



**CONTACTS, ELECTRICAL, CRIMP, GAUGE 26,
FOR 3401/082 CONNECTORS**

ESCC Detail Specification No. 3401/083

Issue 4	June 2014
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DCR No.	CHANGE DESCRIPTION
859	Specification upissued to incorporate editorial changes per DCR.

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1 GENERAL

1.1 SCOPE

This specification details the ratings, physical and electrical characteristics, test and inspection data for Contacts, Electrical, Crimp, Gauge 26, for 3401/082 Connectors.

These contacts shall be packed separately from the connectors and may be procured either with the connectors or separately.

This specification shall be read in conjunction with:

- ESCC Generic Specification No. 3401, Connectors, Electrical, Non-Filtered, Circular and Rectangular.
- ESCC Detail Specification No. 3401/082, Connectors, Electrical, Rectangular, Microminiature, Removable Gauge 26 Crimp Contacts, Based on Type 8MCG.

the requirements of which are supplemented herein.

1.2 TYPE VARIANTS

The different sizes of contacts specified herein are scheduled in Table 1(a).

1.3 MAXIMUM RATINGS

The maximum ratings, which shall not be exceeded at any time during use or storage, applicable to the contacts specified herein, are scheduled in Table 1(b).

1.4 PARAMETER DERATING INFORMATION (FIGURE 1)

Not applicable.

1.5 PHYSICAL DIMENSIONS

The physical dimensions of the contacts specified herein are shown in Figure 2.

TABLE 1(a) - TYPE VARIANTS

Characteristics	Variants				Unit
	01	02	03	04	
Type	Male	Female	Male	Female	-
Mating End Size	26	26	26	26	AWG
Crimp Barrel Size	26	26	24	24	AWG
Accept Wire	26, 28	26, 28	24	24	AWG
Rated Current	2	2	2	2	A
Maximum Weight	0.04	0.06	0.04	0.06	g

Characteristics			Variants				Unit
			01	02	03	04	
Engagement and Separation - Contact Engagement Force	Maximum Force		-	1.667	-	1.667	N
	Test Pin Diameter	Minimum	-	0.495	-	0.495	mm
		Maximum	-	0.519	-	0.519	mm
Engagement and Separation - Contact Separation Force	Maximum Force		-	0.14	-	0.14	N
	Test Pin Diameter	Minimum	-	0.497	-	0.497	mm
		Maximum	-	0.521	-	0.521	mm
Contact Capability - Pick-up Weight	Weight		-	14.3	-	14.3	g
	Test Pin Diameter	Minimum	-	0.497	-	0.497	mm
		Maximum	-	0.521	-	0.521	mm
	Minimum Insertion Depth		-	3	-	3	mm
Contact Capability - Drop Weight	Weight		-	81.5	-	81.5	g
	Test Pin Diameter	Minimum	-	0.495	-	0.495	mm
		Maximum	-	0.519	-	0.519	mm
	Minimum Insertion Depth		-	3	-	3	mm
Contact Retention Force (in Insert)		Maximum	15	15	15	15	N
Contact Insertion and Withdrawal Forces		Maximum	13.5	13.5	13.5	13.5	N
Probe Damage	Moment		N/A	0.9	N/A	0.9	Ncm
	Probe Diameter	Minimum	-	0.495	-	0.495	mm
		Maximum	-	0.521	-	0.521	mm
Oversize Pin Exclusion	Maximum Force		N/A	0.8	N/A	0.8	N
	Test Pin Diameter	Minimum	-	0.765	-	0.765	mm
		Maximum	-	0.77	-	0.77	mm

TABLE 1(b) - MAXIMUM RATINGS

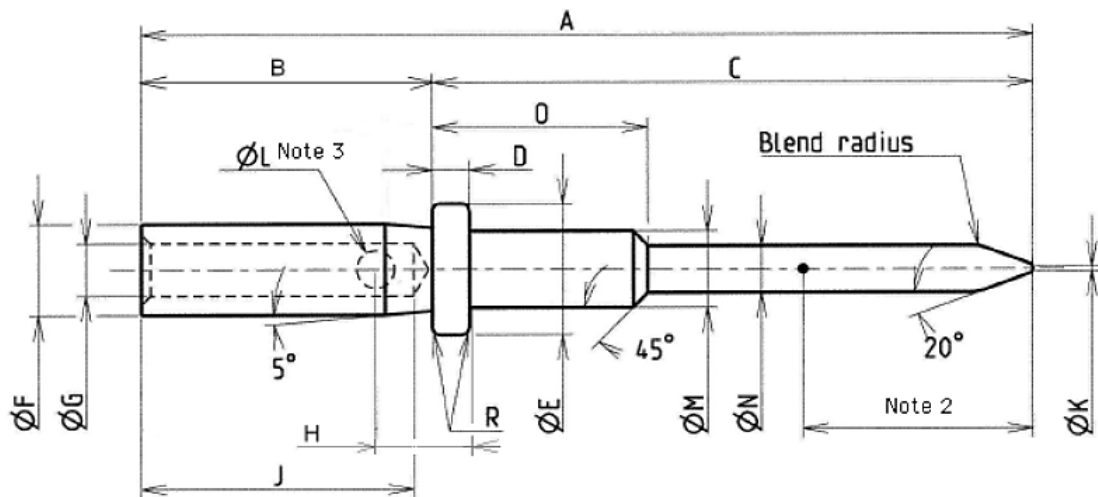
No.	Characteristics	Symbol	Maximum Ratings		Unit
			Min	Max	
1	Rated Current	I_{CR}	-	See Table 1(a)	A
2	Operating Temperature Range	T_{op}	-55	+125	°C
3	Storage Temperature Range	T_{stg}	-65	+125	°C

FIGURE 1 - PARAMETER DERATING INFORMATION

Not applicable.

FIGURE 2 - PHYSICAL DIMENSIONS

VARIANTS 01 AND 03 - MALE CONTACTS

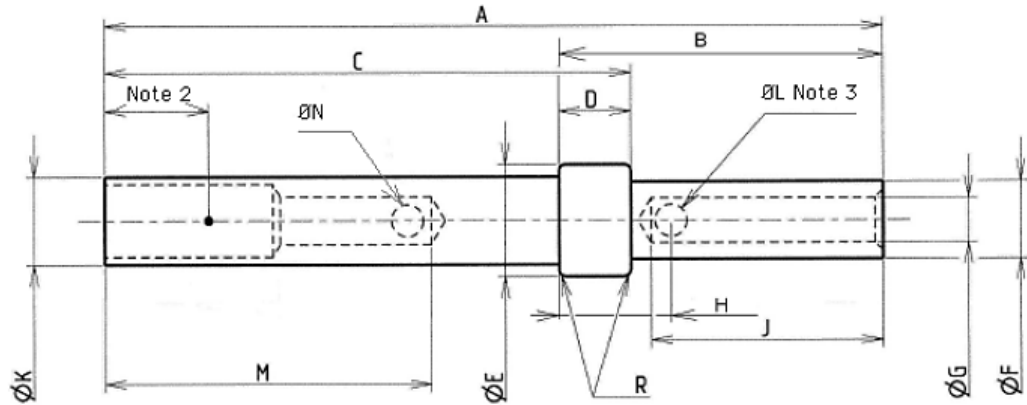


	A	B	C	D	ØE	ØF		ØG		H	J	ØK	ØL	ØM	ØN	O	R
						Var 01	Var 03	Var 01	Var 03								
Min	-	3.1	6	0.35	1.37	0.92	1	0.56	0.73	1	2.9	-	0.4	0.8	0.495	1.85	0.04
Max	9.8	3.25	6.1	0.41	1.407	0.98	1.08	0.6	0.76	1.1	3.1	0.15	0.5	0.823	0.521	1.91	0.08

NOTES:

1. All dimensions are in millimetres.
2. Measurement point for plating thickness: 2 ± 1 mm.
3. Inspection hole may be L x L square and shall only penetrate one wall of the crimp barrel.

FIGURE 2 - PHYSICAL DIMENSIONS (CONTINUED)
VARIANTS 02 AND 04 - FEMALE CONTACTS



	A	B	C	D	ØE	ØF		ØG		H	J	ØK	ØL	M	ØN	R
						Var 01	Var 03	Var 01	Var 03							
Min	-	4.05	6.55	0.85	1.37	0.92	1	0.56	0.73	1.4	2.9	1.05	0.4	4.1	0.4	0.04
Max	9.8	4.15	6.6	0.907	1.407	0.98	1.08	0.6	0.76	1.51	3.1	1.1	0.5	-	0.5	0.08

NOTES:

1. All dimensions are in millimetres.
2. Measurement point for plating thickness: 2 ± 1 mm.
3. Inspection hole may be L x L square and shall only penetrate one wall of the crimp barrel.

2 APPLICABLE DOCUMENTS

The following documents form part of this specification and shall be read in conjunction with it:

- (a) ESCC Generic Specification No. 3401, Connectors, Electrical, Non-Filtered, Circular and Rectangular.
- (b) ESCC Generic Specification No. 3401/082, Connectors, Electrical, Rectangular, Microminiature, Removable Gauge 26 Crimp Contacts, Based on Type 8MCG.

3 TERMS, DEFINITIONS, ABBREVIATIONS, SYMBOLS AND UNITS

For the purpose of this specification, the terms, definitions, abbreviations, symbols and units specified in ESCC Basic Specification No. 21300 shall apply.

4 REQUIREMENTS

4.1 GENERAL

The complete requirements for procurement of the components specified herein are stated in this specification and ESCC Generic Specification No. 3401. Deviations from the Generic Specification, applicable to this specification only, are detailed in Para. 4.2.

Deviations from the Generic Specification and this Detail Specification, formally agreed with specific Manufacturers on the basis that the alternative requirements are equivalent to the ESCC requirements and do not affect the components' reliability, are listed in the appendices attached to this specification.

4.2 DEVIATIONS FROM GENERIC SPECIFICATION

4.2.1 Deviations from Special In-Process Controls

None.

4.2.2 Deviations from Final Production Tests (Chart II(b))

None.

4.2.3 Deviations from Burn-in and Electrical Measurements (Chart III)

Chart III is not applicable.

4.2.4 Deviations from Qualification Tests (Chart IV)

(a) Para. 9.31, Solderability: Not applicable.

4.2.5 Deviations from Lot Acceptance Tests (Chart V)

(a) Para. 9.31, Solderability: Not applicable.

4.3 MECHANICAL REQUIREMENTS

4.3.1 Dimension Check

The dimensions of the contacts specified herein shall be verified in accordance with requirements set out in Para. 9.6 of ESCC Generic Specification No. 3401 and shall conform to those shown in Figure 2 of this specification.

4.3.2 Weight

The maximum weight of the contacts specified herein shall be as specified in Table 1(a).

4.3.3 Contact Capability

For the purpose of this test, the pick-up and drop weights shall be as specified in Table 1(a).

4.3.4 Contact Retention (in Insert)

The contact retention force shall be as specified in Table 1(a).

4.3.5 Mating and Unmating Forces

As specified in ESCC Detail Specification No. 3401/082.

4.3.6 Insert Retention (in Shell)

As specified in ESCC Detail Specification No. 3401/082.

- 4.3.7 Jackscrew Retention
As specified in ESCC Detail Specification No. 3401/082.
- 4.3.8 Contact Insertion and Withdrawal Forces
The contact insertion and withdrawal forces shall be as specified in Table 1(a).
- 4.3.9 Engagement and Separation Forces
The diameter of the test pin and the engagement and separation forces of the female contacts shall be as specified in Table 1(a). Details of the test pin are specified in Figure 3.
- 4.3.10 Oversize Pin Exclusion
The diameter of the test pin and the force applied to it shall be as specified in Table 1(a).
- 4.3.11 Probe Damage
The probe diameter and the moment at the end of the probe shall be as specified in Table 1(a).
- 4.3.12 Solderability
Not applicable.
- 4.4 MATERIALS AND FINISHES
The materials and finishes shall be as specified herein. Where a definite material is not specified, a material which will enable the contacts specified herein to meet the performance requirements of this specification shall be used. Acceptance or approval of any constituent material does not guarantee acceptance of the finished product.
- 4.4.1 Shells
As specified in ESCC Detail Specification No. 3401/082.
- 4.4.2 Inserts
As specified in ESCC Detail Specification No. 3401/082.
- 4.4.3 Contacts
- 4.4.3.1 *Female Contacts*
The contact body and the spring element shall be made of copper alloy with an underplate of 1µm minimum of nickel or copper, gold plated with 1.27µm of gold.
- 4.4.3.2 *Male Contacts*
The contact body shall be made of copper alloy with an underplate of 1µm minimum of nickel or copper, gold plated with 1.27µm minimum of gold.
- 4.4.4 Accessories
As specified in ESCC Detail Specification No. 3401/082.
- 4.4.5 Magnetism Level
As specified in ESCC Detail Specification No. 3401/082.

4.5 MARKING

4.5.1 General

The marking of all components delivered to this specification shall be in accordance with the requirements of ESCC Basic Specification No. 21700 and the following subparagraphs.

These components being too small to accommodate the marking as specified hereafter, the full marking information shall accompany each of the components in its primary package. Such marking shall comprise:

- (a) The ESCC Component Number.
- (b) Traceability information.

4.5.2 The ESCC Component Number

The ESCC Component Number shall be constituted and marked as follows:

Example: 340108301B

- Detail Specification Number: 3401083
- Type Variant Number (see Table 1(a)): 01
- Testing Level: B

4.5.3 Traceability Information

Traceability information shall be marked in accordance with the requirements of ESCC Basic Specification No. 21700.

4.6 ELECTRICAL MEASUREMENTS

4.6.1 Electrical Measurements at Room Temperature

The parameters to be measured at room temperature are scheduled in Table 2. Unless otherwise specified, measurements shall be performed at $T_{amb} = +22 \pm 3 \text{ }^{\circ}\text{C}$.

4.6.2 Electrical Measurements at High and Low Temperatures (Table 3)

Not applicable.

4.6.3 Circuits for Electrical Measurements (Figure 4)

Not applicable.

4.7 BURN-IN AND ELECTRICAL MEASUREMENTS

Not applicable.

4.8 ENVIRONMENTAL AND ENDURANCE TESTS

4.8.1 Measurements and Inspections on Completion of Environmental Tests

The parameters to be measured and inspections to be performed on completion of environmental testing are scheduled in Table 6. Unless otherwise specified, the measurements shall be performed at $T_{amb} = +22 \pm 3 \text{ }^{\circ}\text{C}$.

4.8.2 Measurements and Inspections at Intermediate Points During Endurance Tests

Not applicable.

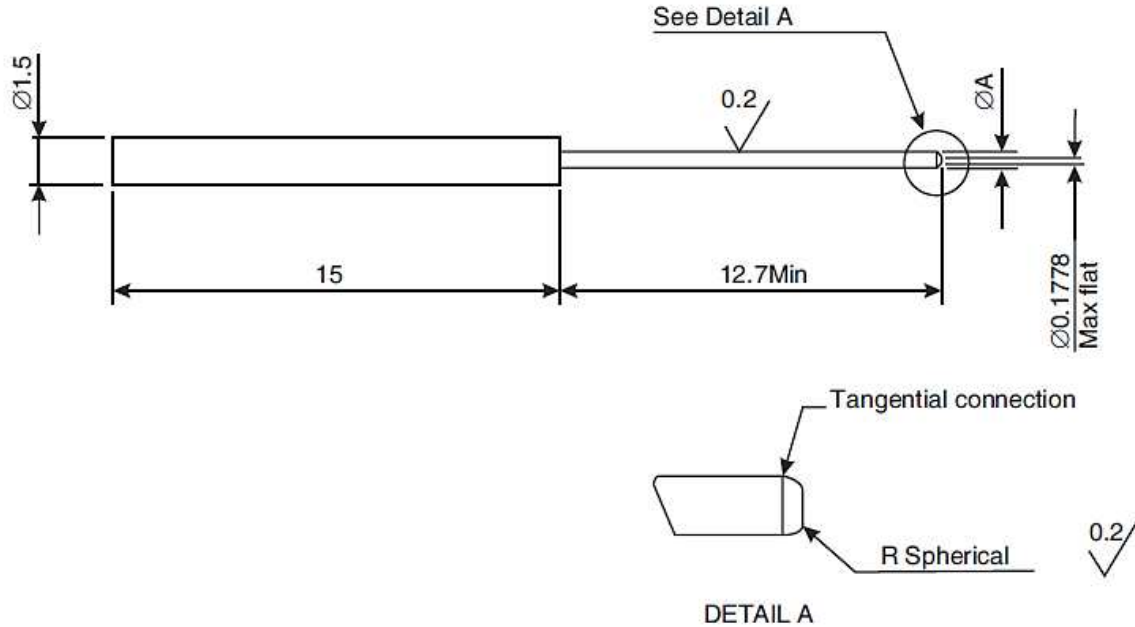
- 4.8.3 Measurements and Inspections on Completion of Endurance Tests
The parameters to be measured and inspections to be performed on completion of endurance testing are scheduled in Table 6. Unless otherwise specified, the measurements shall be performed at $T_{amb}=+22 \pm 3^{\circ}C$.
- 4.8.4 Conditions for Operating Life Test (Part of Endurance Testing) (Table 5)
Not applicable.
- 4.8.5 Electrical Circuit for Operating Life Test
Not applicable.
- 4.8.6 Conditions for High Temperature Storage Test (Part of Endurance Testing)
The requirements for the high temperature storage test are specified in Section 9 of ESCC Generic Specification No. 3401. The conditions for high temperature storage testing shall be the maximum storage temperature specified in Table 1(b) of this specification.

TABLE 2 - ELECTRICAL MEASUREMENTS AT ROOM TEMPERATURE

No.	Characteristic	Symbol	ESCC 3401 Test Method	Test Condition	Limits		Unit
					Min	Max	
1	Low Level Contact Resistance	R_{cl}	Para. 9.1.1.3	Para. 9.1.1.3(b)	-	6	$m\Omega$
2	Rated Current Contact Resistance	R_{cr}	Para. 9.1.1.3	Para. 9.1.1.3(b)	-	5	$m\Omega$

TABLES 3, 4 AND 5 – NOT APPLICABLE

FIGURE 3 - TEST PIN FOR SOCKET CONTACT ENGAGEMENT TEST



NOTES:

1. All dimensions are in millimetres.
2. Test pin ØA: see Table 1(a).
3. Test pin materials: tool steel or tungsten carbide with a surface roughness of 0.2µm.

TABLE 6 - MEASUREMENTS AND INSPECTIONS ON COMPLETION OF ENVIRONMENTAL AND ENDURANCE TESTING

No.	ESCC Generic Spec. No. 3401		Measurements and Inspections		Symbol	Limits		Unit
	Environmental and Endurance Tests Note 1	Test Method and Conditions	Identification	Conditions		Min	Max	
01	Wiring	Para. 9.10 and Table 1(a) of this spec.	Low Level Contact Resistance	Table 2, Item 1	R _{cl}	Table 2, Item 1		mΩ
02	Vibration	Para. 9.11	ESCC 3401/082	-	-	-	-	
03	Shock or Bump	Para. 9.12	ESCC 3401/082	-	-	-	-	
04	Climatic Sequence	Para. 9.13	ESCC 3401/082	-	-	-	-	
05	Plating Thickness	Para. 9.14	Thickness	-	-	Para. 4.4.3 of this spec.		
06	Joint Strength	Para. 9.15	ESCC 3401 Para. 9.15	-	-	-	-	
07	Rapid Change of Temperature	Para. 9.16	ESCC 3401/082	-	-	-	-	

No.	ESCC Generic Spec. No. 3401		Measurements and Inspections		Symbol	Limits		Unit
	Environmental and Endurance Tests Note 1	Test Method and Conditions	Identification	Conditions		Min	Max	
08	Contact Retention (in Insert)	Para. 9.17 & Para. 4.3.4 of this spec.	Contact Displacement	-	-	ESCC 3401 Para. 9.17		
09	Endurance	Para. 9.18	Initial Low Level Contact Resistance	Table 2, Item 1	R_{cl}	Table 2, Item 1 Record Values		mΩ
			Final Low Level Contact Resistance Drift	Table 2, Item 1	ΔR_{cl}	-	3	mΩ
10	Mating/Unmating Forces	Para. 9.20	ESCC 3401/082	-	-	-	-	
11	High Temperature Storage	Para. 9.21	Initial Low Level Contact Resistance	Table 2, Item 1	R_{cl}	Record Values		mΩ
			Final Low Level Contact Resistance Drift	Table 2, Item 1	ΔR_{cl}	-	3	mΩ
			Rated Current Contact Resistance	Table 2, Item 2	R_{cr}	-	6	mΩ
			Contact Retention (in Insert)	Para. 4.3.4 of this spec.	-	ESCC 3401 Para. 9.17		
12	Corrosion	Para. 9.22	Internal Temperature	-	-	-	-	
13	Insert Retention (in Shell)	Para. 9.23 & Para. 4.3.6 of this spec	ESCC 3401/082	-	-	-	-	
14	High Temperature Measurements	Para. 9.25	ESCC 3401/082	-	-	-	-	
15	Overload Test	Para. 9.26	Rated Current Contact Resistance	Table 2, Item 2	R_{cr}	Table 2, Item 2		mΩ
16	Maintenance Aging	Para. 9.27	Visual Examination	-	-	-	-	
			Contact Retention	Para. 4.3.4 of this spec.	-	ESCC 3401 Para. 9.17		N
			Contact Insertion and Withdrawal Forces	Para. 4.3.8 of this spec.	-	Para. 4.3.8		N
17	Engage/Separation Forces	Para. 9.28 & Para. 4.3.9 of this spec	Force	-	-	Para. 4.3.9		N

No.	ESCC Generic Spec. No. 3401		Measurements and Inspections		Symbol	Limits		Unit
	Environmental and Endurance Tests Note 1	Test Method and Conditions	Identification	Conditions		Min	Max	
18	Oversize Pin Exclusion	Para. 9.29 & 4.3.10 of this spec	-	-	-	ESCC 3401 Para. 9.29		
19	Probe Damage	Para. 9.30 & Para. 4.3.11 of this spec.	Contact Separation Force	Para. 4.3.9 of this spec.	-	Para. 4.3.9		N

NOTES:

1. The tests in this table refer to either Chart IV or V and shall be used as applicable.