Product Specification
OLS700PS

REVISION HISTORY			
Rev	**Description of Change**	**Author**	**Approval Submit Date**
0	ECN# 2225	A Or	8/3/2017
1	ECN# 2289	A Or	1/3/2018

1.0 Scope

This specification establishes the requirements of the OLS700PS from ISOLINK intended to use in the environments encountered by high reliability spacecraft applications. The OLS700PS optocoupler is intended to meet the equivalent of JANS requirement of MIL-PRF-19500 as specified, or where specified herein. The lot identification and the JANS inspection lot requirements are applicable. Except where noted herein, inspection tests will be done in accordance with MIL-PRF-19500, or unless otherwise specified by the purchase order.

2.0 References

The following documents, of the issue in effect on the date of the purchase order, form a part of this specification and are intended to meet the equivalent JANS requirements to the extent specified herein.

Military specifications and standards:

MIL-PRF-19500	Performance Specification Semiconductor Devices, General Specification For
MIL-STD-750	Test Methods for Semiconductor Devices

3.0 Order of Precedence

For the purpose of interpretation and in case of conflict with regard to the documentation, the following order of precedence shall apply:

a) Purchase order or contract

b) This specification

c) Referenced military specifications or standards

d) Other documents

4.0 Requirements

4.1 General

The devices shall meet OLS700 datasheet requirements with the following additions and modifications included herein.

4.2 Physical and Mechanical Characteristics

4.2.1 Outline Dimensions

The devices shall meet OLS700 datasheet requirements for non-solder-dipped devices.

4.2.2 Lead Finish

Standard finish on leads shall be gold plated

For hot lead/tin solder dipped parts, the part number is OLS700PS-1.

4.3 Electrical Characteristics

The devices shall meet OLS700 datasheet requirements. Parameter Drift values are listed within Table 1.

4.3.1 Handling and Test Precautions

The optocoupler is rated at ESD Class 2 (>2000V). However it can be susceptible to damage by Electro Static Discharge (ESD) and Electrical Over Stress (EOS). Suitable precautions shall be employed for protection during all phases of manufacturing, testing, packaging, shipment, and any handling.

4.4 Single lot Elements

Each active element shall be issued from a single lot.

5.0 Quality Assurance Provisions

5.1 Responsibility for Inspection

Isolink shall be responsible for the performance of all inspection requirements as specified herein. Isolink may utilize its own or any other inspection facilities or services acceptable to the customer.

5.1.1 Final Acceptance Inspection

Final acceptance inspection consists of verification of screening tests and QCI of Group A, B, and C, and shall be specified on the purchase order.

All devices submitted for final acceptance inspection shall be from the same inspection lot, unless otherwise specified.

5.2 Screening Requirements

The screening is to be performed in accordance with MIL-PRF-19500 with the additions or modifications herein.

5.2.1 Temperature Cycling: Condition C, -65°C to +150°C (maximum storage temperature).

5.2.2 Surge: Not performed.

5.2.3 Thermal impedance: Not performed.

5.2.4 PIND: Not applicable to optocouplers. May be performed as required by purchase order.

5.2.5 Initial Electrical and Drift

The parameters specified the OLS700 datasheet, 25°C static only, and Table 1 shall be measured and recorded for each optocoupler. All devices that fail to meet the requirements shall be removed from the lot and the quantities removed shall be noted on the traveler.

5.2.6 High Temperature Reverse Bias (HTRB): Not applicable.

5.2.7 Interim Electrical Measurement and Drift

The parameters specified the OLS700 datasheet, 25°C static only (except isolation), and Table 1 shall be measured and recorded for each optocoupler. All devices that fail to meet the requirements shall be removed from the lot and the quantities removed shall be noted on the traveler.

5.2.8 Burn-in Test

Each optocoupler shall be tested in accordance with MIL-STD-750, Method 1039. The following details shall apply:

I_F = 10 mA

V_{CC} = 10 V

T_A = 125°C ± 3°C

t = 240 hrs min

5.2.9 Final Electrical Measurement and Drift

The parameters specified the OLS700 datasheet, 25°C static only (except isolation), and Table 1 shall be measured and recorded for each optocoupler. All devices that fail to meet the requirements shall be removed from the lot and the quantities removed shall be noted on the traveler.

5.2.10 Electrical Measurement: High (+125°C) and Low (-55°C) Temperature

All components shall be measured at high and low temperature in accordance with the OLS700 datasheet. All data must be recorded.

Table 1: Parameter Drift Values

Characteristics	Symbol	MIL-STD-750 Method Test conditions	Change limits	Unit	Note
Servo Current Gain	K1 / K2	25°C only	± 15	%	
Transfer Gain	K3	25°C only	± 10	%	

6.0 Quality Conformance Inspection

6.1 Test Requirements

Subgroups noted as "Available Upon Request" or "N/A" are not performed except as required by purchase order.

6.2 Group A Inspection

Group A inspection tests shall be conducted in accordance with MIL-PRF-19500, as required by purchase order. Subgroups 5, 6 and 7 are not applicable.

6.3 Group B Inspection

Group B inspection tests shall be conducted in accordance with MIL-PRF-19500. The customer purchase order shall specify each required subgroup. Subgroup 6 is available upon request.

6.3.1 Disposition of Group B Sample Units

Sample units which have been subjected to Group B Inspection, except for Subgroup 1 and 7, shall not be delivered as a part of the quantity on the purchase order.

6.3.2 Subgroup 4: Intermittent Operating Life

Each optocoupler shall be tested in accordance with MIL-STD-750, Method 1037. The following details shall apply:

I_F = 10 mA

V_{CC} = 10 V

T_A = 125°C ± 3°C

t = 30 sec. on/off minimum

N = 2000 cycles minimum

6.3.3 Subgroup 5: Accelerated Steady-State Operating Life

Each optocoupler shall be tested in accordance with MIL-STD-750, Method 1027. The following details shall apply:

I_F = 10 mA

V_{CC} = 10 V

T_A = 125°C ± 3°C

t = 1000 hrs min

6.3.4 Subgroup 6: Available upon request, as specified by purchase order.

6.3.5 Subgroup 7: High-Temperature Life (non-operating)

Each optocoupler shall be tested in accordance with MIL-STD-750, Method 1027. The following details shall apply:

t = 340 hrs min

T_A = $T_{STG(max)}$

6.4 Group C Inspection

Group C inspection tests shall be conducted in accordance with MIL-PRF-19500. The customer purchase order shall specify each required subgroup.

6.4.1 Disposition of Group C Sample Units

Sample units which have been subjected to Group C Inspection shall not be delivered as a part of the quantity on the purchase order.

6.4.2 Subgroup 2: Moisture Resistance; omit initial conditioning.

6.4.3 Subgroup 4: Available upon request, as specified by purchase order.

6.4.4 Subgroup 5: Available upon request, as specified by purchase order.

6.4.5 Subgroup 6: Steady State Operating Life

Group C, Subgroup 6, is not required if Group B, Subgroup 5, is performed on the same inspection lot, unless otherwise specified on the purchase order.

Each optocoupler shall be tested in accordance with MIL-STD-750, Method 1026. The following details shall apply:

I_F = 10 mA

V_{CC} = 10 V

T_A = 125°C ± 3°C

t = 1000 hrs min

6.4.6 Subgroup 7: Not applicable.

7.0 Documentation

7.1 Data

The following data shall accompany the parts shipment. The data shall include, but not necessarily be limited to, the following information:

- Customer purchase order number
- Isolink part number
- Isolink's name and part number
- Part lot identification code
- Quantity shipped
- Variables data (read and record) and the delta calculations resulting from Screening.
- Attributes data for screening test summary
- Quality Conformance Inspection Data, including Groups A, B, and C attributes and variables data as required
- Radiographic images

All data shall clearly indicate that the test results are in compliance with specification requirements, and shall be signed by cognizant test personnel. The accuracy and integrity of the data and screening test results shall be certified by the manufacturer's quality assurance organization and shall have evidence of such verification.

8.0 Delivery

8.1 Packaging

The devices shall be packaged in such a manner that they will be protected during shipments and storage. Package shall be suitable to provide maximum physical protection.