MIL-STD-883K CHANGE SUMMARY
(Dated 25 April 2016)

The following table summarizes the changes for MIL-STD-883 K

REF No.	Method and Paragraph	Change	Source	Reason
1	Main Body: 2.3	Under Referenced Documents remove IPC J-STD-002	DLA	Rewrite of TM-2003 has deleted this reference.
2	1005.10: 3.2.1.1 a	deleted "burn in or" text	JC-13.2	Correction
3	1005.10: 3.2.1.1 b	Deleted "burn in and life" text	JC-13.2	Correction
4	1005.10: 3.2.1.1 c	Added- c. For devices whose maximum operating temperature is stated in terms of case TC , or junction TJ, and whose operation cannot exceed the maximum allowable junction temperature then the ambient life test operating temperature may be reduced…	JC-13.2	Addition/Change
5	1005.10: 3.3.1	Added- Alternatively, except for linear, or MOS (CMOS, NMOS, PMOS, etc.) devices and hybrid devices which containing linear or MOS devices components, or unless otherwise specified, the bias may be removed during cooling provided the case temperature of devices under test ...	JC-13.2	Correction
6	1005 Table 1	Changed Note1 to Table 1. The higher pressures indicated may only be used with the approval of the part manufacturer. Manufacturers shall provide the qualifying activity with data to show that the higher pressures indicated do not damage the part being tested by compromising the package integrity, e.g. lid seal, feedthroughs, etc.	JC-13.2	Addition/Change
7	1005 Table 1	Changed Note3 to Table 1. The only allowed conditions are as stated in the table above except for high power devices (see 3.2.1.1)..	JC-13.2	Addition/Change
8	1010.9: 1.1.2	Modify with: within the oven's working zone and is used, in conjunction with the Profile Data, to ensure testing is performed in accordance with temperature requirements.	JC-13.2	Clarification
9	1010.9: 2.1	Moved from Note of 1.1.2 to paragraph 2.1 For systems that meet the worst case load temperature periodic profiling / characterization, it is acceptable to locate the monitoring sensor in any location within the profile area.	JC-13.2	Clarification
10	1014.15: Entire Method	Editorial corrections and paragraph renumbering thoughout the method.	DLA	Clarification
11	1014.15: 1.1 c	Added the following conversion factors: atm cm3/s (OLN2) X 0.98 = atm cm3/s (air) atm cm3/s (OLaIr) X 1.00 = atm cm3/s (air)	DLA	Add missing conversion factors.
12	1014.15: 1.1 d (7)	New wording : OL is the implied leak rate as measured on an optical leak detector. The test gas is denoted as OLair, OLN2, or OLHe	Norcom and DLA	Correction
13	1014.15: 1.1 e	Added the definition: Internal free-volume. The volume of the gas (or air) within a device package that could escape should the package leak. It is the volume of the internal package minus the circuitry, elements, or other physical displacements within the package.	JC-13 TG	Addition
14	1014.15: 1.2.1	Added A5 Combined He/O2 dry gross leak, and, He fine leak (per A1 or A2) by mass spectrometry	JC-13 TG / Oneida and DLA	Addition of new test condition A5.
15	1014.15: 1.2.5	Changed Formatting	Norcom and DLA	Correction
16	1014.15: 1.2.6	Changed Formatting	Norcom and DLA	Correction
17	1014.15: 1.3	Added wording; C4 and C5 may be performed together. Condition A5 is a combination dry gross and fine leak test and therefore gross leak may be used prior to fine leak tests.	Norcom and DLA	Correction
18	1014.15: 2.1	Modified paragraph title.	DLA	Change
19	1014.15: 2.1.1.d	Added test condition A5 apparatus	Oneida and DLA	Addition
20	1014.15: 2.1.2.1	Add text A5 and the dwell times listed in Table 1	JC-13 TG	Change
21	1014.15: 2.1.2.2	Changed "cavity" to "free"	JC-13 TG	Change

22	1014.15: 2.1.2.4	Added Test condition A5, Combined He/O2 dry gross leak, and, He fine leak (per A1 or A2) by mass spectrometry	Oneida and DLA	Addition
23	1014.15: 2.1.3	Added Failure criteria for Gross Leak for A5	Oneida and DLA	A5 addition
24	1014.15: TABLE 1	Updated Table I.	JC-13 TG	Correction
25	1014.15: 2.2.1	operator shall perform a functional check at least once every shift	DLA	Correction
26	1014.15: 2.4	Test condition for optical leak test, (C4 , C4 and C5).	DLA	Correction
27	1014.15: 2.4.1	Rewrite entire paragraph		
28	1014.15: 2.4.2	Added; f. An absolute pressure sensor installed that automatically accounts for changes in barometric pressure. g. A temperature sensor (thermocouple) that is used for temperature variations for the Temperature Compensation Factor (TCF). h. A heater that is used during the initial device profile set up only, for determining the Temperature Compensation Factor (TCF).	JC-13 TG	Correction
29	1014.15: 2.4.3	Package set up and calibration shall be performed using two or more devices with leak rates less than the test limits in Table VII. These set up devices will be used prior to production testing to determine if the optical leak tester can be used to test this specific package type and also to determine the specific parameters...	DLA	Correction
30	1014.15: 2.4.4	Process monitoring. A group of “system check devices” shall be used for system operation verification at the beginning and end of each work shift. There shall be at least two devices that exhibit a leak rate greater than the test limits in table VII and at least two more devices with leak rates greater than the test limits in Table VII. A leak rate log of the system check devices shall be maintained and made available to the qualifying activity.	JC-13 TG	Correction
31	1014.15: 2.4.5	Edited "Pa =The chamber test pressure, psig converted to atm atmosphere as a function of altitude, e.g. 1 atm = 14.7 psia at sea level."	JC-13 TG	Correction
32	1014.15: 2.4.5.1	Added ". A temperature increase of 2 °C or more during a test can cause the internal pressure of the device to increase and raise the lid up as if the device were leaking. Therefore, a means to compensate leak rate measurements for changes in room temperature and fluctuations in barometric pressure is implemented. The Temperature Compensation Factor (TCF) will prevent a hermetic device from being falsely rejected. The TCF is determined by running devices with leak rates less than the test limits in Table VII with the same test parameters used in production. To set up the TCF for a new part type, a heater is used to raise the chamber temperature by 2 °C to 3 °C over the test time. The ΔPD (change in internal pressure of the device, also called leakage) will be measured which is the result of the device temperature changing and thermal mismatch between the lid and base. The heater is not used in production, only for the one-time test profile set-up run. The units for TCF are psi / °C and allows the OLT system to adjust ΔPD (leakage) for temperature prior to calculating the leak rate. "	JC-13 TG	Correction
33	1014.15: 2.4.6	Added procedure for optical leak test, C_4 , C_4 and C_5.	JC-13 TG	Correction
34	1014.15: 2.4.6.1	Failure criterea for C4 and C5.	JC-13 TG	Addition
35	1014.15: 2.4.7	Test condition C4, C4 and C5 retest.	JC-13 TG	Correction
36	1014.15: 2.8.2.1	Added" The leak rate standards shall be recalibrated at least every five years. "		

37	1014.15: 2.8.3	Added "The number of devices removed from pressurization for leak testing shall be limited such that the test of the last device can be completed within the dwell times listed in Table 1)."	DLA	Correction
38	1014.15: 2.8.3	Added Note : "The flexible method CH2 shall be used unless otherwise specified in the acquisition document, purchase order, or contract."	DLA	Correction
39	1014.15: 2.8.3.1	Complete rewrite of paragraph.	JC-13 TG	Correction
40	1014.15: 2.8.3.2	Complete rewrite of paragraph.	JC-13 TG	Correction
41	1014.15: 2.8.3.3	Complete rewrite of paragraph.	JC-13 TG	Correction
42	1014.15: 2.8.3.3.1	Renumber paragraph.	JC-13 TG	Change
43	1014.15: 2.8.3.3.2	Renumber paragraph.	JC-13 TG	Change
44	1014.15: 2.8.3.3.3	Renumber paragraph.	JC-13 TG	Change
45	1014.15: 2.8.4.1	Changed "internal cavity" to "internal free volume".	JC-13 TG	Clarification
46	1014.15: TABLE V	Updated Table V to "Sample Table instead of Example table, and deleted "Failure Criteria""	JC-13 TG	Clarification
47	1014.15: TABLE V	Remove 10% He fill from the table	JC-13 TG	Correction
48	1014.15: 2.8.5.1	Added " With an appropriate setup and technique, as defined by the equipment manufacturer, a device without a seal or completely missing a lid can be detected as a gross leak. Prior to using this gross leak verification technique, the manufacturer or test facility shall qualify the procedure, and create a profile for every part, for each package type/volume, and associated test method to ensure the system setup is optimized to detect a gross leak.""	JC-13 TG	Correction
49	1014.15: TABLE VII	Corrected device classes	JC-13 TG	Correction
50	1014.15: 4.d.	Edited "d. Retest acceptability ~~for test conditions A and B (see 1.3.1).~~"	JC-13 TG	Clarification
51	1015.11: 3.1.1.1	Add: c. For devices whose maximum operating temperature is stated in terms of case TC , or junction TJ, and whose operation cannot exceed the maximum allowable junction temperature then the ambient life test operating temperature may be reduced. The ambient temperature may be reduced from +125°C TA or Tc, provided TJ is maintained within 10% of its maximum specified value. The life test duration shall be adjusted to ensure the equivalent stress remains the same under these modified conditions. The test conditions and data supporting this alternate method shall be approved by the qualifying activity.	JC-13.2	Addition/Change
52	1015.11: 3.2.1	3.2.1 Test temperature for high power devices. Regardless of power level, devices shall be able to be life tested at their maximum rated operating temperature.	JC-13.2	Addition/Change
53	1015.11: Table I Footnote 1	The higher pressures indicated may only be used with the approval of the part manufacturer…	JC-13.2	Addition/Change
54	1015.11: Table I Footnote 3	Added exceptions for high power devices.	JC-13.2	Addition
55	1034.2: 2.u, and 2.v	Removed Polaroid 52 and 57 film, and added ISO speed film or equivalent	DLA	Change
56	1034.2: 3.1.7 a. and e.	Removed Polaroid 52 and 57 film, and added ISO speed film or equivalent	DLA	Change
57	2001.4: 3	Edited sentence: The device shall be restrained by its case, or by normal mountings, and the leads or cables secured. Unless otherwise specified, a constant acceleration of the value specified shall then be applied to the device for 1 minute minimum in each of the orientations X1, X2, Y1,Y2, Z1, and Z2 (see note 1).	DLA	Change
58	2001.4: 3	Added the sentence: This spin radius shall be from the center of the rotor to the 1st point or element attachment.	DLA	Addition
59	2001.4: 3 Note 1	Added: Dual cavity devices may require multiple spins with the device orientation reversed to properly stress the device.	DLA	Addition
60	2001.4: Figure 2001-1	Add Figure 2001-1: Center of Rotation and clarified point of first attchment.	DLA	Addition
61	2003.12: Entire Method	Rewrite the method to make it a stand-alone method not based on IPC J-STD-002.	JEDEC / DLA	Rewrite

62	2009.12: 1	Deleted word "hermetically"	DLA	Change
63	2009.12: 3.3.6.j.ii	Edited "Columns with copper wire having copper exposed more than 5% of the column surface area."	DLA	Change
64	2009.12: 3.3.7.b	Change to: Any chipping (chip in place/chipout) dimension that exceeds 0.060 inch in any direction on the surface and has a depth that exceeds 25% of the thickness of the affected package element (e.g., cover, base, or wall).	JC 13.2	Change
65	2009.12: Figure 2009-1	Add Figure 2009-1: Cracks vs Chipping. Other paragraphs and figures renumbered accordingly	JC 13.2	Addition
66	2009.12: 3.3.8	Add the phrase: (see Figure 2009-1)	JC 13.2	Addition
67	2009.12: 3.3.8	Change the words: "ceramic chipout" to "ceramic chipping (chip in place/chip out).	JC 13.2	Change
68	2009.12: 3.3.9	Edited Figure 2009-6 to correct reference numbers.	DLA	Change