

Pages 1 to 19

POWER INDUCTORS, MOULDED, SMD,

BASED ON SERIES SESI

ESCC Detail Specification No. 3201/009

Issue 7	June 2011
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DCR No.	CHANGE DESCRIPTION
631, 632	Specification up issued to incorporate editorial and technical changes per DCRs.
	(Issue 6 has been withdrawn shortly after publishing)



ISSUE 7

TABLE OF CONTENTS

<u>1.</u>	GENERAL	<u>5</u>
1.1	Scope	5
1.2	Component Type Variants and Range of Components	5
1.3	Maximum Ratings	5
1.4	Parameter Derating Information	5
1.5	Physical Dimensions	5
1.6	Functional Diagram	5
<u>2.</u>	APPLICABLE DOCUMENTS	<u>5</u>
<u>3.</u>	TERMS, DEFINITIONS, ABBREVIATIONS, SYMBOLS AND UNITS	<u>5</u>
<u>4.</u>	REQUIREMENTS	<u>11</u>
4.1	General	11
4.2		12
4.2.1		12
4.2.2	Deviations from Final Production Tests (Chart II)	12
4.2.3	Deviations from Burn-in and Electrical Measurements (Chart III)	12
4.2.4	Deviations from Qualification Tests (Chart IV)	12
4.2.5	Deviations from Lot Acceptance Tests (Chart V)	12
4.3	Mechanical Requirements	12
4.3.1	Dimension Check	12
4.3.2	•	12
4.3.3	5	12
4.4	Materials and Finishes	12
4.4.1	Case	12
4.4.2	Terminal Material and Finish	12
4.5	Marking	13
4.5.1	General	13
4.5.2	The ESCC Component Number	13
4.5.3	Electrical Characteristics and Ratings	13
4.5.3.1	Numerical Values	13
4.5.3.2	Tolerances	14
4.5.4		14
4.6		14
4.6.1		14
4.6.2		14
4.6.3		14
4.7		14
4.7.1		14
4.7.2		14
4.7.3		15
4.8	Environmental and Endurance Testing (Charts IV and V of ESCC Generic Specification No. 3201)	16
4.8.1		16
4.8.2	Measurements and Inspections at Intermediate Points During Endurance Tests	16
4.8.3	Measurements and Inspections on Completion of Endurance Tests	16
4.8.4	Conditions for Operating Life Test (Part of Endurance Testing)	16
4.8.5		16

APPENDIX 'A'



1. <u>GENERAL</u>

1.1 SCOPE This specification details the ratings, physical and electrical characteristics, test and inspection data for Surface Mounting Inductors based on Series SESI. It shall be read in conjunction with ESCC Generic Specification No. 3201, the requirements of which are supplemented herein. 1.2 COMPONENT TYPE VARIANTS AND RANGE OF COMPONENTS Variants and range of components of the basic inductors specified herein, which are also covered by this specification, are given 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 chokes specified herein, are scheduled in Table 1(b). 1.4 PARAMETER DERATING INFORMATION

- Not applicable.
- 1.5 <u>PHYSICAL DIMENSIONS</u> The physical dimensions of the inductors specified herein are shown in Figure 2.

1.6 FUNCTIONAL DIAGRAM The functional diagram for the inductors specified herein, is shown in Figure 3.

2. <u>APPLICABLE DOCUMENTS</u>

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

(a) ESCC Generic Specification No. 3201 for RF Coils, Fixed.

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.

		<u>TYPE VARIANTS</u>		
Variant	Туре	Figure	Terminal Finish	Weight (g)
01	SESI 14	2(a)	SnPb	4
02	SESI 15	2(a)	SnPb	5
03	SESI 15W	2(b)	SnPb	6
04	SESI 18	2(b)	SnPb	11
05	SESI 9.1	2(c)	SnPb	2
06	SESI 22	2(b)	SnPb	26

TABLE 1(a) - TYPE VARIANTS AND RANGE OF COMPONENTS TYPE VARIANTS



ISSUE 7

RANGE OF COMPONENTS - SESI 14 SERIES (Variant 01)								
(1) Inductance (Note 1) L (μH)	(2) Tolerance ±%	(3) Rated DC Current I _R (A)	(4) Inductance at IR (Note 2) LR (μH)	(5) Peak current (Note 3) I _P (A)	(6) Max. DC Resistance Rdc (mΩ)			
3.3	20	5.8	2.3	8.0	15			
4.7	20	5.4	3.3	6.9	17.5			
6.0	20	4.3	4.2	5.7	26.5			
8.2	20	3.7	5.7	5.2	42			
10	20	3.3	7.0	4.6	47			
15	20	2.7	10.5	3.8	90			
22	20	2.2	15.4	3.0	110			
33	20	1.8	23.1	2.5	170			
47	10	1.6	32.9	2.1	200			
56	10	1.5	39.2	1.9	240			
68	10	1.3	47.6	1.7	290			
82	10	1.2	5.4	1.5	315			
100	10	1.1	70	1.4	440			
120	10	1.0	84	1.3	500			
150	10	1.0	84	1.3	645			
180	10	0.83	126	1.0	740			
220	10	0.72	154	1.0	980			
330	10	0.57	231	0.8	1575			
RANGE OF COMPONENTS - SESI 15 SERIES (Variants 02and 03)								
(1)	(2) Talaranaa	(3) Dated DC Current	(4)	(5) Deak aurrent	(6) Max DC			
Inductance	Tolerance	Rated DC Current	inductance at IR	Peak current	Max. DC			

- - - -

(1) Inductance (Note 1) L (μH)	(2) Tolerance ±%	(3) Rated DC Current I _R (A)	(4) Inductance at IR (Note 2) LR (μH)	(5) Peak current (Note 3) I _P (A)	(6) Max. DC Resistance Rdc (mΩ)
1.5	30	14	0.9	19	5.0
1.8	30	10	1.05	14	5.0
2.7	20	8.2	1.9	11.5	6.5
4.9	20	6.0	3.4	8.5	11
6.4	20	5.3	4.5	7.5	12
8.0	20	4.8	5.6	6.5	16
12	20	4.0	8.4	5.5	23
16	20	3.4	11.2	4.5	27
18	20	3.1	12.6	4.2	29
21	20	2.9	14.7	4.0	36
27	20	2.6	18.9	3.5	44



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$\begin{array}{ c c c c c c c c c c c c c c c c c c c$	(1)	(2)	(3)	(4)	(5)	(6)
$\begin{array}{ c c c c c c c c c c c c c c c c c c c$	Inductance			Inductance at IR	Peak current	Max. DC
33202.3233.25948101.9332.77256101.8392.58268101.6472.211082101.5572.1120100101.35701.9155120101.11051.5230220100.91541.3355330100.742311.0630BANGE OF COMPONENTS - SES 18 SERIES (Variant 04)1nductarce (Note 1)ToleranceRated DC Current h_(A)(4)(5)Max. DC Resistance RIG (m2)11207.27.7101215206.3510.58.91518205.712.67.91722205.115.47.22011207.27.7101215206.3510.58.91518205.712.67.91722205.115.47.22027204.718.96.52537104.025.95.62949103.534.34.84556103.3394.64870102.9494.16586102.6603.772 <td>· · ·</td> <td>+%</td> <td>I_ (A)</td> <td></td> <td></td> <td></td>	· · ·	+%	I_ (A)			
48101.9332.77256101.8392.58268101.6472.211082101.5572.1120100101.35701.9155120101.2841.7180150101.11051.5230220100.91541.3355330100.742311.0630HANGE OF COMPONENTS - SESI 18 SERIES (variant 04)Inductance (Note 1) $\frac{1}{2\%}$ Rated DC Current $I_R(A)$ Inductance at IR (Note 2) LR (µH)Max. DC Resistance Rdc (m2)6.8209.84.213.67.58.2208.35.711.59.011207.27.7101215206.3510.58.91518205.712.67.91722205.115.47.22027204.718.96.52537104.025.95.62949103.534.34.84556103.3394.64870102.9494.16586102.9494.16586102.6603.772100102.2						
56 101.8392.58268101.6472.211082101.5572.1120100101.35701.9155120101.2841.7180150101.11051.5230220100.91541.3355330100.742311.0630 BANGE OF COMPONENTS - SESI 18 SERIES (Variant 04)RANGE OF COMPONENTS - SESI 18 SERIES (Variant 04) (Note 1) (Note 1) $\pm \%$ (2) $Rated DC Current _{R}(A)(4) _{R}(A)Peak current(Note 2) _{R}(A)(6)Max. DCResistanceRdc (m2))6.8209.84.213.67.58.2208.35.711.59.011207.27.7101215206.3510.58.91518205.712.67.91722205.115.47.22027204.718.96.52537104.025.95.62949103.534.34.84556103.3394.64870102.9494.16586102.6603.772100102.470$						
$\begin{array}{ c c c c c c c c c c c c c c c c c c c$						
82101.5572.1120100101.35701.9155120101.2841.7180150101.11051.5230220100.91541.3355330100.742311.0630RANCE OF COMPONENTS - SESI 18 SERIES (Variant 04)(1)(2)(3)(4)(5)(6)Inductance (Note 1)1(2)Rated DC Current (Note 2)Peak current (Note 3)Max. DC Resistance Rdc (m2)6.8209.84.213.67.58.2208.35.711.59.011207.27.7101215206.3510.58.91518205.712.67.91722205.115.47.22027204.718.96.52537104.025.95.62949103.534.34.84556103.3394.64870102.9494.16586102.6603.772100102.4703.375120101.81262.6175180101.81262.6175						
$\begin{array}{ c c c c c c c c c c c c c c c c c c c$						
$\begin{array}{ c c c c c c c c c c c c c c c c c c c$	82	10	1.5	57	2.1	120
$ \begin{array}{c c c c c c c c c c c c c c c c c c c $	100	10	1.35	70	1.9	155
$\begin{array}{ c c c c c c c c c c c c c c c c c c c$	120	10	1.2	84	1.7	180
$\begin{array}{ c c c c c c c c }\hline 330 & 10 & 0.74 & 231 & 1.0 & 630 \\ \hline $AnxGE OF COMPONENTS - SESI 18 SERIES (Variant 04) \\ \hline $AnxGE OF COMPONENTS - SESI 18 SERIES (Variant 04) \\ \hline (1) (2) & (3) & (4) & (5) & (6) \\ \hline $Max. DC$ \\ \hline $Note 11$ \\ $L(\mu H)$ & \pm\%$ & Rated DC Current \\ $L(\mu H)$ & $\pm\%$ & Rated DC Current \\ $L(\mu H)$ & $\pm\%$ & Rated DC Current \\ $L(\mu H)$ & $\pm\%$ & Rdc(m\Omega)$ \\ \hline $L(\mu H)$ & $\pm\%$ & Rdc(m\Omega)$ & Rdc(m\Omega)$ \\ \hline $Rdc(m\Omega)$ & Rdc(m\Omega)$ \\ \hline $Rdc(m\Omega)$ & 1.5 & 9.0 \\ \hline 11 & 20 & 7.2 & 7.7 & 10 & 12 \\ \hline 15 & 20 & 6.35 & 10.5 & 8.9 & 15 \\ \hline 18 & 20 & 5.7 & 12.6 & 7.9 & 17 \\ \hline 22 & 20 & 5.1 & 15.4 & 7.2 & 20 \\ \hline 27 & 20 & 4.7 & 18.9 & 6.5 & 25 \\ \hline 37 & 10 & 4.0 & 25.9 & 5.6 & 29 \\ \hline 49 & 10 & 3.5 & 34.3 & 4.8 & 45 \\ \hline 56 & 10 & 3.3 & 39 & 4.6 & 48 \\ \hline 70 & 10 & 2.9 & 49 & 4.1 & 66 \\ \hline 86 & 10 & 2.6 & 60 & 3.7 & 72 \\ \hline 100 & 10 & 2.4 & 70 & 3.3 & 75 \\ \hline 120 & 10 & 1.95 & 105 & 2.7 & 125 \\ \hline 180 & 10 & 1.8 & 126 & 2.6 & 175 \\ \hline 180 & 10 & 1.6 & 154 & 2.3 & 210 \\ \hline \end{tabular}$	150	10	1.1	105	1.5	230
BANGE OF COMPONENTS - SESI 18 SERIES (Variant 04)(1) Inductance (Note 1) L (μ H)(2) ToleranceRated DC Current I_R (A)(4) Inductance at IR (Note 2) LR (μ H)(5) Peak current (Note 3) I_P (A)(6) Max. DC Resistance Rdc (m\Omega)6.8209.84.213.67.58.2208.35.711.59.011207.27.7101215206.3510.58.91518205.712.67.91722205.115.47.22027204.718.96.52537104.025.95.62949103.534.34.84556102.94.6484570102.4703.375120102.2843.1115150101.951052.7125180101.81262.6175220101.61542.3210	220	10	0.9	154	1.3	355
$ \begin{array}{ c c c c c c c c c c c c c c c c c c c$	330	10	0.74	231	1.0	630
$\begin{array}{ c c c c c c c c c c c c c c c c c c c$		RANGE	OF COMPONENTS	- SESI 18 SERIES	(Variant 04)	
$\begin{array}{ c c c c c c c c c c c c c c c c c c c$			(3)			
L (µH) $\pm\%$ I _R (A)L R (µH)I _P (A)Rdc (mΩ)6.8209.84.213.67.58.2208.35.711.59.011207.27.7101215206.3510.58.91518205.712.67.91722205.115.47.22027204.718.96.52537104.025.95.62949103.534.34.84556102.9494.16586102.6603.772100102.4703.375120101.951052.7125180101.81262.6175220101.61542.3210		Tolerance	Rated DC Current			
6.8 20 9.8 4.2 13.6 7.5 8.2 20 8.3 5.7 11.5 9.0 11 20 7.2 7.7 10 12 15 20 6.35 10.5 8.9 15 18 20 5.7 12.6 7.9 17 22 20 5.1 15.4 7.2 20 27 20 4.7 18.9 6.5 25 37 10 4.0 25.9 5.6 29 49 10 3.5 34.3 4.8 45 56 10 3.3 39 4.6 48 70 10 2.9 49 4.1 65 86 10 2.6 60 3.7 72 100 10 2.4 70 3.3 75 120 10 1.95 105 2.7 125 180 10 1.8 126 2.6 175 220 10 1.6 154 2.3 210		±%	I _B (A)			
11 20 7.2 7.7 10 12 15 20 6.35 10.5 8.9 15 18 20 5.7 12.6 7.9 17 22 20 5.1 15.4 7.2 20 27 20 4.7 18.9 6.5 25 37 10 4.0 25.9 5.6 29 49 10 3.5 34.3 4.8 45 56 10 3.3 39 4.6 48 70 10 2.9 49 4.1 65 86 10 2.6 60 3.7 72 100 10 2.4 70 3.3 75 120 10 2.2 84 3.1 115 150 10 1.8 126 2.6 175 220 10 1.6 154 2.3 210	6.8	20		4.2	-	7.5
15 20 6.35 10.5 8.9 15 18 20 5.7 12.6 7.9 17 22 20 5.1 15.4 7.2 20 27 20 4.7 18.9 6.5 25 37 10 4.0 25.9 5.6 29 49 10 3.5 34.3 4.8 45 56 10 3.3 39 4.6 48 70 10 2.9 49 4.1 65 86 10 2.6 60 3.7 72 100 10 2.4 70 3.3 75 120 10 2.2 84 3.1 115 150 10 1.8 126 2.6 175 220 10 1.6 154 2.3 210	8.2	20	8.3	5.7	11.5	9.0
18 20 5.7 12.6 7.9 17 22 20 5.1 15.4 7.2 20 27 20 4.7 18.9 6.5 25 37 10 4.0 25.9 5.6 29 49 10 3.5 34.3 4.8 45 56 10 3.3 39 4.6 48 70 10 2.9 49 4.1 65 86 10 2.6 60 3.7 72 100 10 2.4 70 3.3 75 120 10 2.2 84 3.1 115 150 10 1.95 105 2.7 125 180 10 1.6 154 2.3 210	11	20	7.2	7.7	10	12
22205.115.47.22027204.718.96.52537104.025.95.62949103.534.34.84556103.3394.64870102.9494.16586102.6603.772100102.4703.375120101.951052.7125180101.81262.6175220101.61542.3210	15	20	6.35	10.5	8.9	15
27204.718.96.52537104.025.95.62949103.534.34.84556103.3394.64870102.9494.16586102.6603.772100102.4703.375120101.951052.7125180101.81262.6175220101.61542.3210	18	20	5.7	12.6	7.9	17
37104.025.95.62949103.534.34.84556103.3394.64870102.9494.16586102.6603.772100102.4703.375120102.2843.1115150101.951052.7125180101.81262.6175220101.61542.3210	22	20	5.1	15.4	7.2	20
49103.534.34.84556103.3394.64870102.9494.16586102.6603.772100102.4703.375120102.2843.1115150101.951052.7125180101.81262.6175220101.61542.3210	27	20	4.7	18.9	6.5	25
56103.3394.64870102.9494.16586102.6603.772100102.4703.375120102.2843.1115150101.951052.7125180101.81262.6175220101.61542.3210	37	10	4.0	25.9	5.6	29
70102.9494.16586102.6603.772100102.4703.375120102.2843.1115150101.951052.7125180101.81262.6175220101.61542.3210	49	10	3.5	34.3	4.8	45
86 10 2.6 60 3.7 72 100 10 2.4 70 3.3 75 120 10 2.2 84 3.1 115 150 10 1.95 105 2.7 125 180 10 1.8 126 2.6 175 220 10 1.6 154 2.3 210	56	10	3.3	39	4.6	48
100102.4703.375120102.2843.1115150101.951052.7125180101.81262.6175220101.61542.3210	70	10	2.9	49	4.1	65
120 10 2.2 84 3.1 115 150 10 1.95 105 2.7 125 180 10 1.8 126 2.6 175 220 10 1.6 154 2.3 210	86	10	2.6	60	3.7	72
150 10 1.95 105 2.7 125 180 10 1.8 126 2.6 175 220 10 1.6 154 2.3 210	100	10	2.4	70	3.3	75
180 10 1.8 126 2.6 175 220 10 1.6 154 2.3 210	120	10	2.2	84	3.1	115
220 10 1.6 154 2.3 210	150	10	1.95	105	2.7	125
	180	10	1.8	126	2.6	175
330 10 1.34 231 1.9 250	220	10	1.6	154	2.3	210
	330	10	1.34	231	1.9	250



ISSUE 7

RANGE OF COMPONENTS - SESI 9.1 SERIES (Variant 05)

1.0 30 6.0 0.6 11.0 8.5 1.5 30 5.4 0.9 9.5 11.5 2.0 30 4.3 1.4 8.2 17 2.6 20 3.6 1.8 7.0 23 3.4 20 3.0 2.4 6.2 35 4.3 20 2.8 3.0 5.5 40 6.2 20 2.3 4.3 4.3 59 8.5 20 1.9 6.0 3.7 87 10 20 1.85 7.0 3.4 93 15 20 1.5 10.5 2.8 140 18 20 1.27 12.6 2.5 192 22 20 1.21 15.4 2.3 215 26 20 1.03 18.2 2.14 290 33 10 0.92 23.1 1.9 350 47 10 0.8 32.9 1.6 470 66 10 0.73 46.2 1.3 565 81 10 0.63 56.7 1.21 745 100 10 0.63 56.7 1.21 745 150 10 0.53 105 0.8 750 220 10 0.43 154 0.7 1165 330 10 0.36 231 0.6 1475 470 10 0.3 329 0.5 2220 <	(1) Inductance (Note 1) L (μH)	(2) Tolerance ±%	(3) Rated DC Current	(4) Inductance at IR (Note 2) LR (μH)	(5) Peak current (Note 3) I _P (A)	(6) Max. DC Resistance Rdc (mΩ)
$\begin{array}{ c c c c c c c c c c c c c c c c c c c$	1.0	30	6.0	0.6	11.0	8.5
2.6 20 3.6 1.8 7.0 23 3.4 20 3.0 2.4 6.2 35 4.3 20 2.8 3.0 5.5 40 6.2 20 2.3 4.3 4.3 59 8.5 20 1.9 6.0 3.7 87 10 20 1.85 7.0 3.4 93 15 20 1.5 10.5 2.8 140 18 20 1.27 12.6 2.5 192 22 20 1.21 15.4 2.3 215 26 20 1.03 18.2 2.14 290 33 10 0.92 23.1 1.9 350 47 10 0.8 32.9 1.6 470 66 10 0.73 46.2 1.3 565 81 10 0.63 56.7 1.21 745 100 10 0.63 105 0.8 750 220 10 0.43 154 0.7 1165 330 10 0.33 329 0.5 2220 680 10 0.25 477 0.4 3255	1.5	30	5.4	0.9	9.5	11.5
3.4 20 3.0 2.4 6.2 35 4.3 20 2.8 3.0 5.5 40 6.2 20 2.3 4.3 4.3 59 8.5 20 1.9 6.0 3.7 87 10 20 1.85 7.0 3.4 93 15 20 1.5 10.5 2.8 140 18 20 1.27 12.6 2.5 192 22 20 1.21 15.4 2.3 215 26 20 1.03 18.2 2.14 290 33 10 0.92 23.1 1.9 350 47 10 0.8 32.9 1.6 470 66 10 0.73 46.2 1.3 565 81 10 0.63 56.7 1.21 745 100 10 0.6 70 1.1 795 150 10 0.53 105 0.8 750 220 10 0.43 154 0.7 1165 330 10 0.36 231 0.6 1475 470 10 0.3 329 0.5 2220 680 10 0.25 477 0.4 3255	2.0	30	4.3	1.4	8.2	17
4.3 20 2.8 3.0 5.5 40 6.2 20 2.3 4.3 4.3 59 8.5 20 1.9 6.0 3.7 87 10 20 1.85 7.0 3.4 93 15 20 1.5 10.5 2.8 140 18 20 1.27 12.6 2.5 192 22 20 1.21 15.4 2.3 215 26 20 1.03 18.2 2.14 290 33 10 0.92 23.1 1.9 350 47 10 0.8 32.9 1.6 470 66 10 0.73 46.2 1.3 565 81 10 0.63 56.7 1.21 745 100 10 0.6 70 1.1 795 150 10 0.63 26.7 1.21 745 330 10 0.36 231 0.6 1475 470 10 0.3 329 0.5 2220 680 10 0.25 477 0.4 3255	2.6	20	3.6	1.8	7.0	23
6.2 20 2.3 4.3 4.3 59 8.5 20 1.9 6.0 3.7 87 10 20 1.85 7.0 3.4 93 15 20 1.5 10.5 2.8 140 18 20 1.27 12.6 2.5 192 22 20 1.21 15.4 2.3 215 26 20 1.03 18.2 2.14 290 33 10 0.92 23.1 1.9 350 47 10 0.8 32.9 1.6 470 66 10 0.73 46.2 1.3 565 81 10 0.63 56.7 1.21 745 100 10 0.6 70 1.1 795 150 10 0.33 154 0.7 1165 330 10 0.36 231 0.6 1475 470 10 0.3 329 0.5 2220 680 10 0.25 477 0.4 3255	3.4	20	3.0	2.4	6.2	35
8.5 20 1.9 6.0 3.7 87 10 20 1.85 7.0 3.4 93 15 20 1.5 10.5 2.8 140 18 20 1.27 12.6 2.5 192 22 20 1.21 15.4 2.3 215 26 20 1.03 18.2 2.14 290 33 10 0.92 23.1 1.9 350 47 10 0.8 32.9 1.6 470 66 10 0.73 46.2 1.3 565 81 10 0.63 56.7 1.21 745 100 10 0.6 70 1.1 795 150 10 0.33 105 0.8 750 220 10 0.43 154 0.7 1165 330 10 0.36 231 0.6 1475 470 10 0.3 329 0.5 2220 680 10 0.25 477 0.4 3255	4.3	20	2.8	3.0	5.5	40
$\begin{array}{ c c c c c c c c c c c c c c c c c c c$	6.2	20	2.3	4.3	4.3	59
$\begin{array}{ c c c c c c c c c c c c c c c c c c c$	8.5	20	1.9	6.0	3.7	87
$\begin{array}{ c c c c c c c c c c c c c c c c c c c$	10	20	1.85	7.0	3.4	93
22201.2115.42.321526201.0318.22.1429033100.9223.11.935047100.832.91.647066100.7346.21.356581100.6356.71.21745100100.6701.1795150100.531050.8750220100.431540.71165330100.362310.61475470100.33290.52220680100.254770.43255	15	20	1.5	10.5	2.8	140
26201.0318.22.1429033100.9223.11.935047100.832.91.647066100.7346.21.356581100.6356.71.21745100100.6701.1795150100.531050.8750220100.431540.71165330100.362310.61475470100.33290.52220680100.254770.43255	18	20	1.27	12.6	2.5	192
33100.9223.11.935047100.832.91.647066100.7346.21.356581100.6356.71.21745100100.6701.1795150100.531050.8750220100.431540.71165330100.362310.61475470100.33290.52220680100.254770.43255	22	20	1.21	15.4	2.3	215
47100.832.91.647066100.7346.21.356581100.6356.71.21745100100.6701.1795150100.531050.8750220100.431540.71165330100.362310.61475470100.33290.52220680100.254770.43255	26	20	1.03	18.2	2.14	290
66100.7346.21.356581100.6356.71.21745100100.6701.1795150100.531050.8750220100.431540.71165330100.362310.61475470100.254770.43255	33	10	0.92	23.1	1.9	350
81 10 0.63 56.7 1.21 745 100 10 0.6 70 1.1 795 150 10 0.53 105 0.8 750 220 10 0.43 154 0.7 1165 330 10 0.36 231 0.6 1475 470 10 0.25 477 0.4 3255	47	10	0.8	32.9	1.6	470
100 10 0.6 70 1.1 795 150 10 0.53 105 0.8 750 220 10 0.43 154 0.7 1165 330 10 0.36 231 0.6 1475 470 10 0.3 329 0.5 2220 680 10 0.25 477 0.4 3255	66	10	0.73	46.2	1.3	565
150 10 0.53 105 0.8 750 220 10 0.43 154 0.7 1165 330 10 0.36 231 0.6 1475 470 10 0.3 329 0.5 2220 680 10 0.25 477 0.4 3255	81	10	0.63	56.7	1.21	745
220 10 0.43 154 0.7 1165 330 10 0.36 231 0.6 1475 470 10 0.3 329 0.5 2220 680 10 0.25 477 0.4 3255	100	10	0.6	70	1.1	795
330 10 0.36 231 0.6 1475 470 10 0.3 329 0.5 2220 680 10 0.25 477 0.4 3255	150	10	0.53	105	0.8	750
470 10 0.3 329 0.5 2220 680 10 0.25 477 0.4 3255	220	10	0.43	154	0.7	1165
680 10 0.25 477 0.4 3255	330	10	0.36	231	0.6	1475
	470	10	0.3	329	0.5	2220
	680	10	0.25	477	0.4	3255
1000 10 0.2 700 0.34 5865	1000	10	0.2	700	0.34	5865

RANGE OF COMPONENTS - SESI 22 SERIES (Variant 06)

(1) Inductance (Note 1) L (μH)	(2) Tolerance ±%	(3) Rated DC Current I _R (A)	(4) Inductance at IR (Note 2) LR (μH)	(5) Peak current (Note 3) I _P (A)	(6) Max. DC Resistance Rdc (mΩ)
7	20	18.9	3.8	24	5
7.7	20	16	5.4	20	4.5
10	20	13.8	7	17.7	5.5
13	20	12	9.1	15.6	7
19.2	20	10.9	11.5	14	11



ISSUE 7

(1) Inductance (Note 1) L (μH)	(2) Tolerance ±%	(3) Rated DC Current I _R (A)	(4) Inductance at IR (Note 2) LR (μH)	(5) Peak current (Note 3) I _P (A)	(6) Max. DC Resistance Rdc (mΩ)
24	20	8.4	16.8	11.5	13
33	20	7.7	23	9.8	20
47	10	5.7	37.6	8	16
64	10	5	51.2	7	21
82	10	4.3	65.6	6.1	24
100	10	3.9	80	5.5	30
150	10	3.2	120	4.7	44
210	10	2.7	168	3.8	70
340	10	2.1	272	3	120
470	10	1.8	376	2.5	180
680	10	1.5	544	2.1	220
820	10	1.4	656	2	300
1000	10	1.2	800	1.8	330
1500	10	1.1	1200	1.4	500
2200	10	0.8	1760	1.2	760

NOTES:

1. Inductance measured at 0.25V, 100KHz.

2. Minimum value when the inductance is measured under Rated Current at 110°C.

3. Peak current is the maximum current for a square pulse of duration <10s.

TABLE 1(b) - MAXIMUM RATINGS

No.	Characteristics	Symbol	Maximum Ratings	Unit	Remarks
1	Rated DC Current	I _R	See Table 1(a)	А	
2	Dielectric Withstanding Voltage	DWV	500	Vrms	
3	Operating Temperature Range	T _{op}	-55 to +125	°C	
4	Storage Temperature Range	T _{stg}	-55 to +140	°C	T _{amb}
5	Soldering Temperature	T _{sol}	+260	°C	Note 1

NOTES:

1. Duration 5 seconds maximum, the same terminal shall not be resoldered until 3 minutes have elapsed.

FIGURE 1 - PARAMETER DERATING INFORMATION

Not applicable.



Figure 2 - PHYSICAL DIMENSIONS

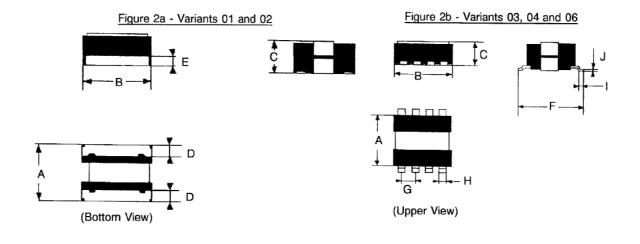
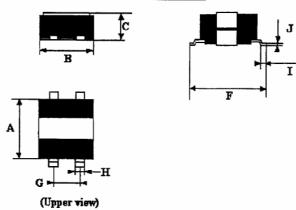


Figure 2c - Variant 05



Symbol	Varia	nts 01	Varia	nts 02	Varia	nts 03	Varia	nts 04	Varia	nts 05	Varia	nts 06
	Min	Max										
A	15.7	16.3	15.7	16.3	16	16.5	21.7	22.3	10	10.6	30.4	31.2
В		16		16		16		19.8		10.7		23.5
С		5.4		7.4		7.9		8.9		5.8		12.2
D	2.3		2.3									
E	1.0	1.5	1.0	1.5								
F					21.1	22	25.1	26	12.8	13.4	34.4	35.3
G					3.7	3.9	3.7	3.9	5.6	5.8	3.7	3.9
н					1.0	1.2	1.9	2.1	1.3	1.5	1.9	2.1
I					1.3	1.6	1.3	1.6	0.9	1.3	1.3	1.6
J					0.2		0.2		0.2		0.2	

NOTES:

1. All dimensions are in millimetres.



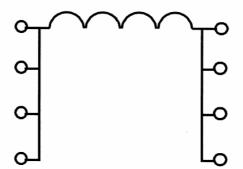
PAGE 11 ISSUE 7

FIGURE 3 - FUNCTIONAL DIAGRAM

Variants 01 and 02



Variants 03, 04 and 06



Variant 05



4. <u>REQUIREMENTS</u>

4.1 <u>GENERAL</u>

The complete requirements for procurement of the components specified herein are stated in this specification and ESCC Generic Specification No. 3201 for RF Coils, Fixed. 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 <u>Deviations from Special In-Process Controls</u> None
- 4.2.2 Deviations from Final Production Tests (Chart II) None.
- 4.2.3 Deviations from Burn-in and Electrical Measurements (Chart III)
 - (a) Para. 9.4, Radiographic Inspection: Shall not be performed.
- 4.2.4 Deviations from Qualification Tests (Chart IV)
 - (a) Para. 9.17, Immersion: Shall not be performed.
 - (b) Para. 9.18, Moisture Resistance: There shall be no polarisation voltage during test.
- 4.2.5 <u>Deviations from Lot Acceptance Tests (Chart V)</u>
 (a) Para. 9.18, Moisture Resistance: There shall be no polarisation voltage during test.

4.3 <u>MECHANICAL REQUIREMENTS</u>

4.3.1 Dimension Check

The dimensions of the inductors specified herein shall be verified in accordance with the requirements set out in Para. 9.6 of ESCC Generic Specification No. 3201 and they shall conform to those shown in Figure 2 of this specification.

4.3.2 <u>Weight</u>

The maximum weight of the inductors specified herein shall be as given in Table 1(a) - Component Type Variants.

4.3.3 <u>Terminal Strength</u>

The requirements for terminal strength testing are specified in Para. 9.12 of ESCC Generic Specification No. 3201.

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 inductors 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 <u>Case</u>

As a minimum, a resin moulding shall ensure the inductor's protection.

4.4.2 <u>Terminal Material and Finish</u>

The terminal material shall be brass, plated with 2 to 4µm of Nickel. The final finish shall be Sn60Pb40.



4.5 <u>MARKING</u>

4.5.1 <u>General</u>

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 paragraphs. When the component is to small to accommodate all of the marking specified, as much as space permits shall be marked and the marking information, in full, shall accompany the component in its primary package.

The information to be marked and the order of precedence, shall be as follows:

- (a) The ESCC Component Number.
- (b) Electrical Characteristics and Ratings.
- (c) Traceability Information.

4.5.2 <u>The ESCC Component Number</u>

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

320100901B

- Detail Specification Number: 3201009
- Type Variant Number (see Table 1(a)): 01
- Testing Level (B or C, as applicable): B

4.5.3 <u>Electrical Characteristics and Ratings</u>

The electrical characteristics and ratings to be marked in the following order of precedence are:-

- (a) Numerical Value
- (b) Tolerance

The information shall be constituted and marked as follows:-

4L7M

- Numerical value: 4.7µH
- Tolerance: (±20%): M

4.5.3.1 Numerical Values

The numerical values for inductance shall be expressed by means of the following codes. The unit quantity for marking shall be in microhenries.

Numerical Value	Code
X.X	XLX
XX	XX0
XX10 ¹	XX1
XX10 ²	XX2



4.5.3.2 Tolerances

The tolerances on numerical values shall be indicated by the code letters specified hereafter.

Tolerance (±%)	Code Letter
10	К
20	Μ
30	Ν

4.5.4 <u>Traceability Information</u>

Each component shall be marked in respect of traceability information in accordance with the requirements of ESCC Basic Specification No. 21700.

4.6 ELECTRICAL MEASUREMENTS

4.6.1 <u>Electrical Measurements at Room Temperature</u>

The parameters to be measured at Room Temperature are scheduled in Table 2. Unless otherwise specified, measurements shall be performed at $T_{amb}=22\pm3$ °C.

4.6.2 <u>Electrical Measurements at High and Low Temperatures</u>

The parameters to be measured at High and Low Temperatures are scheduled in Table 3. Unless otherwise specified, measurements shall be performed at T_{amb} =+110(+0-5) and -55(+5-0) ^oC respectively.

4.6.3 <u>Circuits for Electrical Measurements (Figure 4)</u> Not applicable.

4.7 <u>BURN-IN TESTS</u>

4.7.1 Parameter Drift Values

The parameter drift values applicable to burn-in are specified in Table 4 of this specification. Unless otherwise stated, measurements shall be performed at T_{amb} =+22±3 °C.

The parameter drift values (Δ) applicable to the parameters scheduled shall not be exceeded. In addition to these drift value requirements for a given parameter, the appropriate limit value specified in Table 2 shall not be exceeded.

4.7.2 <u>Conditions for Burn-in</u>

The requirements for burn-in are specified in Section 7 of the ESCC Generic Specification No. 3201. The conditions for burn-in shall be as specified in Table 5(a) of this specification.

On completion of burn-in, a recovery period of 24±2 hours is necessary before the end measurements.

4.7.3 <u>Electrical Circuit for Burn-in (Figure 5(a))</u> Not applicable.



ISSUE 7

TABLE 2 - ELECTRICAL MEASUREMENTS AT ROOM TEMPERATURE

No.	Characteristics	Symbol ESCC 3201		Test Condition	Limits		Unit
			Test Method		Min	Max	
01	Inductance (Note 2)	L	Para. 9.3.1.1	Para. 9.3.1.1	(1)	(1)	μH
02	Load Inductance (Note 3)	L _R	Para. 9.3.1.1	Para. 9.3.1.1	(3)		μH
03	DC Resistance	R _{DC}	Para. 9.3.1.4	Para. 9.3.1.4	-	(4)	Ω
04	Insulation Resist- ance	R _i	Para. 9.3.1.6	Para. 9.3.1.6	1.0	-	GΩ

NOTES:

- 1. For actual values see Column 1 and 2 of Table 1(a).
- 2. To be measured at 0.25V 100kHz.
- 3. To be measured at 0.25V 100kHz with Rated Current as defined in Column 4 of Table 1(a).
- 4. For actual values see Column 6 of Table 1(a).

TABLE 3 - ELECTRICAL MEASUREMENTS AT HIGH AND LOW TEMPERATURES

No.	Characteristics	Symbol		Test Condition	Limits		Unit
			Test Method		Min	Max	
01	Load Inductance (Note 2)	L _R	Para. 9.3.1.1	Para. 9.3.1.1	(2)	-	μH

NOTES:

1. To be performed on 5 components.

2. To be measured at 0.25V 100kHz with Rated Current as defined in Column 4 of Table 1(a).

FIGURE 4 - CIRCUITS FOR ELECTRICAL MEASUREMENTS Not applicable. TABLE 4 - PARAMETER DRIFT VALUES

No.	Characteristics	Symbol	Spec and/or Test Method	Test Condition	Change Limits (Δ)	Unit
01	Inductance	L	As per Table 2	As per Table 2	±10	%

TABLE 5(a) - CONDITIONS FOR BURN-IN

No.	Characteristics	Symbol	Conditions	Unit
01	Ambient Temperature	T _{amb}	+125(+0 -3)	°C



TABLE 5(b) - CONDITIONS FOR OPERATING LIFE TEST

No.	Characteristics	Symbol	Conditions	Unit
01	Ambient Temperature	T _{amb}	+125(+0 -3)	°C
02	Loading and Cycling	-	Para. 9.19 of ESCC 3201	-

FIGURE 5(a) - ELECTRICAL CIRCUIT FOR BURN-IN Not applicable. FIGURE 5(b) - ELECTRICAL CIRCUIT FOR OPERATING LIFE TEST Not applicable.

4.8 <u>ENVIRONMENTAL AND ENDURANCE TESTING (CHARTS IV AND V OF ESCC GENERIC</u> <u>SPECIFICATION NO. 3201)</u>

- 4.8.1 <u>Measurements and Inspections on Completion of Environmental Tests</u> The parameters to be measured and inspections to be performed on completion of environmental testing are scheduled in Table 6. Unless otherwise stated, the measurements shall be performed at T_{amb} =+22 ±3°C.
- 4.8.2 <u>Measurements and Inspections at Intermediate Points During Endurance Tests</u>
 The parameters to be measured and inspections to be performed during endurance tests are scheduled in Table 6. Unless otherwise stated, the measurements shall be performed at T_{amb}=+22 ±3°C.
- 4.8.3 <u>Measurements and Inspections on Completion of Endurance Tests</u> The parameters to be measured and inspections to be performed on completion of endurance tests are scheduled in Table 6. Unless otherwise stated, the measurements shall be performed at T_{amb} =+22 ±3°C.
- 4.8.4 <u>Conditions for Operating Life Test (Part of Endurance Testing)</u>
 The requirements for operating life testing are specified in Section 9 of ESCC Generic Specification No. 3201. The conditions for operating life testing shall be as specified in Table 5(b) of this specification.
- 4.8.5 <u>Electrical Circuit for Operating Life Test (Figure 5(b))</u> Not applicable.

Table 6 - MEASUREMENTS AND INSPECTIONS ON COMPLETION OF ENVIRONMENTAL TESTS AND AT INTERMEDIATE POINTS AND ON COMPLETION OF ENDURANCE TESTING

No.	ESCC Generic Spec. No. 3201		Measurements a	Measurements and Inspections		Lin	nits	Unit
	Environmental and Endurance Tests (Note 1)	Test Method and Conditions	Identification	Conditions		Min	Мах	
01	Thermal Shock	Para. 9.2	Visual Examination	Evidence of damage or loosening of terminals	-	-	-	-
02	Solderability	Para. 9.7	Visual Examination	MIL-STD 202 Method 208 Solid Wire Termination Criteria	-	-	-	-
03	Barometric Pressure	Para. 9.8	During Test	While still at low pressure				



ISSUE 7

No.	. ESCC Generic Spec. No. 3201		Generic Spec. No. 3201 Measurements and Inspections		Symbol	Lin	nits	Unit
	Environmental and Endurance Tests (Note 1)	Test Method and Conditions	Identification	Conditions		Min	Мах	
			Dielectric Withstanding Voltage	Para. 9.3.1.5 of ESCC 3201				
			DWV Leakage Current	500 Vrms	۱ _L	-	0.1	mA
04	Temperature Rise	Para. 9.9 and Table 1(a) of this spec. at + 90 °C	Temperature Rise	Within 30 seconds of removal of power Temperature Change	ΔT	-	25	°C
05	Overload	Para. 9.10 and Table 1(a) of this spec. at + 90 °C	After Test Visual Examination	Evidence of cracked cases, charred wind- ings, destroyed or sof- tened insulation or loosening of terminals	-	-	-	-
			Final Measurements	After 24 hours				
			DC Resistance	Table 2 Item 3	R _{DC}	Table 2	Table 2	Ω
			Insulation Resistance	Table 2 Item 4	R _i	1.0	-	GΩ
			Dielectric Withstanding Voltage t	Gen. 3201 para. 9.3.1.5				
			DWV Leakage Current	500 Vrms	١ _L	-	0.1	mA
06	Resistance to Soldering Heat	Para. 9.11	Final Measurements					
			Inductance	Table 2 Item 1	L	Table 2	Table 2	μH
			DC Resistance	Table 2 Item 3	R _{DC}	Table 2	Table 2	Ω
			Dielectric Withstanding Voltage	Gen. 3201 para. 9.3.1.5	ΙL	Table 2	Table 2	μA
			DWV Leakage Current	500 Vrms				
			After Test					
			Visual Examination	Evidence of damage or loosening of terminals	-	-	-	-
07	Terminal Strength	Para. 9.12	Visual Examination	Gen. 3201 para. 9.12.2 Evidence of damage	-	-	-	-
08	Low Temperature Storage	Para. 9.14 and Table 1(b) of this spec.	Visual Examination	Evidence of damage or loosening of terminals	-	-	-	-
09	Vibration	Para. 9.15	Visual Examination	-	-	-	-	-
10	Shock (Specified Pulse)	Para. 9.16	Visual Examination	-	-	-	-	-
11	Immersion	Para. 9.17	Not applicable	-	-	-	-	-
12	Moisture Resistance	Para. 9.18 and Pars. 4.2.4 and 4.2.5 of this spec. Before Tests, Thermal Shock per MIL-STD- 202 Method 107 Cond. A.						



ISSUE 7

No.	ESCC Generic S	pec. No. 3201	Measurements a	and Inspections	Symbol	Lin	nits	Unit
	Environmental and Endurance Tests (Note 1)	Test Method and Conditions	Identification	Conditions		Min	Мах	
			Final Measurements	Within 30 mins of re- moval from 1.5 to 3.5 hr. Conditioning	-	-	-	-
			Dielectric Withstanding Voltage	Gen. 3201 Para. 9.3.1.5				
			DWV Leakage Current	500 Vrms	١L	-	0.1	mA
			Insulation Resistance	Table 2 Item 4	R _i	100	-	MΩ
			Inductance	Table 2 Item 1	L	Table 2	2 Item 1	μH
			DC Resistance	Table 2 Item 3	R_DC	Table 2	2 Item 3	Ω
			After Test					
			Visual Examination	No evidence of corro- sion	-	-	-	-
13	Operating Life	Para. 9.19	Initial Measurements					
			Inductance	Table 2 Item 1	L	Table 2	2 Item 1	μH
			Intermediate Measure- ments	At 1000 hours After a recovery period of 30 mins	-	-	-	-
			Dielectric Withstanding Voltage	Gen. 3201 Para 9.3.1.5				
			DWV Leakage Current	500 Vrms	۱ _L	-	0.1	mA
			Inductance Change	Table 2 Item 1	$\Delta L/L$	-10	+10	%
			Final Measurements	At 1000 hours and 2000 hours after a recovery period of 30 mins				
			Dielectric Withstanding Voltage	Gen. 3201 Para 9.3.1.5	۱ _L	Table 2	2 Item 3	μA
			DWV Leakage Current	500 Vrms	۱ _L	-	0.1	mA
			Inductance Change	Table 2 Item 1	ΔL/L	-10	+10	%
			DC Resistance	Table 2 Item 2	R _{DC}	Table 2	2 Item 2	Ω
			Insulation Resistance	Table 2 Item 4	R _i	100	-	MΩ

NOTES:

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



APPENDIX 'A'

AGREED DEVIATIONS FOR MICROSPIRE (F)

ITEMS AFFECTED	DESCRIPTION OF DEVIATIONS
Para. 4.2.2, Deviations from Final Production Tests (Chart II)	Para. 9.2 Thermal Shock: Shall not be performed.
Para. 4.2.3, Deviations from Burn-in and Electrical Measurements (Chart III)	Thermal Shock, in accordance with Para. 9.2 of the Generic Specification for Chart II testing, shall be performed, for testing levels 'B' and 'C', immediately prior to Burn-in after the Initial Parameter Drift Value Measurements.