

DEUTSCH

Engineered Connecting Devices



Circuit Board Connector

Technical Manual

Defense/Aerospace Operations

DEUTSCH
CONNECTORS
A Step Ahead 

Introduction

Stop the endless loop of crimping, rewiring, soldering—get plug-and-play technology with Deutsch's bussed connectors...

Tearing out your hair over tearing out your wiring? Solve the problem once and for all with Deutsch's circuit board connectors with a full variety of shell sizes, insert arrangements, and tracing patterns. Ground some circuits here, turn off some there, turn on a few others, leave some for simulation tests on alternate configurations--you name it—we'll help you do it. And if we don't have an off-the-shelf solution sitting on our shelves, we'll create one—just for you. After all, we've done it for the military as well as for some of the world's most prestigious companies for over a half century now.

As a respected leader in the connector industry known for designing the most proficient, durable connectors, Deutsch already knows how to solve your problems. So why look any further for solutions to problems that have already been solved? Call us today and discover the Deutsch world of diversity, reliability, and tested solutions to today's sophisticated interconnection problems.

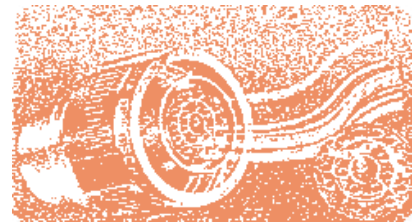
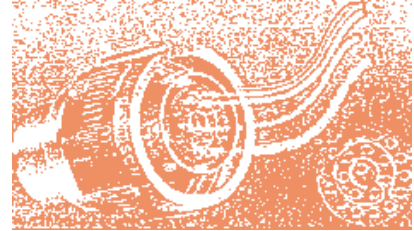


Table of Contents

Introduction, Table of Contents-2

Features and Benefits-3

Specifications-4

COMPOSITE CIRCUIT BOARD CONNECTORS

CBC #59052-5 (Sizes 13-19-25)

Envelope Drawing, Shell Sizes-5

Part Number, Ordering Information-6

Bussing Arrangements-6

CBC #59091- (Size 25; includes all components)

Envelope Drawing-8

Bussing Arrangement & Circuit Board Traces-8

CBC #59108 (Size 15 only)

Envelope Drawing-9

Part Number, Ordering Information-9

Bussing Arrangement-10

METAL CIRCUIT BOARD CONNECTORS

CBC #66363 (Sizes 09-11-13-15-17-19-23-25)

Envelope Drawing, Shell Sizes-11

Part Number, Ordering Information-12

Bussing Arrangements-13 through 15

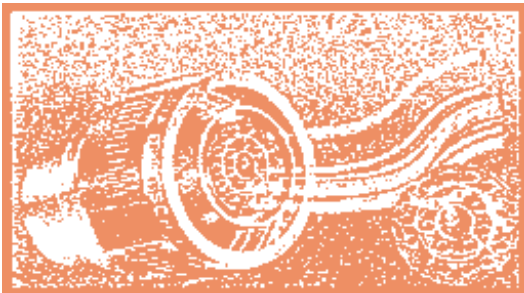
How to Contact Us-16

When simulation testing, alternate configurations, port testing or feedback loops become challenges or options just not available, let Deutsch be your quick, correct, personalized solution



Features & Benefits

Put an end to hard-wiring hassles...lighten up with Deutsch bussed connectors.



Proven Deutsch Solutions...Problems with internal testing and the issues that follow can be frustrating, time consuming and most importantly, costly. Why spend time, energy and resources trying to find solutions that someone else has already provided and perfected? Deutsch is a respected leader in the connector field and for many years has prided itself on designing the most proficient, durable connectors. If the world's most prestigious companies and organizations have come to trust and rely upon Deutsch for their solutions, *why not you?*

How can we help you? Let us count the ways...The Deutsch Bussing Connector is the solution that provides a simple, yet advanced method of bussing wires in countless ways. The possibilities are only as limited as your imagination. Sophistication coupled with rugged durability that meets Military Class standards (Mil-C-38999 III)—both will be yours when you turn to a leader in circuit board solutions.

- ☐ ***Metal or Composite***
- ☐ ***Large variety of extended pins available***
- ☐ ***Rugged enough to be used in the most demanding environments***
- ☐ ***Personalized Solutions***
- ☐ ***Durability that can be counted on through multiple tests.***
- ☐ ***Proven Solutions for Internal Testing***

☐ ***Intelligent solutions that can be counted on to work every time.***

- ☐ ***Grounding Distribution***
- ☐ ***Power Distribution***
- ☐ ***Alternate Configurations***



General Specifications

- ❑ *Connector meets intermateability and applicable performance characteristics of MIL-C-38999, Series III.*
- ❑ *Arrangements conform to MIL-STD-1560.*
- ❑ *Traces and sockets carry current levels up to the threshold of a:
MS22073-3 circuit breaker for contact size 22
MS22073-5 circuit breaker for contact size 20
MS22073-7.5 circuit breaker for contact size 16*
- ❑ *Circuit boards have conformal coating per MIL-I-46058 and withstand 100 VDC for two seconds.*
- ❑ *Insulation resistance: greater than 100 megohms when tested at 45 volts DC $\pm$ 2%.*
- ❑ *Applicable specifications:
IPC-600C IPC 0-275 MIL-P-55110
MS22073 MIL-I-46058 MIL-STD-1560*
- ❑ *Frequency: maximum of 3200 hertz (analog circuit) and 100 kbps (for ARINC 429 signal)*
- ❑ *Circuit-to-circuit crosstalk rejection: minimum of 60 db, nominal 80 db.*
- ❑ *Temperature: 125° C. maximum continuous operating temperature for finished circuit board.*
- ❑ *Keying: Refer to MIL-C-38999.*
- ❑ *Insert Arrangements: Refer to MIL-STD-1560. (Consult factory for availability.)*

This information is for reference only. Consult factory for recent changes, additions, and for product availability

Materials / Finishes

Material / Finishes – CBC #59052

Shell	Composite. See Part Number Description.
Coupling Ring	Composite
Contacts	Copper alloy. Deutschcoat V
Resilient Inserts	Silicone elastomer
Plastic Inserts	Thermoplastic
Backpack Cover	Composite or Aluminum Alloy. See Part Number Description

Material / Finishes – CBC #59091

Shell	Composite. Plated Nickel.
Coupling Ring	Composite
Contacts	Copper alloy. Gold over nickel.
Resilient Inserts	Silicone elastomer
Plastic Inserts	Thermoplastic
Backpack Cover	Composite plated nickel.

Material / Finishes – CBC #59108

Shell	Composite. See Part Number Description.
Coupling Ring	Composite
Contacts	Copper alloy. Deutschcoat V
Resilient Inserts	Silicone elastomer
Plastic Inserts	Thermoplastic
Backpack Cover	Composite or Aluminum Alloy. See Part Number description.

Material / Finishes – CBC #66363

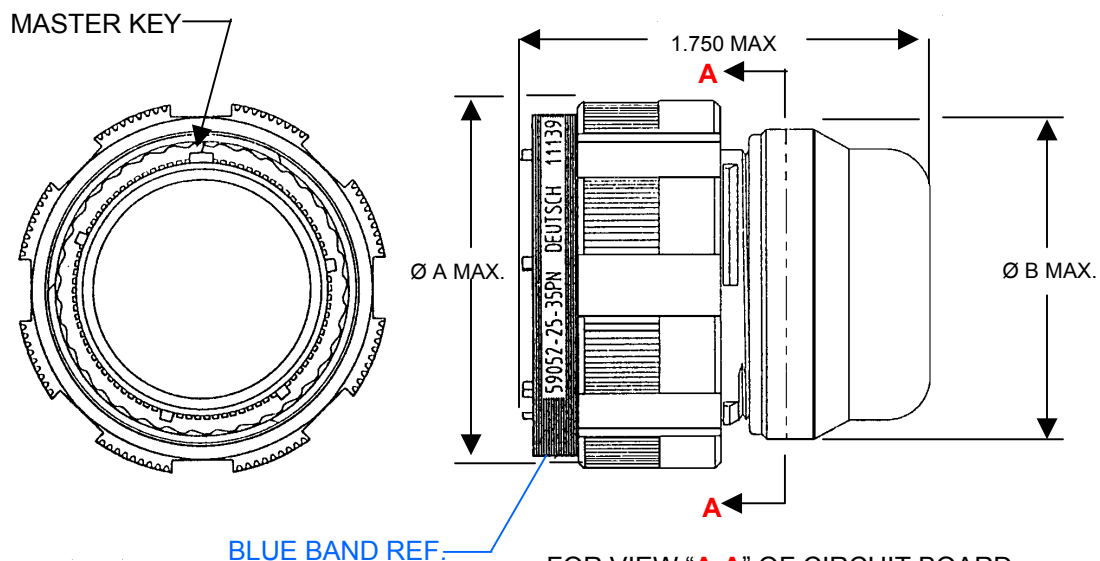
Shell	Aluminum Alloy. See Part Number Description.
Coupling Ring	Aluminum Alloy. See Part Number Description.
Contacts	Copper alloy. Deutschcoat V
Resilient Inserts	Silicone elastomer
Plastic Inserts	Thermoplastic
Backpack Cover	Aluminum Alloy or Composite. See Part Number description.



COMPOSITE *CIRCUIT BOARD CONNECTOR*

CONNECTOR, PLUG P/N 59052

Threaded coupling, extended pin, circuit board
bussed contacts ACT type



ALL DIMENSIONS ARE IN INCHES UNLESS
OTHERWISE SPECIFIED.

FOR VIEW "A-A" OF CIRCUIT BOARD,
SEE FOLLOWING PAGES

For applicable keying diagram, see MIL-C-38999. For
insert arrangements, see MIL-STD-1560.

Shell Sizes for Composite CBC #59052

Threaded coupling, extended pin, circuit board
bussed contacts ACT type

DEUTSCH PART NUMBER	SIZE	Ø A MAX	Ø B MAX
59052-13A98PN	13	1.157	.953
59052-13B98PN	13	1.157	.953
59052-19A32SN	19	1.515	1.347
59052-19B32SN	25	1.889	1.700
59052-25AO4SA	25	1.889	1.700
59052-25CO4SA	25	1.889	1.700
59052-25-35PN	25	1.889	1.700
59052-25-61PN	25	1.889	1.700

This information is for reference only. Consult factory for
recent changes, additions, and for product availability



COMPOSITE

CONNECTOR, PLUG

Ordering Information

Composite CBC Connector, Plug

59052 - 13 - 98 P N



KEYING POSITION N, A, B, C, D, OR E

CONTACT P = PIN, S = SOCKET

ARRANGEMENT

TRACE PATTERN – A, B, ...X...

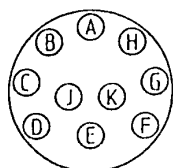
SIZE 13, 19, AND 25

PLATING - = NICKEL, W – OLIVE DRAB
CADMIUM

BASIC IDENTIFIER
PLUG CONNECTOR ACT TYPE WITH
EXTENDED PIN CIRCUIT BOARD
BUSSED
CONTACTS

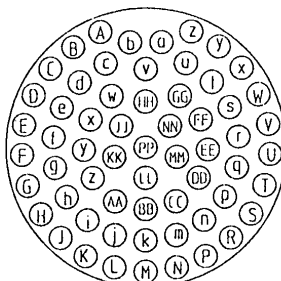
CBC #59052

Bussing Arrangements

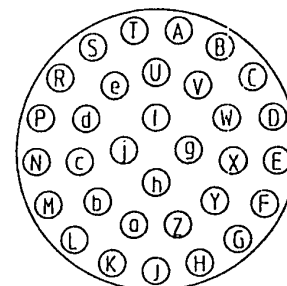


59052-13A98PN	
BUSS SIZE	CONTACT NUMBERS
2	A, B
BUSSED CONTACTS	C, F
	D, E
SPARE	G, H, J AND K

59052-13B98PN	
BUSS SIZE	CONTACT NUMBERS
2	E, H
BUSSED CONTACTS	F, G
3	A, B & J
SPARE	C, D & K



59052-25-61PN	
BUSS SIZE	CONTACT NUMBERS
4	G, H, g, h
	J, i, y, z
	P, m, CC, MM
	R, n, DD, EE
	S, T, U, V
	W, X, Y, I
	Z, u, HH, JJ
	a, v, w, x
	p, q, r, s
	FF, GG, NN, PP
5	A, B, C, D, E
BUSSED CONTACTS	b, c, d, e, f
	K, L, j, AA, KK
	M, N, k, BB, LL
SPARE	F



59052-19A32SN	
BUSS SIZE	CONTACT NUMBERS
3	D, E, F
4	U, V, W, X
5	d, e, f, g, h
SPARE	A, B, C, G, H,
	J, K, L, M, N,
	P, R, S, T, Y,
	Z, a, b, c, j

ALL DIMENSIONS ARE IN INCHES UNLESS
OTHERWISE SPECIFIED.

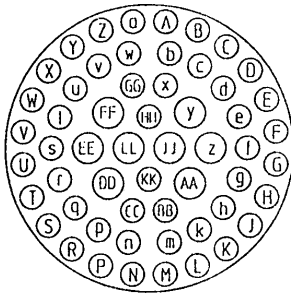
This information is for reference only. Consult factory for
recent changes, additions, and for product availability



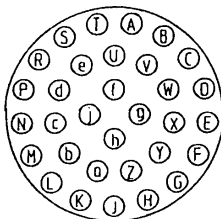
COMPOSITE CIRCUIT BOARD CONNECTOR

CIRCUIT BOARD

Bussing Arrangements

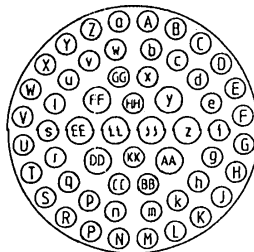


59052-25A04SA	
BUSS SIZE	CONTACT NUMBERS
3 BUSSED CONTACTS	M, N & P
4 BUSSED CONTACTS	A, B, C & D DD, EE, FF & JJ
5 BUSSED CONTACTS	E, F, G, J & L
SPARE	H, K, R, S, T, U, V, W, X, Y, Z, a, b, c, d, e, f, g, h, k, m, n, p, q, r, s, l, u, v, w, x, y, z, AA, BB, CC, GG, HH, KK & LL

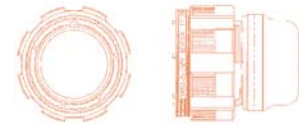


59052-19832SN	
BUSS SIZE	CONTACT NUMBERS
3 BUSSED CONTACTS	D, E & F
4 BUSSED CONTACTS	U, V, W & X
6 BUSSED CONTACTS	d, e, f, g, h & j
SPARE	A, B, C, G, H, J, K, L, M, N, P, R, S, T, Y, Z, a, b & c

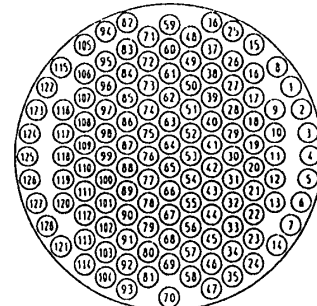
CBC #59052



59052-25C04SA	
BUSS SIZE	CONTACT NUMBERS
3 BUSSED CONTACTS	M, N & P
4 BUSSED CONTACTS	A, B, C & D DD, EE, FF & JJ
6 BUSSED CONTACTS	E, F, G, J, K & L
SPARE	H, R, S, T, U, V, W, X, Y, Z, a, b, c, d, e, f, g, h, k, m, n, p, q, r, s, l, u, v, w, x, y, z, AA, BB, CC, GG, HH, KK & LL



59052-25-35PN	
BUSS SIZE	CONTACT NUMBERS
3 BUSSED CONTACTS	1, 2, 3
	4, 5, 6
	8, 9, 10
	11, 12, 13
	14, 24, 35
	23, 34, 46
	47, 57, 58
	59, 60, 61
	62, 63, 64
	65, 66, 67
	68, 69, 70
	80, 81, 93
	92, 103, 113
	104, 114, 121
	115, 116, 117
4 BUSSED CONTACTS	118, 119, 120
	122, 123, 124
	125, 126, 127
	15, 16, 17, 18
	19, 20, 21, 22
	26, 27, 28, 29
	30, 31, 32, 33
	95, 96, 97, 98
	99, 100, 101, 102
	105, 106, 107, 108
5 BUSSED CONTACTS	109, 110, 111, 112
	25, 37, 38, 39, 40
	41, 42, 43, 44, 45
	36, 48, 49, 50, 51
	52, 53, 54, 55, 56
	82, 71, 72, 73, 74
	75, 76, 77, 78, 79
	94, 83, 84, 85, 86
	87, 88, 89, 90, 91
	SPARE 7, 128



ALL DIMENSIONS ARE IN INCHES UNLESS OTHERWISE SPECIFIED.

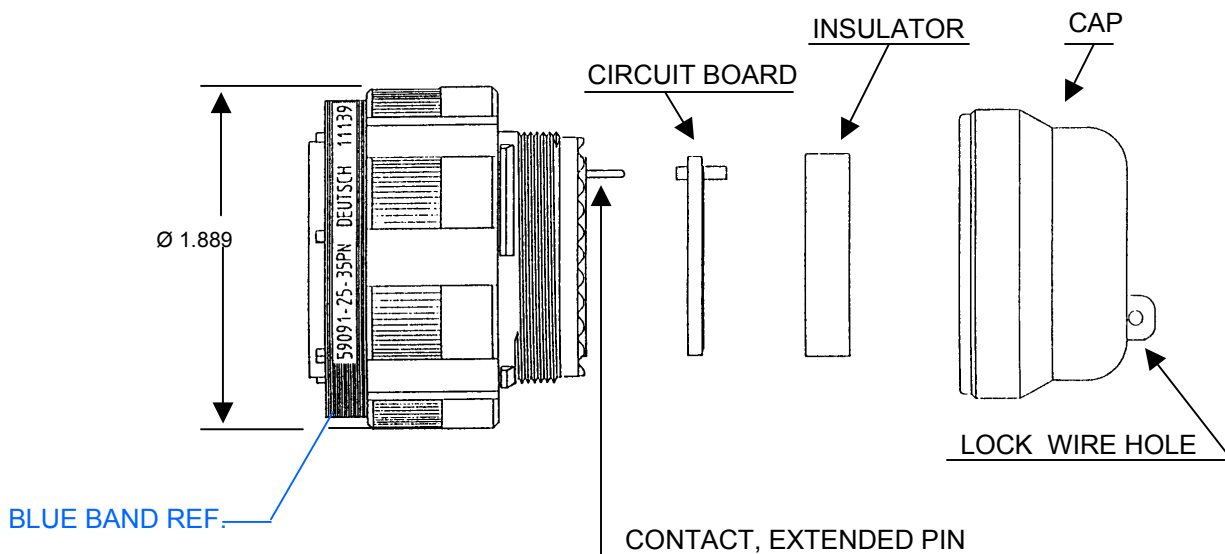
This information is for reference only. Consult factory for recent changes, additions, and for product availability



COMPOSITE *CIRCUIT BOARD CONNECTOR*

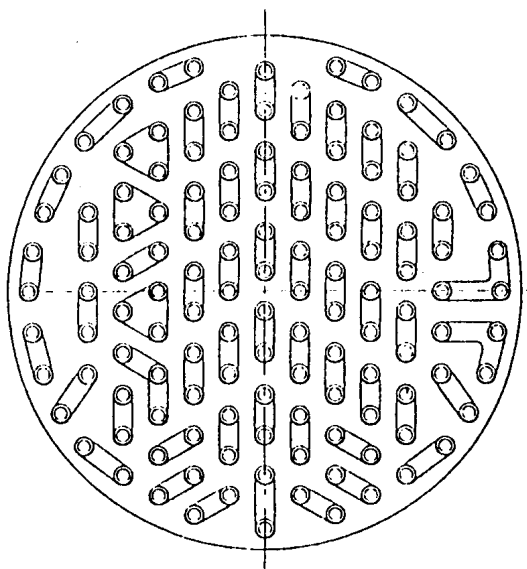
COMPONENT PACKAGE

Connector, Plug: Threaded coupling, extended pin, circuit board bussed contacts ACT type



CIRCUIT BOARD TRACES

Bussing Arrangement



ALL DIMENSIONS ARE IN INCHES UNLESS OTHERWISE SPECIFIED.

CBC #59091

Part number 59091 includes all components in diagram above. Insulator (P/N 6411-223-25011), Circuit Board (P/N 6465-223-2502), and Cap and O-Ring Assembly (P/N 59535M25) may also be purchased separately. Note: Circuit Board, Insulator, Cap and Contacts shipped loose.

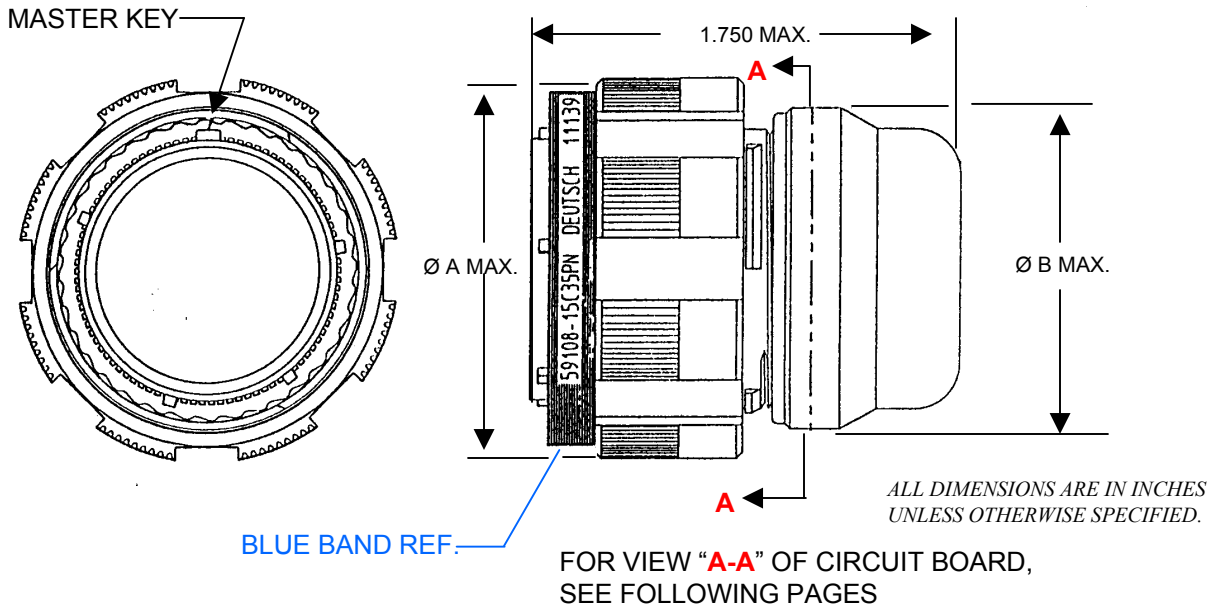
This information is for reference only. Consult factory for recent changes, additions, and for product availability



COMPOSITE *CIRCUIT BOARD CONNECTOR*

CBC# 59108

Connector, Plug: Threaded Coupling, extended pin, circuit board bussed contacts, ACT type



CBC #59108

Ordering Information

DEUTSCH PART NUMBER	SIZE	Ø A MAX	Ø B MAX
59108-15C35PN	15	1.279	1.110

59108 - 15 - 35 P N

KEYING POSITION N, A, B, C, D, OR E

CONTACT P = PIN, S = SOCKET

ARRANGEMENT

TRACE PATTERN – A, B, C, ...X...

SIZE 15

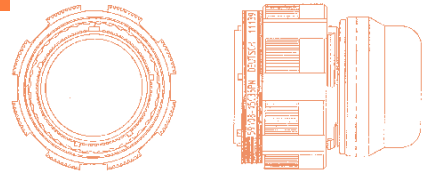
PLATING - = NICKEL, W = OLIVE DRAB
CADMIUM

BASIC IDENTIFIER
PLUG CONNECTOR ACT TYPE WITH
EXTENDED PIN CIRCUIT BOARD BUSSED
CONTACTS

This information is for reference only. Consult factory for recent changes, additions, and for product availability

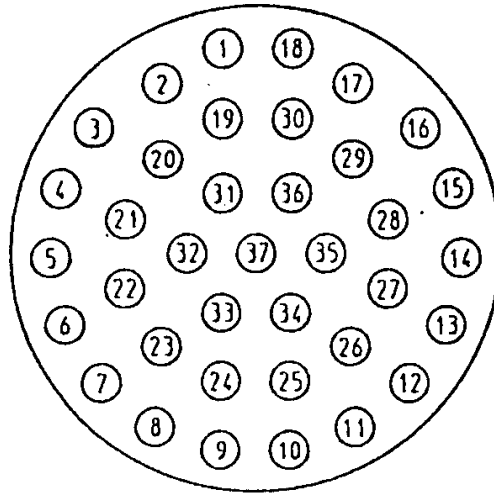


COMPOSITE *CIRCUIT BOARD CONNECTOR*



CBC #59108

Bussing Arrangement



59108-15C35PN	
BUSS SIZE	CONTACT NUMBERS
21 BUSSED CONTACTS	1, 2, 3, 4, 5,
	6, 7, 8, 9, 10,
	11, 12, 13, 14,
	15, 16, 17, 18,
	32, 33 & 34
15 BUSSED CONTACTS	19, 20, 21, 22,
	23, 24, 25, 26,
	27, 28, 29, 30,
	31, 36 & 37
SPARE	35

CBC #59108

ALL DIMENSIONS ARE IN INCHES
UNLESS OTHERWISE SPECIFIED.

This information is for reference only. Consult factory for recent changes, additions, and for product availability

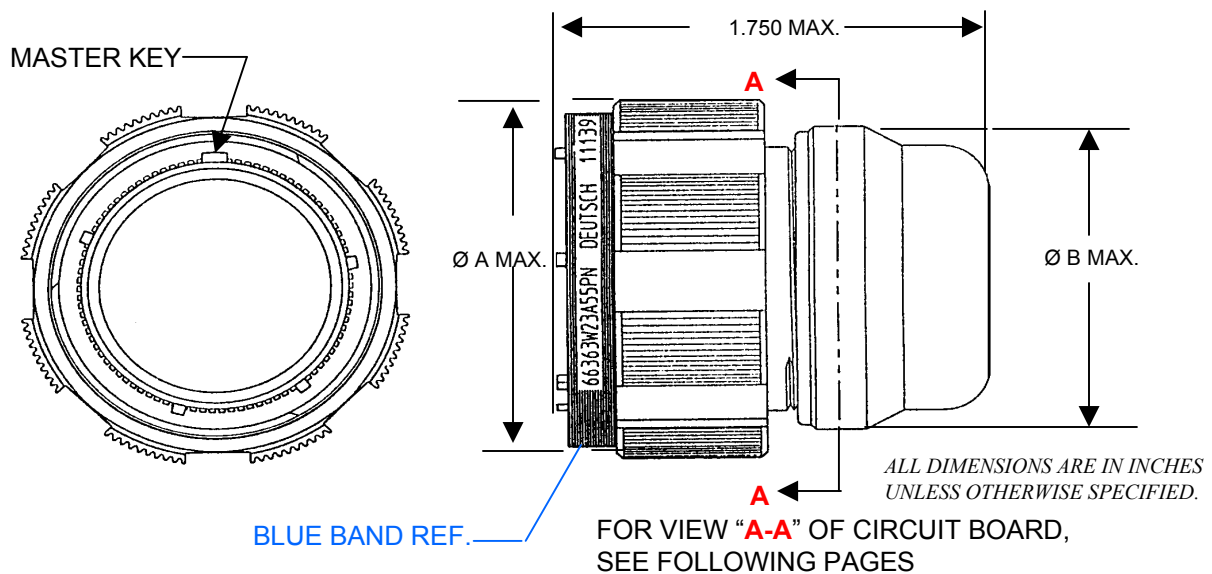


METAL

CIRCUIT BOARD CONNECTOR

CBC #66363

Connector, Plug



Shell Sizes for Metal CBC #66363

Threaded coupling, extended pin, circuit board
bussed contacts DTS type

DEUTSCH PART NUMBER	SIZE	Ø A MAX	Ø B MAX
66363W09A35PA	09	.858	.720
66363W09835PN	09	.858	.720
66363W09C35PN	09	.858	.720
66363W11A35PN	11	.984	.835
66363W11B35PN	11	.984	.835
66363W11C35PN	11	.984	.835
66363W11D35PN	11	.984	.835
66363W11E35PN	11	.984	.835
66363W11F35PN	11	.984	.835
66363W15A35PN	15	1.279	1.110
66363W15B35PN	15	1.279	1.110
66363W17A35PN	17	1.405	1.228
66363W23A55PN	23	1.768	1.583
66363W23B55PN	23	1.768	1.583
66363W25A35PN	25	1.889	1.700

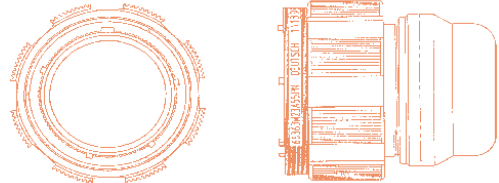
This information is for reference only. Consult factory for recent changes, additions, and for product availability



CONNECTOR, PLUG

Threaded coupling, extended pin, circuit board bussed contacts ACT type

ALL DIMENSIONS ARE IN INCHES UNLESS OTHERWISE SPECIFIED.



Note: Circuit Board Connector P/N 66363 uses aluminum alloy shells, coupling rings, and backpack covers. Other specifications are consistent with the specifications on page 4.

CBC #66363

Ordering Information

66363 - 11 - 35 P N

KEYING POSITION N, A, B, C, D, OR E

CONTACT P = PIN, S = SOCKET

ARRANGEMENT

TRACE PATTERN – A, B, ...H...

SIZE 09, 11, 13, 15, 17, 19, 23 AND 25

PLATING - = NICKEL, W – OLIVE DRAB
CADMIUM

BASIC IDENTIFIER
PLUG CONNECTOR ACT TYPE WITH
EXTENDED PIN CIRCUIT BOARD BUSSED
CONTACTS

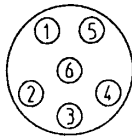
This information is for reference only. Consult factory for recent changes, additions, and for product availability





CBC #66363

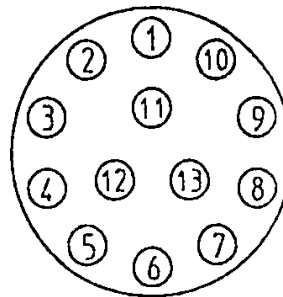
Bussing Arrangements



66363W09A35PA	
BUSS SIZE	CONTACT NUMBERS
2	1, 2
BUSSED CONTACTS	3, 4
SPARE	5, 6

66363W09B35PN	
BUSS SIZE	CONTACT NUMBERS
2	1, 2
BUSSED CONTACTS	3, 4
SPARE	5, 6

66363W09C35PN	
BUSS SIZE	CONTACT NUMBERS
2	
BUSSED CONTACTS	5, 6
SPARE	1, 2, 3 & 4



66363W11A35PN	
BUSS SIZE	CONTACT NUMBERS
3	1, 3, 6
BUSSED CONTACTS	2, 4, 5
SPARE	9, 10, 11
	7, 8, 12, 13

66363W11B35PN	
BUSS SIZE	CONTACT NUMBERS
3	1, 6, 8
BUSSED CONTACTS	2, 5, 7
2	9, 10
BUSSED CONTACTS	11, 12
SPARE	3, 4, 13

66363W11C35PN	
BUSS SIZE	CONTACT NUMBERS
2	3, 7
BUSSED CONTACTS	4, 8
	6, 10
	5, 9
SPARE	1, 2, 11, 12, 13

66363W11D35PN	
BUSS SIZE	CONTACT NUMBERS
3	1, 7, 9
BUSSED CONTACTS	2, 8, 10
SPARE	3, 4, 5, 6, 11, 12, 13

66363W11E35PN	
BUSS SIZE	CONTACT NUMBERS
2	4, 10
BUSSED CONTACTS	5, 9
SPARE	1, 2, 3, 6, 7, 8, 11, 12, 13

66363W11F35PN	
BUSS SIZE	CONTACT NUMBERS
2	1, 10
BUSSED CONTACTS	2, 9
	3, 8
	4, 7
	5, 6
SPARE	11, 12, 13

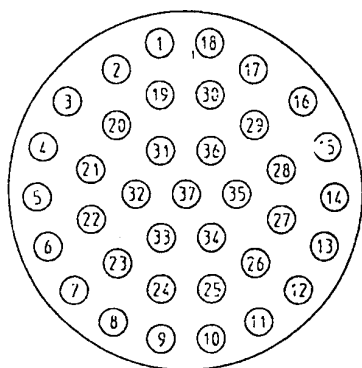
This information is for reference only. Consult factory for recent changes, additions, and for product availability





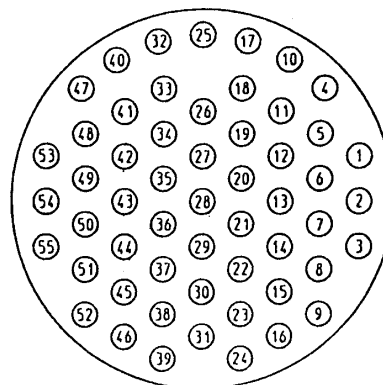
CBC #66363

Bussing Arrangements



66363W15A35PN	
BUSS SIZE	CONTACT NUMBERS
2	1, 7
BUSSED	2, 11
CONTACTS	3, 15
4	4, 8, 12, 16
BUSSED	5, 9, 13, 17
CONTACTS	6, 10, 14, 18
SPARE	19 THRU 37

66363W15B35PN	
BUSS SIZE	CONTACT NUMBERS
2	1, 7
BUSSED	2, 11
CONTACTS	3, 15
	19, 20
4	4, 8, 12, 16
BUSSED	5, 9, 13, 17
CONTACTS	6, 10, 14, 18
SPARE	21 THRU 37



66363W17A35PN	
BUSS SIZE	CONTACT NUMBERS
2 BUSSED CONTACTS	1, 33
	5, 34
	9, 35
	13, 36
	17, 37
	21, 38
9 BUSSED CONTACTS	25, 39
	29, 40
	2, 6, 10, 14, 18,
	22, 26, 30, 41,
	3, 7, 11, 15, 19,
	23, 27, 31, 42
SPARE	4, 8, 12, 16, 20,
	24, 28, 32, 43
	44 THRU 55

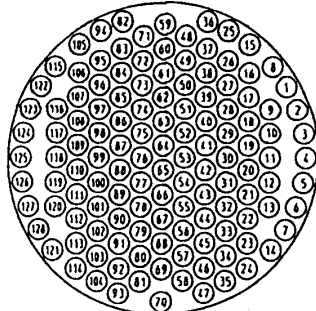
This information is for reference only. Consult factory for recent changes, additions, and for product availability





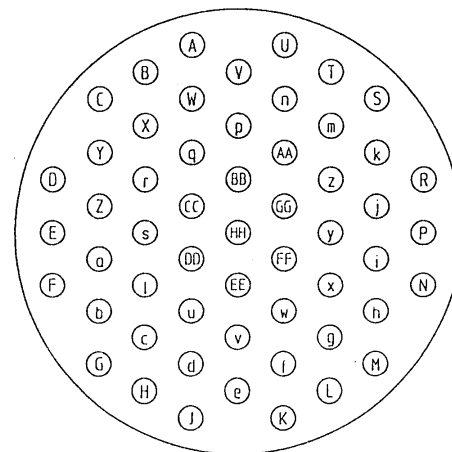
CBC #66363

Bussing Arrangements



66363W25A35PN	
BUSS SIZE	CONTACT NUMBERS
3 BUSSED CONTACTS	54, 66 & 77
	55, 67 & 78
	61, 62 & 63
	72, 73 & 74
4 BUSSED CONTACTS	52, 64, 75 & 87
	53, 65, 76 & 88
SPARE	1 THRU 51, 56,
	57, 58, 59, 60,
	68, 69, 70, 71
	AND 79 THRU 86
	AND 89 THRU 128

66363W23A55PN	
BUSS SIZE	CONTACT NUMBERS
2 BUSSED CONTACTS	D, V
	E, U
	F, T
	G, S
	H, R
	J, P
	K, N
	L, M
	w, z
	x, y
SPARE	A, B, C, W, X, Y, Z,
	a, b, c, d, e, f, g,
	h, j, k, m, n, p, q,
	u, v, AA, BB, CC, DD,
	EE, FF, GG, HH, i, r,
	s, l, u



66363W23B55PN	
BUSS SIZE	CONTACT NUMBERS
2 BUSSED CONTACTS	A, C
	M, d
	N, c
	S, b
	T, a
	P, Z
	R, Y
	U, X
	V, W
	e, p
	y, AA
	z, BB
SPARE	B, D, E, F, G, H, J,
	K, L, q, n, r, h, u,
	w, x, CC, DD, FF, GG
	HH, EE, m, s, k, l,
	j, v, f, g, i

This information is for reference only. Consult factory for recent changes, additions, and for product availability



DEUTSCH ECD

Mil-Spec Connectors & Accessories

Defense / Aerospace Operations . . .

is the world's premier manufacturer of electrical interconnection devices for use in defense, aerospace, and commercial applications. Whether you need an interconnection device for a commercial or military aircraft, missile, tank, truck transmission or a host of other applications, Deutsch has the solution you're looking for.

Thank you for your interest in our products. For additional information, please feel free to give us a call.

"Memorable in performance, forgettable in use."

TEL: (909) 765-2200 ♦ FAX: (909) 922-1544



DEUTSCH ECD Defense / Aerospace Operations

5733 W. Whittier Ave., Hemet, CA 92545 ♦ TEL: (909) 765-2200 ♦ FAX: (909) 922-1544

WEB: www.deutschdao.com ♦ E-MAIL: customerservice@deutschconnectors.net