Load Regulation
Test Circuit F

BAJ6DD0 ($V_o=16V$)

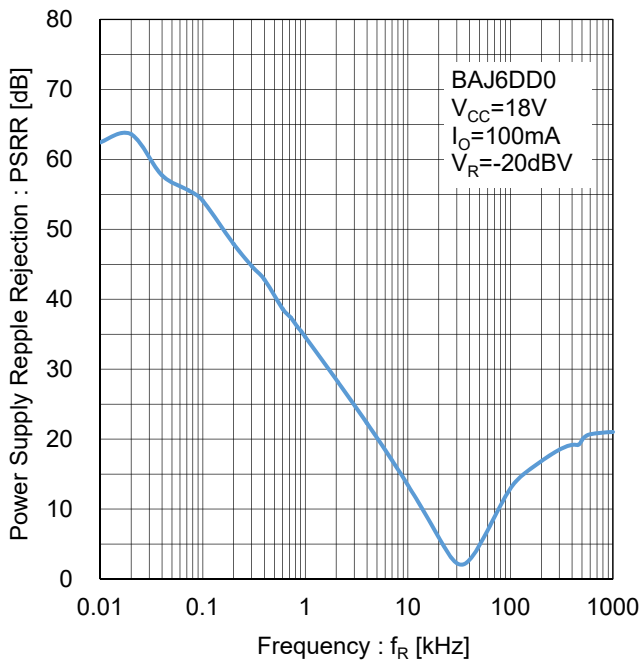


Figure 137. Ripple Rejection
Test Circuit G

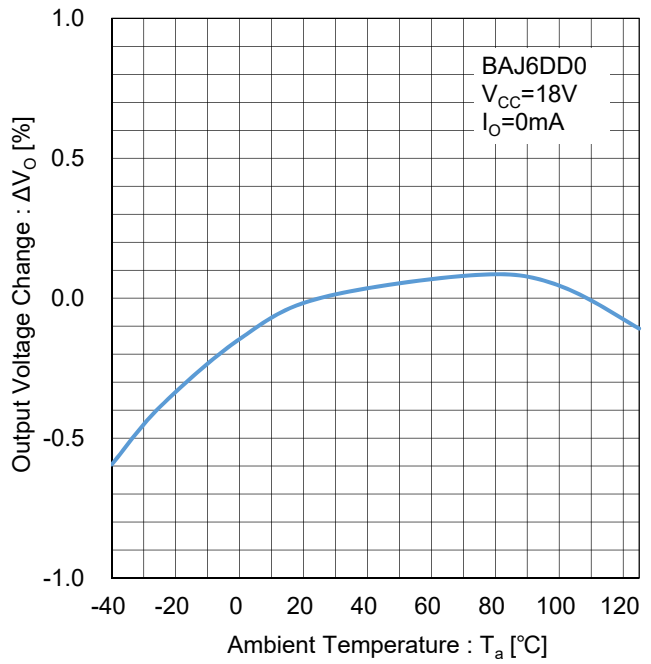


Figure 138. Output Voltage Temperature Stability
Test Circuit H

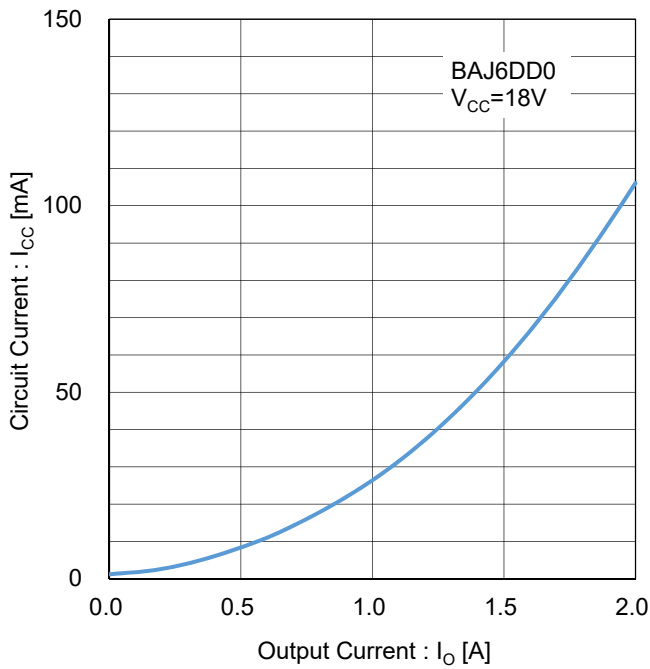


Figure 139. Circuit Current vs Output Current
Test Circuit I

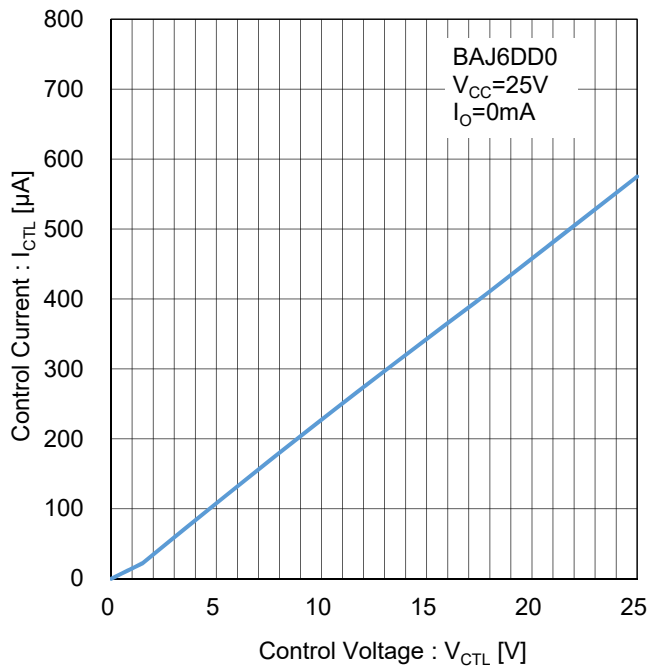


Figure 140. CTL Pin Current
Test Circuit J

BAJ6DD0 ($V_o=16V$)

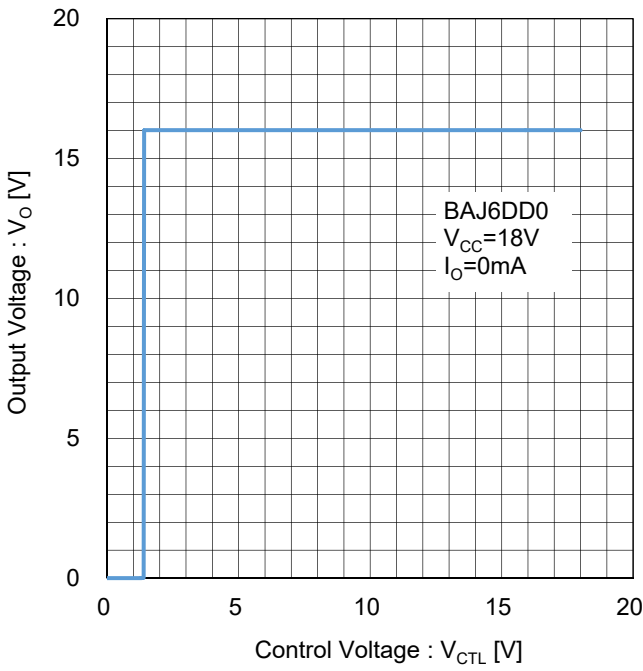


Figure 141. Output Voltage vs CTL Pin Voltage
Test Circuit K

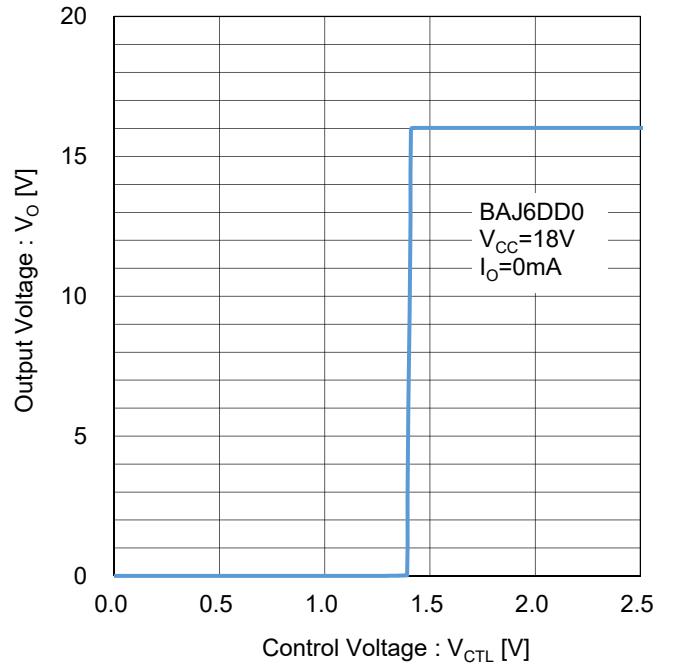


Figure 142. Output Voltage vs CTL Pin Voltage
Test Circuit K

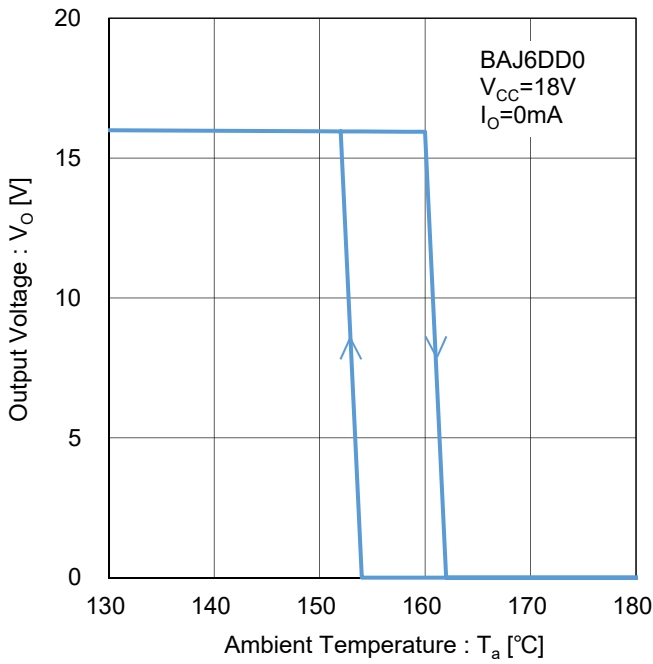


Figure 143. Thermal Shutdown
Test Circuit L

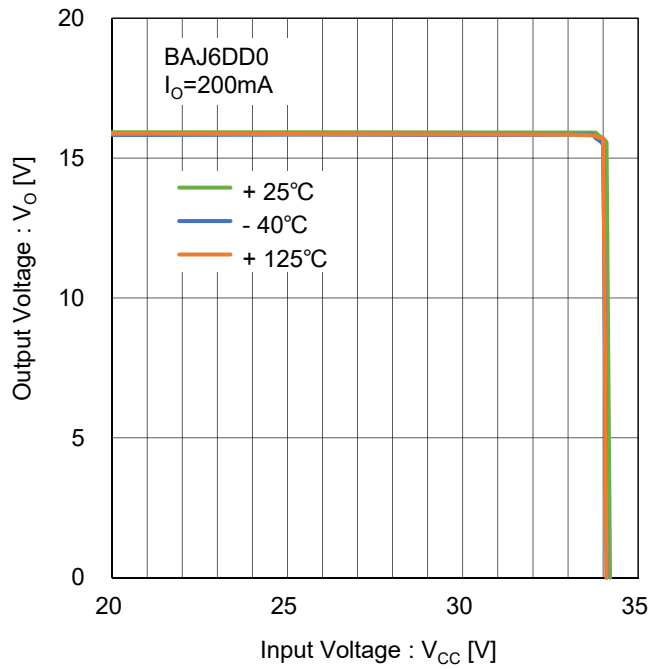
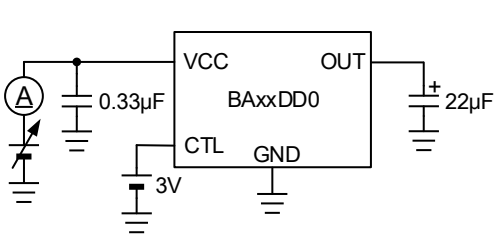
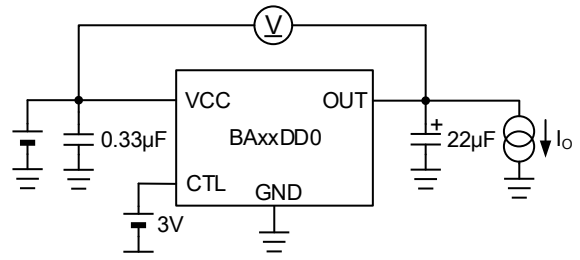


Figure 144. Overvoltage Protection
Test Circuit M

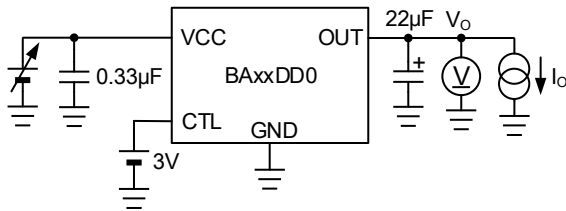
Test Circuits



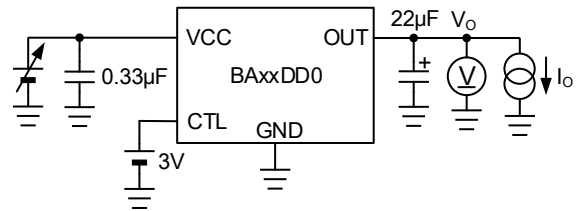
Test Circuit A. Circuit Current



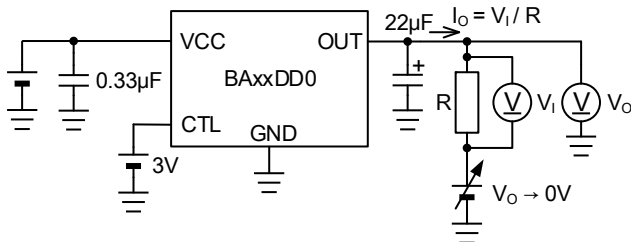
Test Circuit B. Dropout Voltage vs Output Current



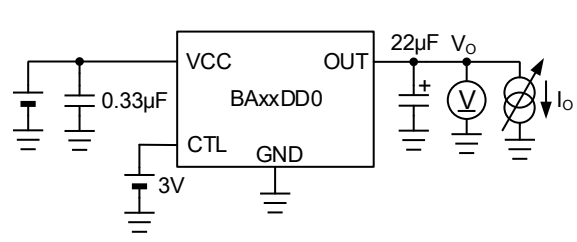
Test Circuit C. Output Voltage vs Input Voltage



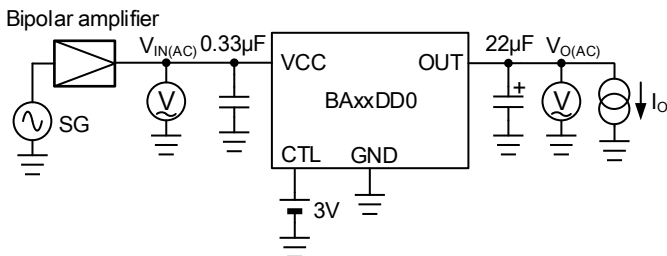
Test Circuit D. Line Regulation



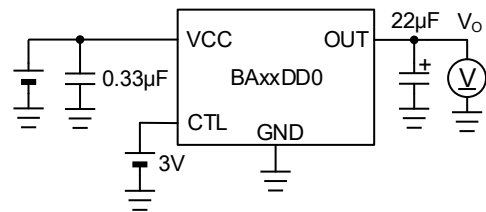
Test Circuit E. Overcurrent Protection



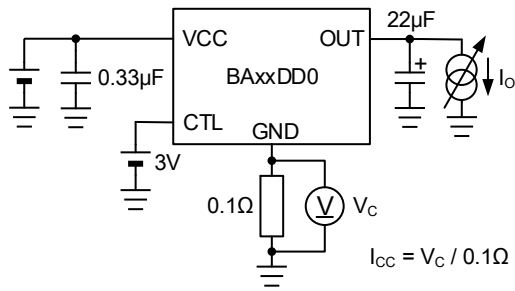
Test Circuit F. Load Regulation



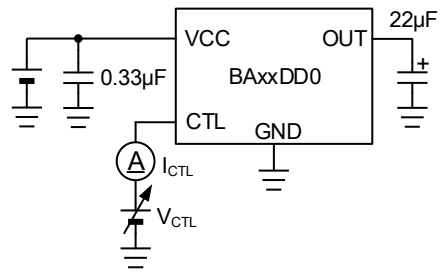
Test Circuit G. Ripple Rejection



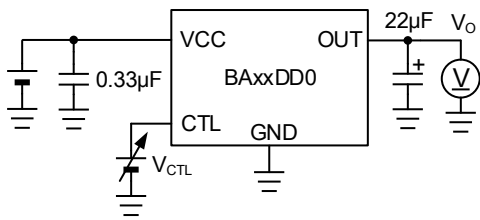
Test Circuit H. Output Voltage Temperature Stability



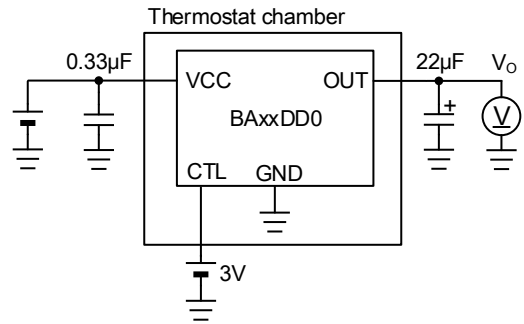
Test Circuit I. Circuit Current vs Output Current



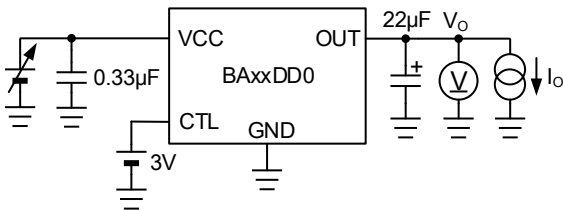
Test Circuit J. CTL Pin Current



Test Circuit K. Output Voltage vs CTL Pin Voltage



Test Circuit L. Thermal Shutdown



Test Circuit M. Overvoltage Protection

Notes

- 1) The information contained herein is subject to change without notice.
- 2) Before you use our Products, please contact our sales representative and verify the latest specifications :
- 3) Although ROHM is continuously working to improve product reliability and quality, semiconductors can break down and malfunction due to various factors.
Therefore, in order to prevent personal injury or fire arising from failure, please take safety measures such as complying with the derating characteristics, implementing redundant and fire prevention designs, and utilizing backups and fail-safe procedures. ROHM shall have no responsibility for any damages arising out of the use of our Products beyond the rating specified by ROHM.
- 4) Examples of application circuits, circuit constants and any other information contained herein are provided only to illustrate the standard usage and operations of the Products. The peripheral conditions must be taken into account when designing circuits for mass production.
- 5) The technical information specified herein is intended only to show the typical functions of and examples of application circuits for the Products. ROHM does not grant you, explicitly or implicitly, any license to use or exercise intellectual property or other rights held by ROHM or any other parties. ROHM shall have no responsibility whatsoever for any dispute arising out of the use of such technical information.
- 6) The Products are intended for use in general electronic equipment (i.e. AV/OA devices, communication, consumer systems, gaming/entertainment sets) as well as the applications indicated in this document.
- 7) The Products specified in this document are not designed to be radiation tolerant.
- 8) For use of our Products in applications requiring a high degree of reliability (as exemplified below), please contact and consult with a ROHM representative : transportation equipment (i.e. cars, ships, trains), primary communication equipment, traffic lights, fire/crime prevention, safety equipment, medical systems, servers, solar cells, and power transmission systems.
- 9) Do not use our Products in applications requiring extremely high reliability, such as aerospace equipment, nuclear power control systems, and submarine repeaters.
- 10) ROHM shall have no responsibility for any damages or injury arising from non-compliance with the recommended usage conditions and specifications contained herein.
- 11) ROHM has used reasonable care to ensure the accuracy of the information contained in this document. However, ROHM does not warrants that such information is error-free, and ROHM shall have no responsibility for any damages arising from any inaccuracy or misprint of such information.
- 12) Please use the Products in accordance with any applicable environmental laws and regulations, such as the RoHS Directive. For more details, including RoHS compatibility, please contact a ROHM sales office. ROHM shall have no responsibility for any damages or losses resulting non-compliance with any applicable laws or regulations.
- 13) When providing our Products and technologies contained in this document to other countries, you must abide by the procedures and provisions stipulated in all applicable export laws and regulations, including without limitation the US Export Administration Regulations and the Foreign Exchange and Foreign Trade Act.
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