

## CHANGE NOTIFICATION



Linear Technology Corporation  
1630 McCarthy Blvd., Milpitas, CA 95035-7417  
(408) 432-1900

December 01, 2016

Dear Sir/Madam:

PCN#120116

**Subject: Notification of Qualification of Alternate Inductor for LTM4642  $\mu$ Module Regulator**

This notice is to inform you that Linear Technology Corporation has qualified an alternate inductor for use in the assembly of the LTM4642  $\mu$ Module regulator. The change is transparent in customer applications since there is no change in form, fit, function, quality or reliability of the products. The product datasheet is unchanged. This qualification has been done in order to provide greater supply assurance and reduced product lead times.

The new inductor has been qualified through the assembly and characterization of multiple LTM4642 lots over the full operating junction temperature range and through rigorous engineering bench evaluations. In addition, standard qualification tests were successfully completed, including power cycling, temperature shock, temperature cycling and high temperature operating life per JEDEC and Linear Technology standards. The qualification results summary is attached. The list of affected part numbers is shown below.

### **List of part numbers affected:**

LTM4642EY#PBF  
LTM4642IY#PBF  
LTM4642IY

Linear Technology will accept requests for revised samples within 30 days of the date of this notification. Production shipments of product incorporating the alternate assembly will begin no sooner than February 01, 2017.

Should you have any further questions, please feel free to contact me at 408-432-1900 ext. 2077, or by E-mail [JASON.HU@LINEAR.COM](mailto:JASON.HU@LINEAR.COM). If I do not hear from you by February 01, 2017, we will consider this change approved by your company.

Sincerely,

Jason Hu  
Quality Assurance Engineer

**QUALIFICATION DATA**  
**LTM4644 & LTM4642 Alternate Inductor Qualification**

**11/29/2016**

<b>• HIGH TEMPERATURE OPERATING LIFE AT 125°C</b>					
DEVICE TYPE	SAMPLE SIZE	DATE CODE RANGE	HOURS ON HTOL	DEVICE HOURS AT +125°C	NUMBER OF FAILURES
LTM4644	154	1609-1617	1,000	154,000	0
<b>• POWER CYCLE JUNCTION TEMPERATURE FROM +50°C to +100°C</b>					
DEVICE TYPE	SAMPLE SIZE	DATE CODE RANGE	POWER CYCLES	DEVICE POWER CYCLES	NUMBER OF FAILURES
LTM4644	16	1609-1617	25,000-50,000	600,000	0
<b>• J-STD-020 MSL3 PRECONDITIONING: 192h +30°C/60% R.H., 3x REFLOW AT +245°C PEAK</b>					
DEVICE TYPE	SAMPLE SIZE	DATE CODE RANGE			NUMBER OF FAILURES
LTM4642	231	1620			0
LTM4644	461	1609-1617			0
<b>Total</b>	<b>692</b>				<b>0</b>
<b>• EXTENDED PRECONDITIONING: 216h +30°C/60% R.H., 3x REFLOW AT +245°C PEAK</b>					
DEVICE TYPE	SAMPLE SIZE	DATE CODE RANGE			NUMBER OF FAILURES
LTM4642	45	1620			0
LTM4644	25	1617			0
<b>Total</b>	<b>70</b>				<b>0</b>
<b>• UNBIASED HIGHLY ACCELERATED STRESS TEST (UBHAST) AT +130°C/85% R.H. <sup>(1)</sup></b>					
DEVICE TYPE	SAMPLE SIZE	DATE CODE RANGE	HOURS ON HAST	DEVICE HOURS AT +130°C	NUMBER OF FAILURES
LTM4642	77	1620	96	7,392	0
LTM4644	154	1609-1617	192	29,568	0
<b>Total</b>	<b>231</b>			<b>36,960</b>	<b>0</b>
<b>• TEMP CYCLE FROM -55°C TO +125°C<sup>(1)</sup></b>					
DEVICE TYPE	SAMPLE SIZE	DATE CODE RANGE	CYCLES ON TC	DEVICE CYCLES	NUMBER OF FAILURES
LTM4642	77	1620	1,000	77,000	0
LTM4644	154	1609-1617	1,000	115,500	0
<b>Total</b>	<b>231</b>			<b>192,500</b>	<b>0</b>
<b>• THERMAL SHOCK FROM -55°C TO +125°C<sup>(1)</sup></b>					
DEVICE TYPE	SAMPLE SIZE	DATE CODE RANGE	CYCLES ON TS	DEVICE CYCLES	NUMBER OF FAILURES
LTM4642	77	1620	500	38,500	0
LTM4644	152	1609-1617	1,000	152,000	0
<b>Total</b>	<b>229</b>			<b>190,500</b>	<b>0</b>
<b>• HIGH TEMPERATURE STORAGE AT 150°C</b>					
DEVICE TYPE	SAMPLE SIZE	DATE CODE RANGE	HOURS ON HTS	DEVICE HOURS AT +150°C	NUMBER OF FAILURES
LTM4644	154	1609-1617	1,000	154,000	0

(1) Environmental stress are preceded by JEDEC Level 3 Preconditioning: 192h 30°C/60% R.H. plus 3x Reflow at 245°C.