Title Short Circuit Ring

1.0 SCOPE

1.1 Content

This specification covers the performance, tests and quality requirements for the TE Short Circuit Ring (SCR).

1.2 Qualification

When tests are performed on the subject product line, the procedures specified in TE 109 series specifications shall be used unless otherwise specified. All inspections shall be performed using the applicable inspection plans and product drawings.

2.0 APPLICABLE DOCUMENTS

The following documents form part of this specification to the extent specified herein. In the event of conflict between the requirements of this specification and the product drawing, the product drawing shall take precedence. In the event of conflict between the requirements of this specification and the referenced documents, the referenced documents shall take precedence.

2.1 TE Drawings

1703884 / C1703884:	SHORT CIRCUIT RING ASSY
1703885:	SHORT CIRCUIT RING HSG
1703886:	SHORT CIRCUIT CONTACT

2.2 TE Documents

2.2.1 109-1: General requirements for test specifications.

2.3 Other Documents

2.3.1 VDA Interface Drawing 8377216.
2.3.2 ISO 19072: Connection interface for pyrotechnic devices - Part 1: Pocket interface definition
2.3.3 ISO 19072: Connection interface for pyrotechnic devices - Part 2: Test methods and general performance requirements
2.3.4 ISO 8092: Connections for on-board electrical wiring harnesses – Part 2: Definitions, test methods and general requirements.

3.0 DEFINITION OF TERMS

For the purpose of this specification, the following terms shall apply:

3.1 Short Circuit Contact

An electrically conductive member, used as a component of an assembly to form a circuit connection.

3.2 Housing

A dielectric component member of an assembly, made of insulating material that retains the shorting contact.

3.3 SCR (Short Circuit Ring)

A short circuit ring comprises of a short circuit contact to link gas generator pins and a housing to retain the squib connector in the gas generator.

4.0 MATERIALS

4.1 **Short circuit Contact** : CuSn with gold plated contact interface.

4.2 **Housing** : Moulded in 10% Glass Filled PBT.

5.0 RATINGS

5.1 Voltage :-
6-18V

5.2 Temperature :-
-40 to +105 degC

Storage Temperature :-
-40 to +90 degC (+100 degC, 1h)

5.3 Relative Humidity :-
Up to 95%

6.0 TEST DESCRIPTION

The product is designed to meet the electrical, mechanical and environmental performance requirements specified in the following sections of this document. All tests are performed at ambient environmental conditions per AMP specification 109-1 unless otherwise specified.

TEST DESCRIPTION	REQUIREMENT	METHOD
6.1 Visual inspection	The test specimens are to be inspected for defects or changes before and after the test.	In accordance with ISO19072-2, Part 4.2
6.2 Squib connector Mating and un-mating (10 cycles)	Shall meet requirements of subsequent tests. Mating / un-mating force measurement is not required.	In accordance with ISO 8092-2, Part 4.3 (Mating / un-mating force measurement is not required.)
6.3 Mechanical strength of SCR in squib holder	>10N	In accordance with ISO19072-2, Part 4.5
6.4 Combination of temperature / humidity / vibration	Shall meet requirements of subsequent tests. Contact resistance measurements are not required.	In accordance with ISO19072-2, Part 4.6 (Contact resistance measurements are not required.)
6.5 Polarisation	Electrical connection shall not be possible with ≤100N Shorting contact shall not be opened with ≤200N	In accordance with ISO19072-2, Part 4.8
6.6 Thermal Ageing	Shall meet requirements of subsequent tests	In accordance with ISO19072-2, Part 4.12 Duration: 100h, Temp: 125 degC Test to be completed with squib connector mated.
6.7 Opening and Closing of the short circuit	Correct opening sequence as per ISO 19072-2, table B.1	In accordance with ISO19072-2, Part 4.13
6.8 Short Circuit resistance	Circuit resistance from pin to pin across shorting contact: ≤100mOhms	In accordance with ISO19072-2, Part 4.14
6.9 Shorting contact Force	>50 g	Measure the shorting contact force in its shorted position against pin (see drg 1703886 for required contact deflection).
6.10 Shorting contact retention force	>30N	Contact to be removed from housing at a speed rising to 25mm/min.

7.0 TEST SEQUENCE

TEST DESCRIPTION	TEST GROUP					
	A	B	C	D	E	F
6.1 Visual inspection	1, 4	1, 5	1, 3	1, 7	1, 5	1, 3
6.2 Squib connector Mating and un-mating (10 cycles)				2		
6.3 Mechanical strength of SCR in squib holder	3					
6.4 Combination of temperature / humidity / vibration		3				
6.5 Polarisation			2			
6.6 Thermal Ageing	2			5	3	
6.7 Opening and Closing of the short circuit				3		
6.8 Short Circuit resistance		2,4		4,6		
6.9 Shorting contact Force					2,4	
6.10 Shorting contact retention force						2

8.0 TEST SAMPLES

DESCRIPTION	SAMPLE QUANTITIES					
	A	B	C	D	E	F
SCR ASSY 1-1703884-1	10	10	4	10	10	10
SCR ASSY 2-1703884-1			3			
SCR ASSY 3-1703884-1			3			
SQUIB connector Code A & 1M Cable assy		10	4	10	10	
SQUIB connector Code B & 1M Cable assy			3			
SQUIB connector Code C & 1M Cable assy			3			
Pocket interface - Type VDA AK /BNA	5*	5	5	5		
Pocket interface – Type ISO19072-1	5*	5	5	5		

* Pocket interface for test group A supplied without pins / inert initiator