

REV	DESCRIPTION	DATE	APPD
A	DRAWING UNDER CHANGE CONTROL	10/30/86	HJG
B	ADDED -38 THRU -40 PER ECO 7146	5/12/87	DGM
C	REVISED DOCUMENT PER ECO 7387	2/22/88	WJS
D	REVISED SHEETS 2 & 6 PER ECOS 7543 & 7525	4/25/88	WJS
E	REVISED SHEET 3 PER ECO 7608	5/26/88	RJP
F	REVISED SHEET 6 PER ECO 7604	6/7/88	DGM
G	REVISED DOCUMENT PER ECO 7943	12/21/88	GEC
H	ADDED -49 PER ECO 8102	3/30/89	RJP
J	REVISED SHEETS 5 AND 6 PER ECO 8111	4/20/89	DHV
K	REVISED DOCUMENT PER ECO 8238	6/19/89	RJP
L	REVISED SHEET 2 PER ECO 8316	8/22/89	RJP
M	ADDED -53 PER ECO 8412	10/10/89	RJP
N	ADDED -54 AND -55 PER ECO 8474	11/17/89	RJP
P	ADDED -56 PER ECO 8523	12/26/89	SJ
R	REVISED SHEETS 2, 3 AND 7 PER ECO 8758	5/19/90	RJP
S	REVISED SHEET 8 PER ECO 8890	8/22/90	RJP
T	REVISED SHEETS 2, 4 AND 8 PER ECO 9021	10/3/90	RJP
V	ADDED -63 PER ECO 9104	2/12/91	RJP
W	ADDED -64 PER ECO 9275	3/7/91	RJP
X	ADDED -65 AND -66 PER ECO 9582	9/3/91	JHP
Y	CHANGED SHEET 3 PER ECO 11962	2/17/95	RJP
Z	REVISED SHEET 3 PER ECO 12315	8/4/95	RJP
AA	REVISED SHEET 2 PER ECO 25065	3/3/03	RJP
AB	REVISED SHEET 2 PER ECO 26049	4/14/04	RJP
AC	REVISED SHEET 2 PER ECO 26124	6/8/04	RJP
AD	REVISED DRAWING PER ECO 29953	5/1/06	RJP
AE	REVISED DRAWING PER ECO 30959	12/19/06	RJP
AF	REVISED DRAWING PER ECO 31928	7/3/07	DT

OPERATIONS	DATE
PURCHASING	DATE
MARKETING	DATE
Q.A.	DATE
MATERIALS	DATE
MFG	DATE

DRAWN	DATE
K. LECLERC	10/29/86
CHECKED	DATE
J. WHALL	10/29/86
PROJ. ENG.	DATE
R. HALLGREN	10/29/86
APPD.	DATE
G. BRYANT	10/29/86

			
CAPACITOR CERAMIC MONO CHIP MILITARY (883)			
SIZE	CODE IDENT. NO.	DWG NO.	REV
A	50721	15282	AF
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1.0 DESCRIPTION:

This specification outlines the mechanical, electrical and quality requirements for a MONOLYTHIC CONSTRUCTION CERAMIC CAPACITORS in chip form for hybrid circuit applications.

2.0 ELECTRICAL REQUIREMENTS:

2.1 See specifications in TABLE 1.

3.0 MECHANICAL REQUIREMENTS:

3.1 Maximum Die Size: SEE TABLE 2 (Figure 1)

3.2 Design and Construction: Only the item(s) described on this drawing are approved by DATEL.

A substitute item will not be used without prior acceptance and approval by DATEL.

3.3 ROHS Compliance.

4.0 QUALITY ASSURANCE:

4.1 A quality conformance inspection will be performed per DATEL dwg. A-14163, Condition A.

5.0 PREPARATION FOR DELIVERY:

5.1 Per DATEL dwg. A-14163, Condition A.

6.0 APPROVED VENDOR(S):

6.1 JOHANSON R09, R11, R15, R18, S41, R23, S43, R14

6.2 PRESIDIO 0403, 0504, 0805, 1206, 1209, 1505, 1812, 0603

6.3 NOVACAP *specify "ROHS Compliant" on the P.O.* 0504, 0805, 1206, 1210, 1505, 1812, 0402, 0603



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NOTE: SEE DRAWING # A-14163 FOR PURCHASING REQUIREMENTS.

TABLE 1

1. GENERAL SPECIFICATIONS

EIA-RS 19B MIL-C-55681	CLASS 1 COG(NPO) BP	N/A BX	CLASS II X7R N/A	CLASS II Z5U N/A
OPERATING TEMPERATURE RANGE °C	-55°C TO +125°C	-55°C TO +125°C	-55°C TO +125°C	-10°C TO +85°C
ΔC MAX CAPACITANCE @ 0 VDC	0 ± 30 PPM / °C	±15%	±15%	+22% -58%
ΔC MAX CAPACITANCE @ VDCW	0 ± 30 PPM / °C	+15% -25%	N/A (see graph)	N/A (see graph)
D.F. @ 25 °C	0.15% MAX .05% TYPICAL	2.5% MAX 1.0% TYPICAL	2.5% MAX 1.5% TYPICAL	3.0% MAX 1.5% TYPICAL
TEST CONDITIONS @ 25°C	1MHZ ≤ 100PF 1KHZ ≥ 100PF	1KHZ @ 1.0 ± .2 VRMS	1KHZ @ 1.2 ± .2 VRMS	1KHZ @ 0.5 ± .2 VRMS
FLASH (DWV)	2.5 X VDCW	2.5 X VDCW	2.5 X VDCW	2.5 X VDCW
INSULATION RESISTANCE (IR) 25°C	SMALLER OF 100GΩ OR 1000 MEGΩ-MFD @ VDCW	SMALLER OF 100GΩ OR 1000 MEGΩ-MFD @ VDCW	SMALLER OF 100GΩ OR 1000 MEGΩ-MFD @ VDCW	SMALLER OF 100GΩ OR 500 MEGΩ-MFD @ VDCW
ELEVATED TEMPERATURE IR	SMALLER OF 1GΩ OR 10MEGΩ-MFD @ 125°C @ VDCW	SMALLER OF 10GΩ OR 100MEGΩ-MFD @ 125°C @ VDCW	SMALLER OF 10GΩ OR 100MEGΩ-MFD @ 125°C @ VDCW	SMALLER OF 10GΩ OR 50MEGΩ-MFD @ 125°C @ VDCW
AGING RATE % Δ DECADE RR	0%	-1.5 % TYPICAL 2 % MAX	-2 % TYPICAL 2.5 % MAX	-3 % TYPICAL 5% MAX

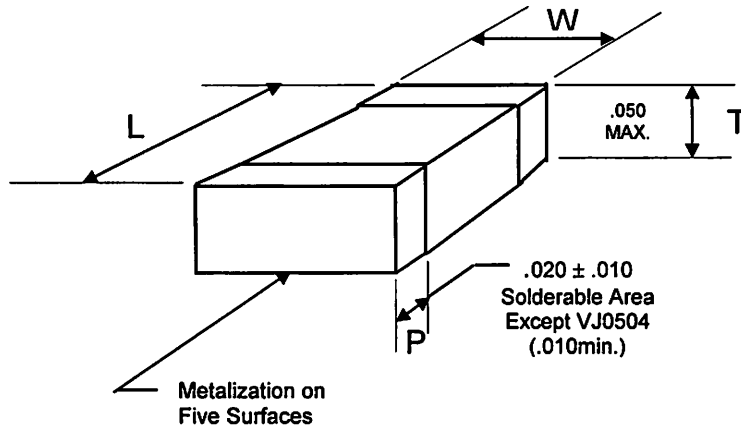
Termination Material: Silver Palladium

* At 25°C and rated Vdc or 1000 ohm-farads (min.) whichever is less.

VDC (MIN) 50V

- NOTE: -VDC (MIN) = 25V

FIGURE 1



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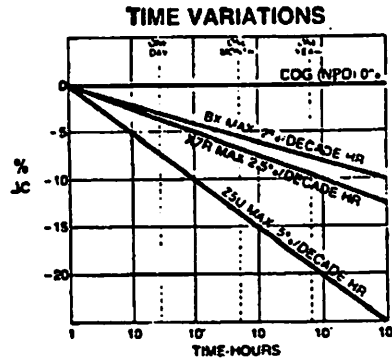
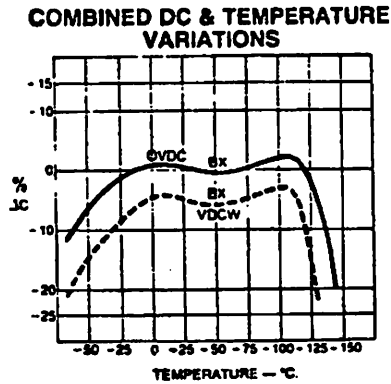
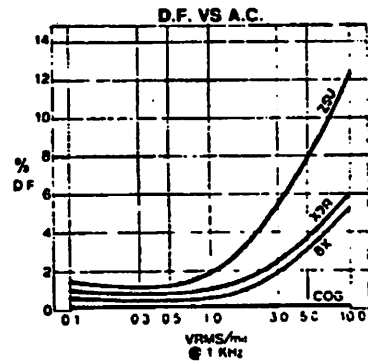
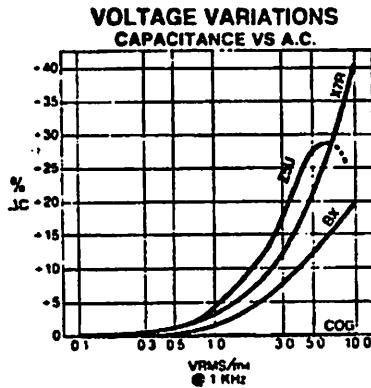
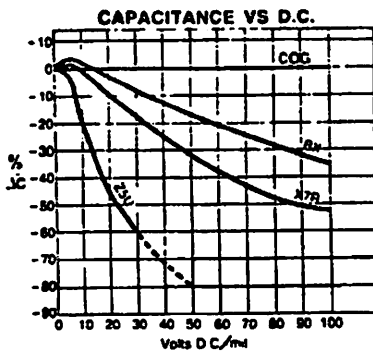
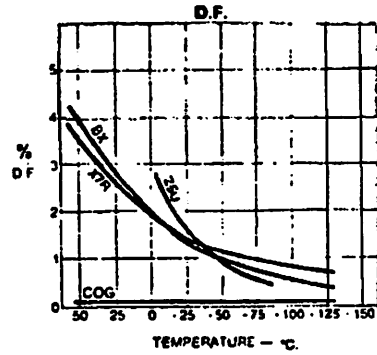
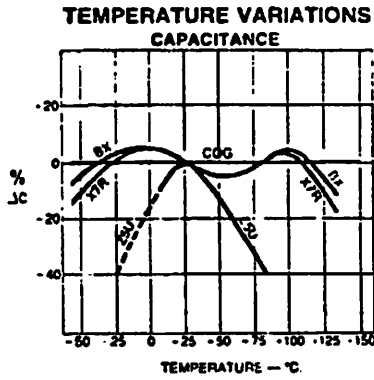
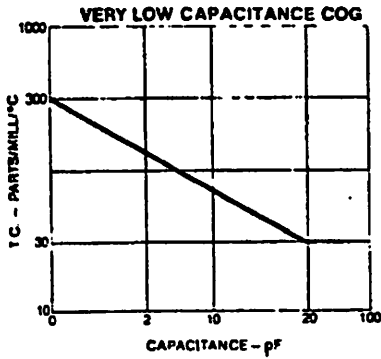
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TYPE	L	W	T	MAX	P
A	.040	.030	.040	.005	.015
AA	.030	.020	.040	.005	.015
B	.070	.040	.050	.010	.030
C	.165	.035	.065	.010	.035
D	.110	.085	.065	.010	.035
E	.140	.040	.050	.010	.030
F	.165	.115	.077	.010	.030
G	.115	.052	.050	.010	.030
H	.210	.235	.075	.010	.030
J	.172	.232	.075	.010	.030

MECHANICAL DIMENSIONS

3.0 DIELECTRIC CHARACTERISTICS





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DRAWING #	DESCRIPTION	SIZE	PRESIDIO	JOHANSON	NOVACAP
15282-1	47pf ±10% NPO	B	0805NPO470K2PR	500R15N470KP	0805N470K500P
15282-2	6.8pf ±10% NPO	B	0805NPO6R8K2PR	500R15N6R8KP	0805N6R8K500P
15282-3	180pf ±5% NPO	B	0805NPO181J2PR	500R15N181JP	0805N181J500P
15282-4	33pf ±10% NPO	B	0805NPO330K2PR	500R15N330KP	0805N330K500P
15282-5	560pf ±5% NPO	B	0805NPO561J2PR	500R15N561JP	0805N561J500P
15282-6	220pf ±5% NPO	B	0805NPO221J2PR	500R15N221JP	0805N221J500P
15282-7	390pf ±5% NPO	B	0805NPO391J2PR	500R15N391JP	0805N391J500P
15282-8	0.033uf ±20% X7R	B	0805NPO333M2PR	500R15W333MP	0805B333M500P
15282-9	1000pf ±20% X7R	A	0504X7R102M2PR	500R11W102MP	0504B102M500P
15282-10	0.01uf ±20% X7R	A	0504X7R103M2PR	500R11W103MP	0504B103M500P
15282-11	0.0047uf ±20% X7R	A	0504X7R472M2PR	500R11W472MP	0504B472M500P
15282-12	15pf ±20% NPO	A	0504MPO150M2PR	500R11N150MP	0504N150M500P
15282-13	22pf ±20% NPO	A	0504NPO220MEPR	500R11N220MP	0504N220M500P
15282-14	330pf ±20% X7R	A	0504X7R331M2PR	500R11W331MP	0504B331M500P
15282-15	0.1uf ±20% X7R	E			1505B104M500P
15282-16	470pf ±10% NPO	B	0805NPO471K2PR	500R15N471KP	0805N471K500P
15282-17	150pf ±10% NPO	B	0805NPO151K2PR	500R15N151KP	0805N151K500P
15282-18	100pf ±10% NPO	B	0805NPO101K2PR	500R15N101KP	0805N101K500P
15282-19	10pf ±10%NPO	B	0805NPO100K2PR	500R15N100KP	0805N100K500P
15282-20	2200pf ±20% X7R	B	0805X7R222M3PR	500R15W222MP	0805B222M500P
15282-21	0.01uf ±20% X7R	B	0805X7R103M2PR	500R15W103MP	0805B103M500P
15282-23	680pf ±5% NPO	B	0805NPO681J2PR	500R15N681JP	0805N681J500P
15282-24	68pf ±10% NPO	B	0805NPO680K2PR	500R15N680KP	0805N680K500P
15282-25	82pf ±10% NPO	B	0805NPO820K2PR	500R15N820KP	0805N820K500P
15282-27	33pf ±10% NPO	A	0504NPO330K2PR	500R11N330KP	0504N330K500P
15282-28	0.018uf ±20% X7R	B	0805X7R183M2PR	500R15W183MP	0805B183M500P
15282-30	150pf ±20% X7R	A	0504NPO151M2PR	500R11W151MP	0504B151M500P
15282-31	6.8pf ±20% NPO	A	0504NPO6R8M2PR	500R11N6R8MP	0504N6R8M500P
15282-32	180pf ±20% NPO	A	0504NPO181M2PR	500R11N181MP	0504N181M500P
15282-33	82pf ±10% NPO	A	0504NPO820K2PR	500R11N820KP	0504N820K500P
15282-34	100pf ±20% NPO	A	0504NPO101M2PR	500R11N101MP	0504N101M500P
15282-35	680pf ±20% X7R	A	0504X7R681M2PR	500R11W681MP	0504B681M500P
15282-36	470pf ±10% NPO	A	0504NPO471K2PR	500R11N471KP	0504N471K500P
15282-37	270pf ±10% NPO	A	0504NPO271K2PR	500R11N271KP	0504N271K500P
15282-38	1000pf ±20% NPO	B	0805NPO102M2PR	500R15N102MP	0805N102M500P
15282-39	2200pf ±20% X7R	A	0504X7R222M2PR	500R11W222MP	0504B222M500P
15282-40	47pf ±10% NPO	A	0504NPO470J2PR	500R11N470JP	0504N470K500P
15282-41	330pf ±10% X7R	AA	0403X7R331K2PR	R00R09W331KP	0402B331K500P
15282-42	220pf ±20% X7R	AA	0403X7R221M2PR	500R09W221MP	0402B221M500P
15282-44	1000pf ±20% X7R	AA	0403X7R102M2PR	500R09W102MP	0402B102M500P
15282-45	2200pf ±20% X7R	AA	0403X7R222M2PR	500R09W222MP	0402B222M500P
15282-46	5600pf ±20% X7R	B	0805X7R562M2PR	500R15W562MP	0805B562M500P
15282-47	8.2pf ±10% NPO	B	0805NPO8R2K2PR	500R15N8R2KP	0805N8R2K500P
15282-48	8.2pf ±10% NPO	A	0504NPO8R2K2PR	500R11N8R2KP	0504N8R2K500P
15282-49	15pf ±20%NPO	AA	0403NPO151M2PR	500R09N151MP	0402N151M500P
15282-50	0.012uf ±10% X7R	B	0805X7R123K2PR	500R15W123KP	0805B123K500P
15282-51	0.015uf ±10% X7R	B	0805X7R153K2PR	500R15W153KP	0805B153K500P
15282-52	0.1uf ±20% X7R	G	1206X7R104M2PR	500R18W104MP	1206B104M500P
15282-53 **	0.047uf ±10% X7R	A		160R11W473KP	0504B473M160P
15282-54	1500pf ±20% NPO	B	0805NPO152M2PR	500R15N152MP	0805N152M500P
15282-55	4700pf ±20% X7R	B	0805X7R472M2PR	500R15W472MP	0805B472M500P



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15282-56	2200pf ±10% NPO	G	1206NPO222K2PR	500R18N222KP	1206N222K500P
15282-59	250pf ±1% NPO	A	0504NPO251F2PR	500R11N251FP	0504N251F500P
15282-60	250pf ±10% NPO	A	0504NPO251K2PR	500R11N251KP	0504N251K500P
15282-61	250pf ±10% NPO	B	0805NPO251K2PR	500R15N251KP	0805N251K500P
15282-62	120pf ±10% NPO	A	0504NPO121K2PR	500R11N121KP	0504N121K500P
15282-63	100pf ±1% NPO	A	0504NPO101F2PR	500R11N101FP	0504N101F500P
15282-64	1800pf ±20% X7R	B	0805X7R182M2PR	500R15W182MP	0805B182M500P
15282-65	5.6pf ±20% NPO	A	0504NPO5R6M2PR	500R11N5R6MP	0504N5R6M500P
15282-66	68pf ±20% NPO	A	0504NPO680M2PR	500R11N680MP	0504N680M500P

** 16 Volt

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