**TEST**

**PRODUCT**

**QUALIFICATION**

**REPORT**

**TITLE:**

Qualification of Alternative LTC3824 Test Platform

**PCN NUMBER:**

PCN 21\_0070

**REVISION:**

A

**DATE:**

03/01/2021

**SUMMARY**

The LTC3824 is a step-down DC/DC controller designed to drive an external P-channel MOSFET. With a wide input range of 4V to 60V and a high voltage gate driver, the LTC3824 is suitable for many industrial and automotive high power applications. Constant frequency current mode operation provides excellent performance. The LTC3824 can be configured for Burst Mode operation. Burst Mode operation enhances low current efficiency (only 40µA quiescent current) and extends battery run time. The switching frequency can be programmed up to 600kHz and is easily synchronizable. Other features include current limit, soft-start, micropower shutdown, and Burst Mode disable.

To augment test manufacturing during increase in test volumes, the LTC3824 is planned to be

transferred to another test platform, from LTX TS88 to Eagle ETS-88.

There is no change to the form, fit, function, quality, or reliability of the transferred parts.

This report documents the successful completion of the platform migration/ product test transfer requirements for the release of LTC3824 from LTX TS88 to ETS-88.

Test product qualification was performed according to Analog Device’s Specification

(TST00094/TST00095 – Test Platform Migration Specification)

**TEST AND PRODUCT INFORMATION**

Device: LTC3824

Package: 10-Pin MSOP packages with exposed pads for low thermal resistance.

Part Name: LTC3824EMSE#PBF / LTC3824IMSE#PBF

Catalog Part Name: LTC3824EMSE#TRPBF / LTC3824IMSE#TRPBF

Tester Platform1: ETS-88

Handler1: RASCO\_1000\_RM\_AHC

Tester Platform2: LTX TS88

Handler2: RASCO\_1000\_RM\_AHC

**TEST DESCRIPTION AND RESULTS (Test Platform Migration Criteria)**

Table 1 and Table 2 provide a description of the correlation qualification conducted for the LTC3824

platform migration and their corresponding results. For Table 3, small lots were tested on LTX and ETS-88 platforms to validate the LTX TS88 and ETS-88 has the Bin 1 and failure performance. The resulting data were then processed and subjected to the requirement criteria. If all tests passed all criteria, then the platform migration is successfully correlated.

**Table 1. Mean Shift**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Generic | Package | Tester | LTX (lot size) | ETS-88 (lot size) | Mean Shift [(delta mean)/(limit range) < 5.0%] |
| LTC3824 | 10-Pin MSOP | LTX and ETS88 | 113 | 113 | Passed |

**Table 2. Sigma Spread**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Generic | Package | Tester | LTX (lot size) | ETS-88 (lot size) | Sigma Spread [(sigma new)/(sigma original) < 1.3] |
| LTC3824 | 10-Pin MSOP | LTX and ETS88 | 113 | 113 | Passed |

**Table 3. Yield Validation and Reject Verification**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Generic | Package | Lot | Lot Size | Good units passed on both test platforms? | Validation of rejects passed? |
| LTC3824 | 10-Pin MSOP | 1 | 113 | Yes | Yes |
| LTC3824 | 10-Pin MSOP | 2 | 134 | Yes | Yes |
| LTC3824 | 10-Pin MSOP | 3 | 130 | Yes | Yes |

**CONCLUSION**

The correlation exercise has been successfully completed. The Eagle ETS-88 has been

proven to be at par with the LTX TS88 test platform. It is therefore suitable for release to production

awaiting customer approval.

**APPROVALS**

Technical Review Board (TRB)

**REFERENCE**

Technical Review Board: TRB #62959

**ADDITIONAL INFORMATION**

Homepage: <https://www.analog.com/>