

PROBLEM ADVISORY**CAES**

1. TITLE: Internal Gas Analysis Failures Hybrid Microcircuits DC-DC Converters			2. DOCUMENT NUMBER HYB-2017-PA-0001	
			3. DATE (Year, Month, Date) 2017, May, 19	
4. MANUFACTURER NAME AND ADDRESS CAES 35 S. Service Rd Plainview, NY 11803			5. MANUFACTURER POINT OF CONTACT NAME Wayne Seemungal	
			6. MANUFACTURER POINT OF CONTACT TELEPHONE (516) 752 - 2421	
			7. MANUFACTURER POINT OF CONTACT EMAIL Wayne.Seemungal@cobhamaes.com	
8. CAGE CODE 88379	9. LDC START See list below	10. LDC END See list below	11. PRODUCT IDENTIFICATION CODE See list below	12. BASE PART See list below
13. BLANK			14. SMD NUMBER See list below	15. DEVICE TYPE DESIGNATOR See list below
			16. RHA LEVELS See list below	17. QML LEVEL See list below
			18. NON QML LEVEL See list below	19. GIDEP NUMBER KP7-P-17-01
20. PROBLEM DESCRIPTION / DISCUSSION / EFFECT				
<p>High levels of moisture exceeding 25,000 ppm/v were detected in DC-DC converter devices subjected to test method 1018 of MIL-STD-883, Internal Gas Analysis (IGA) from date codes 1610 and 1620. This fails the water limit of 5000 ppm/v. Additionally, high levels of CO₂ and hydrogen were detected, which indicate high temperature exposure and an organic breakdown. The high level of water could result in condensation of water on the circuitry when the dew point temperature is reached and result in shorting or react chemically with materials or contamination in the part resulting in failure at some point in time.</p> <p>These parts were previously screened to MIL-PRF-38534 which includes 10 temperature cycles to condition C of method 1010 of MIL-STD-883. This method and condition has an upper temperature limit of 165 degrees C.</p> <p>A Root Cause Corrective Action has been conducted. The cause of the failure was a chart recorder offset caused by a malfunctioning thermocouple within the temperature cycling machine. The offset caused the operator to adjust the chamber temperature setting which caused an over-temp condition resulting in the decomposition of plastic (Delrin) transformer bobbins. It is believed that affected product may have been exposed to 180°C for a period of 8-10 minutes during each 15 minute high temperature dwell. The over temperature condition affects devices processed through a specific temperature cycling machine from June 2014 through December 2016.</p>				

21. ACTION TAKEN / PLANNED

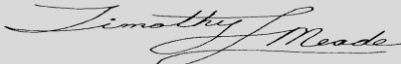
This issue is limited to one specific temperature cycling machine. This machine has been removed from service as of December 2016.

All products (DC-DC converter and other) processed through the specific machine are identified. All customers having received this product have been notified. All affected in-house materials have been contained.

Since the cure temperature of the plastic (Delrin) transformer bobbins as well as the cure temperature of polymeric materials, such as epoxy, may have been exceeded, a sample of product containing various types and amounts of epoxies are being IGA tested. Product without epoxy have also been tested. These test results have been successful and will be submitted to DLA. Contact CAES if you wish to send a unit back to be tested. This evaluation will continue by either new IGA testing or reviewing existing IGA data on all products subjected to the over temperature condition. Customers should contact CAES regarding IGA testing of affected product.

The affected DC-DC converter product was not shipped. The attachment by date code and part number includes all exposed products including MIL-PRF-38534 compliant parts that were tested in the subject temp cycle and shipped between June 2014 and December 2016. An updated GIDEP problem advisory will be issued as necessary.

If you have received a letter from CAES for product shipped to your company from us please contact CAES using the above contact information.

22. DISPOSITIONARY RECOMMENDATION:	CHECK & <input type="checkbox"/> USE AS IS	CONTACT <input checked="" type="checkbox"/> MANUFACTURER	REMOVE & <input type="checkbox"/> REPLACE	CORRECT & <input type="checkbox"/> USE AS SPECIFIED
23. ADEPT REPRESENTATIVE Timothy L. Meade	24. SIGNATURE 			25. DATE 5/24/2017

Affected Parts Listing:

Part Number	Date Code	SMD /SCD#
10073-S	1606	10073-S
10073-S	1607	10073-S
10074-S	1606	10074-S
1606	1545	5727493-2*M+AM9R2D
1606	1547	5727493-2*M+AM9R2D
1606	1551	5727493-2*M+AM9R2D
1606	1606	5727493-2*M+AM9R2D
1606	1607	5727493-2*M+AM9R2D
1606	1608	5727493-2*M+AM9R2D
1606	1612	5727493-2*M+AM9R2D
1606	1614	5727493-2*M+AM9R2D
1606	1642	5727493-2*M+AM9R2D
1606	1646	5727493-2*M+AM9R2D
1606	1648	5727493-2*M+AM9R2D
1606	1649	5727493-2*M+AM9R2D
1606	1650	5727493-2*M+AM9R2D
1607	1524	5727496-2*K+AM9R3D
1607	1547	5727496-2*K+AM9R3D
1607	1609	5727496-2*K+AM9R3D
1607	1612	5727496-2*K+AM9R3D
1607	1613	5727496-2*K+AM9R3D
1607	1614	5727496-2*K+AM9R3D

1607	1616	5727496-2*K+AM9R3D
1607	1634	5727496-2*K+AM9R3D
1607	1635	5727496-2*K+AM9R3D
1607	1642	5727496-2*K+AM9R3D
1607	1644	5727496-2*K+AM9R3D
1607	1648	5727496-2*K+AM9R3D
1607	1649	5727496-2*K+AM9R3D
1607	1650	5727496-2*K+AM9R3D
1646-14S	1617	9P38
1659-AP7-ER00A	1608	ACT-S128K32N-017P7EQ
1659-AP7-ER00A	1609	ACT-S128K32N-017P7EQ
4404-002	1608	PC74809-1
4404N-001-2	1440	5962-9174911HXA*D
4404N-201	1649	8450933-1*C
4406N	1512	100-004-514-001
4406N	1516	100-004-514-001
4406N-001-2	1633	5962-8959207XA*F
4406N-001-2	1636	5962-8959207XA*F
4406N-001-2	1637	5962-8959207XA*F
4406N-001-2	1642	5962-8959207XA*F
4436-DI-501	1527	971956-2022*E
4436-DI-501	1551	971956-2022*E
4436-DI-501	1632	971956-2022*E
4436-DI-501	1633	971956-2022*E
4436-DI-501	1635	971956-2022*E
4451N-002	1625	28004-0004*A
4451N-002	1641	28004-0004*A
4453-001-5	1504	5962-8952211XA*M
4455	1504	ACT4455
4455	1611	TRX/002/01
4455-001-2	1611	5962-9674101H3A*B
4455-001-2	1613	5962-9674101H3A*B
4455-501	1504	3129339-0002*H
4455-501	1541	3129339-0002*H
4455-501	1543	3129339-0002*H
4479-DFI	1530	ACT4479-DFI
4480-DFI-501	1533	52000685-1*A
4480-DFI-501	1540	52000685-1*A
4480-DFI-501	1621	52000685-1*A
4480-DFI-501	1622	52000685-1*A
4480-DFI-501	1623	52000685-1*A
4485-901-1S	1431	5962R0922601KXC*C
4485-901-1S	1632	5962R0922601KXC*C
4487-D-001-2	1611	5962-8757910XA*R
4808N-DF	1606	ACT4808N-DF
4808N-DF	1647	ACT4808N-DF
4808N-DF	1648	ACT4808N-DF
5028-301-1S	1623	5962-0423503KXC*D

5028-3-1-S	1617	5028-3-1-S
5028-3-1-S	1632	RDC5028-3-1-S
5028-931-1S	1617	5962H0423503KXC*D
5028-931-1S	1632	5962H0423503KXC*D
5032-001-2S	1624	5962-0625102KXA*D
5032-001-2S	1633	5962-0625102KXA*D
5032-001-2S	1633	5962-0625102KXA*D
5032-001-2S	1634	5962-0625102KXA*D
5032-S	1617	PWM5032-S
5032-S	1624	PWM5032-S
5034-001-1S	1634	5962-0625102KYC*D
5035-501-S	1545	SCD-P42-0046-101*-
5101-1-507	1611	5914071-4*M
5101-1-507	1612	5914071-4*M
5101-1-507	1616	5914071-4*M
5101-1-507	1617	5914071-4*M
5101-1-507	1621	5914071-4*M
5101-1-507	1623	5914071-4*M
5101-1-507	1624	5914071-4*M
5101-1-507	1625	5914071-4*M
5101-1-507	1629	5914071-4*M
5101-1-507	1632	5914071-4*M
5101-1-507	1641	5914071-4*M
5101-1-507	1648	5914071-4*M
5900-901-1S	1541	5962H1024101KXC*-
5900-901-2S	1646	5962H1024101KXA*-
5900-901-2S	1649	5962H1024101KXA*-
5962-901-1S	1541	5962H1422102KXC*-
7003-8S	1429	9N38-004FHA*R
7006	1646	330909-001*C
7006	1647	330909-001*C
7049-5S	1606	9P38-002FHA*M
7049-5S	1607	9P38-002FHA*M
7101-3S	1522	64002244-001*C
7101-3S	1525	64002244-001*C
7101-3S	1530	64002244-001*C
7137-3S	1632	8268438-720*G
7137-3S	1633	8268438-720*G
7232	1541	8530370-1*-
7238	1535	8530376-1*-
7248	1520	8530386-1*-
7252	1530	8530390-1*-
7316-S	1604	D016291-0001*17
7316-S	1605	D016291-0001*17
7317-S	1604	D016292-0001*16
7317-S	1606	D016292-0001*16
7317-S	1610	D016292-0001*16
7319-S	1604	D016297-0001

7319-S	1605	D016297-0001*13
7319-S	1606	D016297-0001*13
7325-6S	1636	8272771-720*H
7325-6S	1637	8272771-720*H
7327-1S	1529	8273009-720*C
7327-1S	1545	8273009-720*C
7327-1S	1622	8273009-720*D
7327-1S	1624	8273009-720*D
7327-1S	1630	8273009-720*D
7327-1S	1639	8273009-720*D
7360-S	1429	239K563G01*D
7360-S	1430	239K563G01*D
7360-S	1537	239K563G01*D
7382-S	1512	214K504G02*D
7385-S	1544	214K514G03*G
7386-S	1541	214K516G02*G
7386-S	1608	214K516G02*G
7391-S	1504	214K528G02*C
8500-503-1S	1618	8500-5003-1S
8501-S	1639	5962-0050202KXC*D
8522-201-1S	1431	5962-0923101KXC*A
8652-901-1S	1623	5962R0920101KZC
8657-901-2S	1615	5962R0920102KXA*D
8658-201-1S	1635	5962-0920102KYC*D
8661-901-1S	1444	5962R0920602KXC*A
8662-201-1S	1504	5962-0920701KXC*F
8662-201-1S	1541	5962-0920701KXC*F
8662-201-2S	1504	5962-0920701KXA*G
8662-201-2S	1541	5962-0920701KXA*F
8662-201-2S	1634	5962-0920701KXA*G
8662-901-1S	1504	5962R0920701KXC*F
8662-901-2S	1504	5962R0920701KXA*F
8662-901-2S	1634	5962R0920701KXA*G
8662-S	1541	VRG8662-S
8663-901-2S	1617	5962R0920702KYA*F
8666-901-1S	1610	5962R1120501KYC*B
8666-901-1S	1612	5962R1120501KYC*C
8666-901-1S	1613	5962R1120501KYC*B
8666-901-1S	1632	5962R1120501KYC*C
8666-901-2S	1610	5962R1120501KYA*B
8666-901-2S	1617	5962R1120501KYA*C
8666-901-2S	1632	5962R1120501KYA
8666-901-2S	1632	VRG8666-901-2S
8666-901-2S	1632	5962R1120501KYA*B
8668-901-2S	1615	5962R1320301KZA*B
CT1576-1S	1604	9N01-001FHA*AE
CT1698-501	1620	1812745*A
CT1860	1433	MIS20038/46*C

CT1860	1503	MIS-20038/46*C
CT1860	1623	MIS20038-46*C
CT1860	1642	MIS20038-46*C
CT1860	1642	MIS20038/46*C
CT1861	1508	MIS-20038/47*C
CT2512-001-1	1431	5962-8753503XX*F
CT2578D-02-QM-F84	1503	13508305*A
CT2578D-02-QM-F84	1503	13508305*A
CT2578D-02-QM-F84	1647	13508305*A
CT2578D-02-QM-F84	1648	13508305*A
MASP-060166- LNAFLT	1622	54-0006-0166-001*C