

DDC Replacements for Obsolete Aeroflex Transceivers



White Paper



DDC Replacements for:

- UT63M105 Single Transceiver
- UT63M125 Multi-Chip Dual Transceiver
and...
- UT63M107 Single Transceiver
- UT63M127 Multi-Chip Dual Transceiver
- UT63M115 Single Transceiver
- UT63M135 Multi-Chip Dual Transceiver
- UT63M117 Single Transceiver
- UT63M137 Multi-Chip Dual Transceiver

July 13, 2011

DDC Replacements for Obsolete Aeroflex Single Transceiver & Multi-Chip Dual Transceiver

1. Introduction

Aeroflex Colorado Springs (Aeroflex) announced on April 17th, 2009 that both UT63M105 & UT63M125 (Standard Microcircuit Drawing 5962-88644), 15-Volt, MIL-STD-1553 Bus Transceivers have reached End-of-Life (EOL) status and are out of production.

DDC is pleased to offer the following MIL-STD-1553 Bus Transceivers as suggested replacements for the above referenced Aeroflex EOL components.

-15V Idle LOW (Harris Compatibility) 1553 Transceiver	
DDC Part Number	Replacement for:
BUS-63105 (5962-8604902Zx)	UT63M105Pxx (5962-8864401Ux) "Single Transceiver" in a 24-pin DIP package (see page #3)
BUS-63126 (5962-8757902Yx)	UT63M125Dxx (5962-8864405Yx) "Multichip dual Transceiver" in a 36-lead FP package (see page #4)
BUS-63125 (5962-8757902Xx)	UT63M125Bxx (5962-8864405Xx) "Multichip dual Transceiver" in a 36-pin DIP package (see page #5)
BUS-63123 (5962-8757902Tx)	UT63M125Cxx (5962-8864405Zx) "Multichip dual Transceiver" in a 36-lead FP package (see page #6)

DDC has suggested replacements for several other UT63M1xx series transceivers (Standard Microcircuit Drawing 5962-88644) that were previously declared obsolete by Aeroflex and is pleased to offer the following MIL-STD-1553 Bus Transceivers for your consideration.

-12V Idle LOW (Harris Compatibility) 1553 Transceiver	
DDC Part Number	Replacement for:
BUS-63107	UT63M107Pxx (5962-8864402Ux) "Single Transceiver" in a 24-pin DIP package (see page #7)
BUS-63128 (5962-8982601Yx)	UT63M127Dxx (5962-8864406Yx) "Multichip dual Transceiver" in a 36-lead FP package (see page #8)
BUS-63127 (5962-8982601Xx)	UT63M127Bxx (5962-8864406Xx) "Multichip dual Transceiver" in a 36-pin DIP package (see page #9)
Consult factory for availability	UT63M127Cxx (5962-8864406Zx) "Multichip dual Transceiver" in a 36-lead FP package

-15V Idle HIGH (Smiths Compatibility) 1553 Transceiver	
DDC Part Number	Replacement for:
BUS-63115	UT63M115Pxx (5962-8864403Ux) “Single Transceiver” in a 24-pin DIP package (see page #7)
Consult factory for availability	UT63M135Dxx (5962-8864407Yx) “Multichip dual Transceiver” in a 36-lead FP package
BUS-63135 (5962-8944704HXx)	UT63M135Bxx (5962-8864407Xx) “Multichip dual Transceiver” in a 36-pin DIP package (see page #9)
Consult factory for availability	UT63M135Cxx (5962-8864407Zx) “Multichip dual Transceiver” in a 36-lead FP package

-12V Idle HIGH (Smiths Compatibility) 1553 Transceiver	
DDC Part Number	Replacement for:
BUS-63117	UT63M117Pxx (5962-8864404Ux) “Single Transceiver” in a 24-pin DIP package (see page #7)
BUS-63138	UT63M137Dxx (5962-8864408Yx) “Multichip dual Transceiver” in a 36-lead FP package (see page #8)
BUS-63137	UT63M137Bxx (5962-8864408Xx) “Multichip dual Transceiver” in a 36-pin DIP package (see page #9)
Consult factory for availability	UT63M137Cxx (5962-8864408Zx) “Multichip dual Transceiver” in a 36-lead FP package

DDC replacements are lower-power and are electrically / mechanically compatible to the discontinued items which should preclude the need for a board re-design due to the transceiver obsolescence issue.

There are manageable differences in both the pinout (not all pins utilized) and mechanical characteristics (through the use of standoffs, spacers, and lead forming variations) as well as minor variations in AC and DC electrical parameters due to wafer foundry and DDC’s unique design.

The end user needs to compare the differences between the components and determine if they are acceptable in the customer’s specific application.

2. Aeroflex Obsolete Transceivers (as of April 2009)

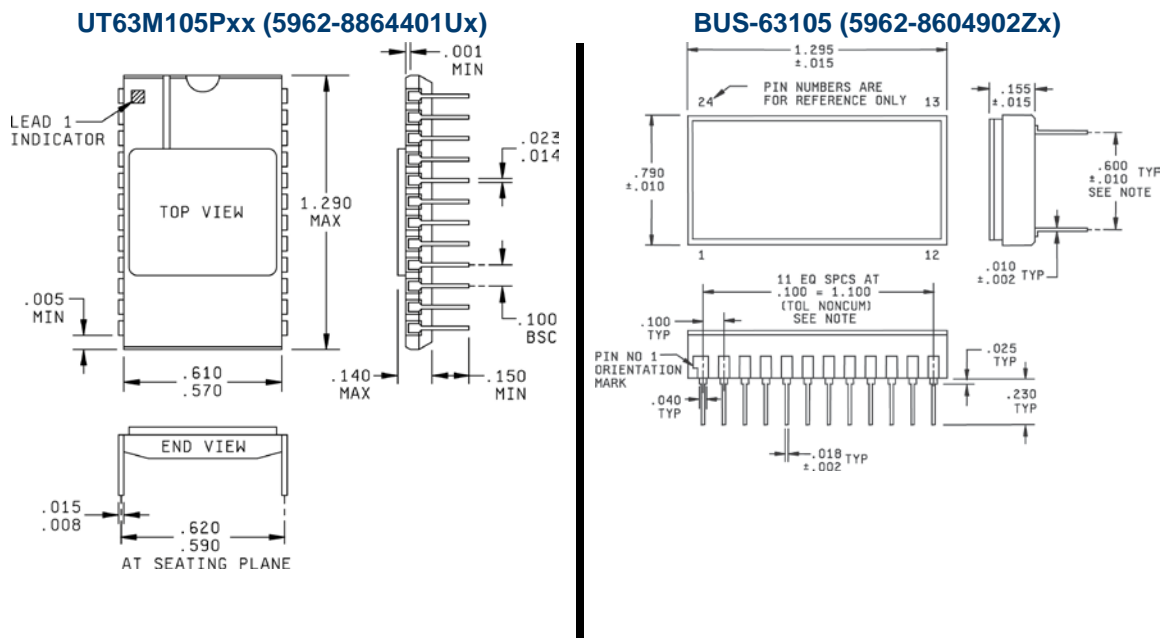
2.1 Aeroflex vs. DDC Comparisons:

UT63M105Pxx (5962-8864401Ux) vs. BUS-63105 (5962-8604902Zx)

2.1.1 Pinout differences for the 24-pin DIP package

	UT63M105Pxx (8864401Ux)	BUS-63105 (8604902Zx)	
Pin #	Description	Description	Impact
13	Vcca	No Connect / Don't Care	None; Vcca not used. Pin 13 is not internally connected.

2.1.2 Mechanical differences for the 24-pin DIP package



	UT63M105Pxx (8864401Ux)	BUS-63105 (8604902Zx)
Package Length	1.290" MAX	1.310" MAX
Package Width	0.610" MAX	0.800" MAX
Package Height	0.140" MAX	0.170" MAX
Lead Width at Seating Plane	0.620" MAX	0.610" MAX
Lead Spacing	0.100" TYP	0.100" TYP
Lead Dimension	0.023" x 0.015" MAX	0.020" x 0.012" MAX
Lead Length	0.150" MIN	0.205" TYP

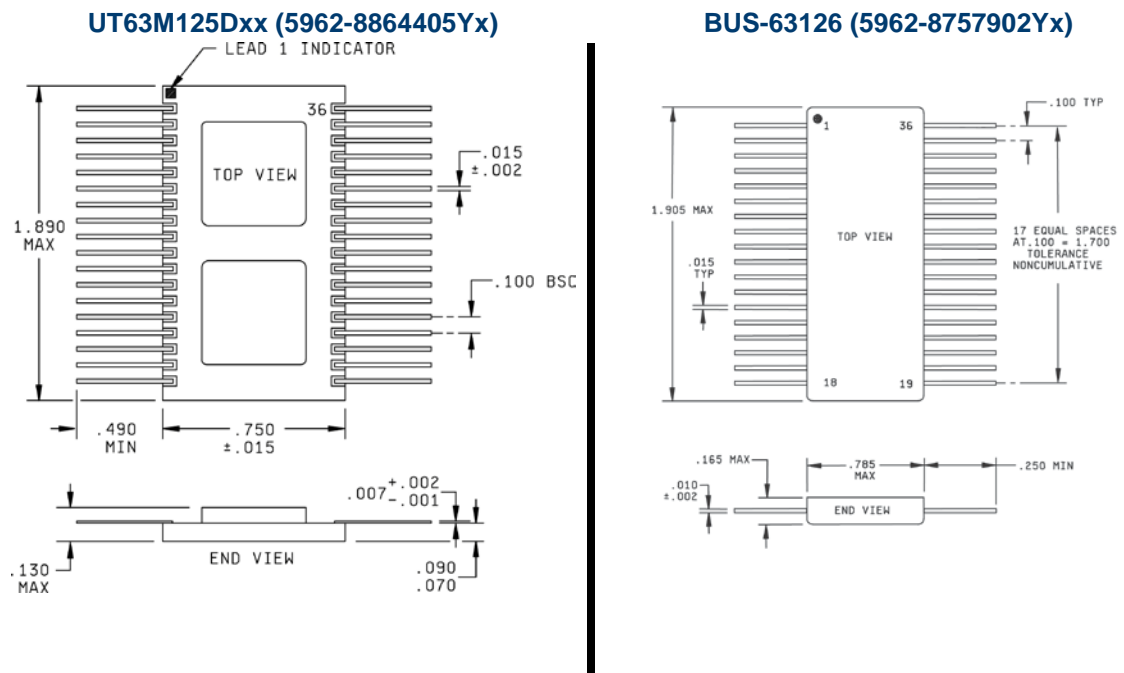
2.2 Aeroflex vs. DDC Comparisons:

UT63M125Dxx (5962-8864405Yx) vs. BUS-63126 (5962-8757902Yx)

2.2.1 Pinout differences for the 36-lead FP package

	UT63M125Dxx (8864405Yx)	BUS-63126 (8757902Yx)	
Pin #	Description	Description	Impact
9	No Connect	Case Ground / Don't Care	None; Case ground is optional.
19	Vcca	No Connect / Don't Care	None; Vcca not used. Pin 19 is not internally connected.
28	Vcca	No Connect / Don't Care	None; Vcca not used. Pin 28 is not internally connected.

2.2.2 Mechanical differences for the 36-lead FP package



	UT63M125Dxx (8864405Yx)	BUS-63126 (8757902Yx)
Package Length	1.890" MAX	1.905" MAX
Package Width	0.765" MAX	0.785" MAX
Package Height	0.130" MAX	0.165" MAX
Lead Spacing	0.100" TYP	0.100" TYP
Lead Dimension	0.017" x 0.009" MAX	0.015" x 0.012" MAX
Lead Length	0.490" MIN	0.250" MIN

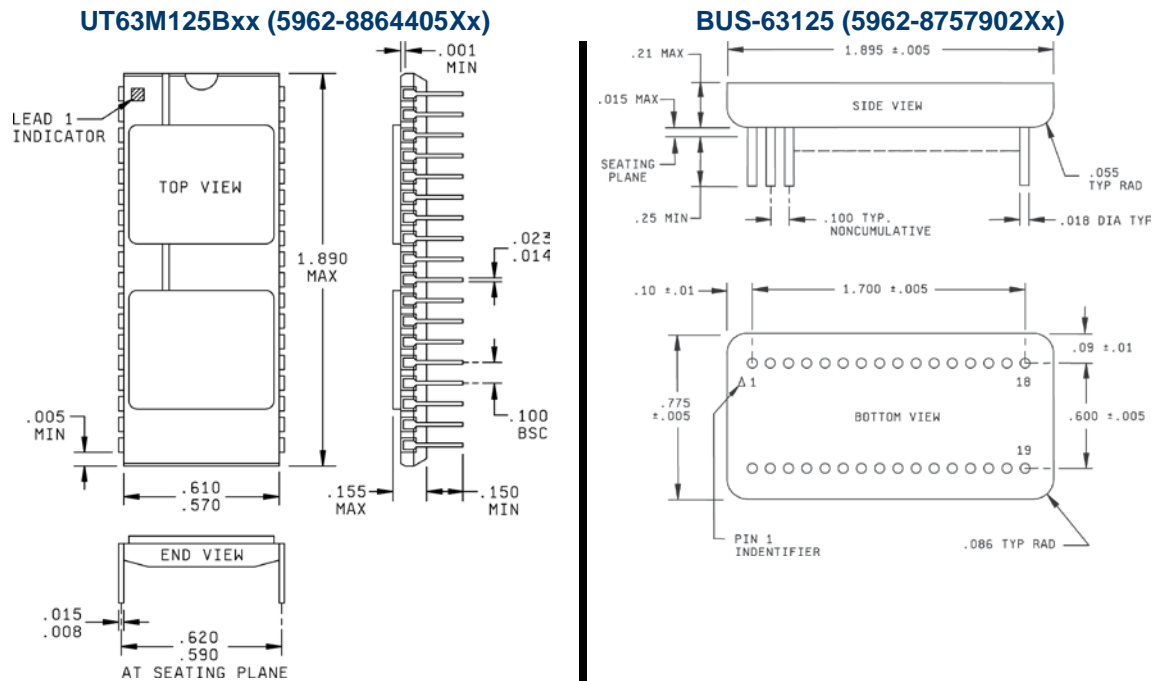
2.3 Aeroflex vs. DDC Comparisons:

UT63M125Bxx (5962-8864405Xx) vs. BUS-63125 (5962-8757902Xx)

2.3.1 Pinout differences for the 36-pin DIP package

	UT63M125Bxx (8864405Xx)	BUS-63125 (8757902Xx)	
Pin #	Description	Description	Impact
9	No Connect	Case Ground / Don't Care	None; Case ground is optional.
19	Vcca	No Connect / Don't Care	None; Vcca not used. Pin 19 is not internally connected.
28	Vcca	No Connect / Don't Care	None; Vcca not used. Pin 28 is not internally connected.

2.3.2 Mechanical differences for the 36-pin DIP package



	UT63M125Bxx (8864405Xx)	BUS-63125 (8757902Xx)
Package Length	1.890" MAX	1.900" MAX
Package Width	0.610" MAX	0.780" MAX
Package Height	0.155" MAX	0.210" MAX
Lead Width at Seating Plane	0.620" MAX	0.605" MAX
Lead Spacing	0.100" TYP	0.100" TYP
Lead Dimension	0.023" x 0.015" MAX	0.018" Diameter TYP
Lead Length	0.150" MIN	0.250" MIN

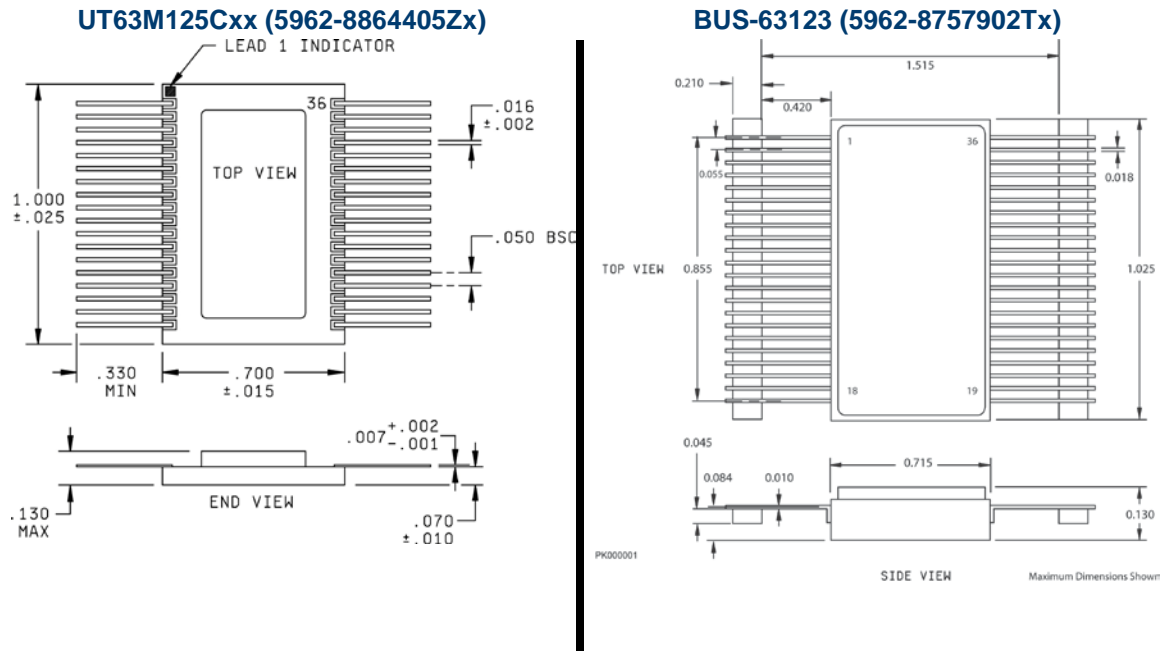
2.4 Aeroflex vs. DDC Comparisons:

UT63M125Cxx (5962-8864405Zx) vs. BUS-63123 (5962-8757902Tx)

2.4.1 Pinout differences for the 36-lead FP package

Pin #	UT63M125Cxx (8864405Zx)	BUS-63123 (8757902Tx)	
	Description	Description	Impact
19	Vcca	No Connect / Don't Care	None; Vcca not used. Pin 19 is not internally connected.
28	Vcca	No Connect / Don't Care	None; Vcca not used. Pin 28 is not internally connected.

2.4.2 Mechanical differences for the 36-lead FP package



	UT63M125Cxx (8864405Zx)	BUS-63123 (8757902Tx)
Package Length	1.025" MAX	1.025" MAX
Package Width	0.715" MAX	0.715" MAX
Package Height	0.130" MAX	0.130" MAX
Lead Spacing	0.050" TYP	0.050" TYP
Lead Dimension	0.018" x 0.009" MAX	0.018" x 0.010" MAX
Lead Length	0.330" MIN	0.380" MIN

3. Aeroflex Obsolete Transceivers (Prior to 2009)

3.1 Aeroflex DDC Comparisons:

UT63M107Pxx (5962-8864402Ux) vs. BUS-63107

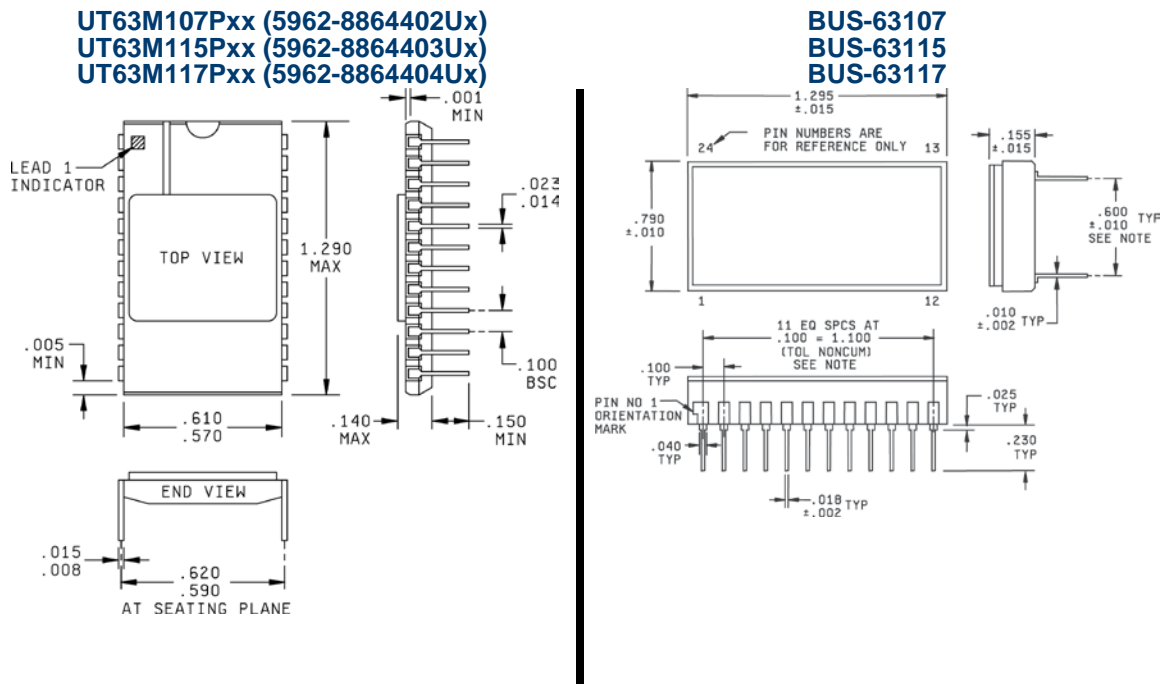
UT63M115Pxx (5962-8864403Ux) vs. BUS-63115

UT63M117Pxx (5962-8864404Ux) vs. BUS-63117

3.1.1 Pinout differences for the 24-pin DIP package

Pin #	Description	Description	Impact
13	Vcca	No Connect / Don't Care	None; Vcca not used. Pin 13 is not internally connected.

3.1.2 Mechanical differences for the 24-pin DIP package



	UT63M107Pxx (8864402Ux) UT63M115Pxx (8864403Ux) UT63M117Pxx (8864404Ux)	BUS-63107 BUS-63115 BUS-63117
Package Length	1.290" MAX	1.310" MAX
Package Width	0.610" MAX	0.800" MAX
Package Height	0.140" MAX	0.170" MAX
Lead Width at Seating Plane	0.620" MAX	0.610" MAX
Lead Spacing	0.100" TYP	0.100" TYP
Lead Dimension	0.023" x 0.015" MAX	0.020" x 0.012" MAX
Lead Length	0.150" MIN	0.205" TYP

3.2 Aeroflex DDC Comparisons:

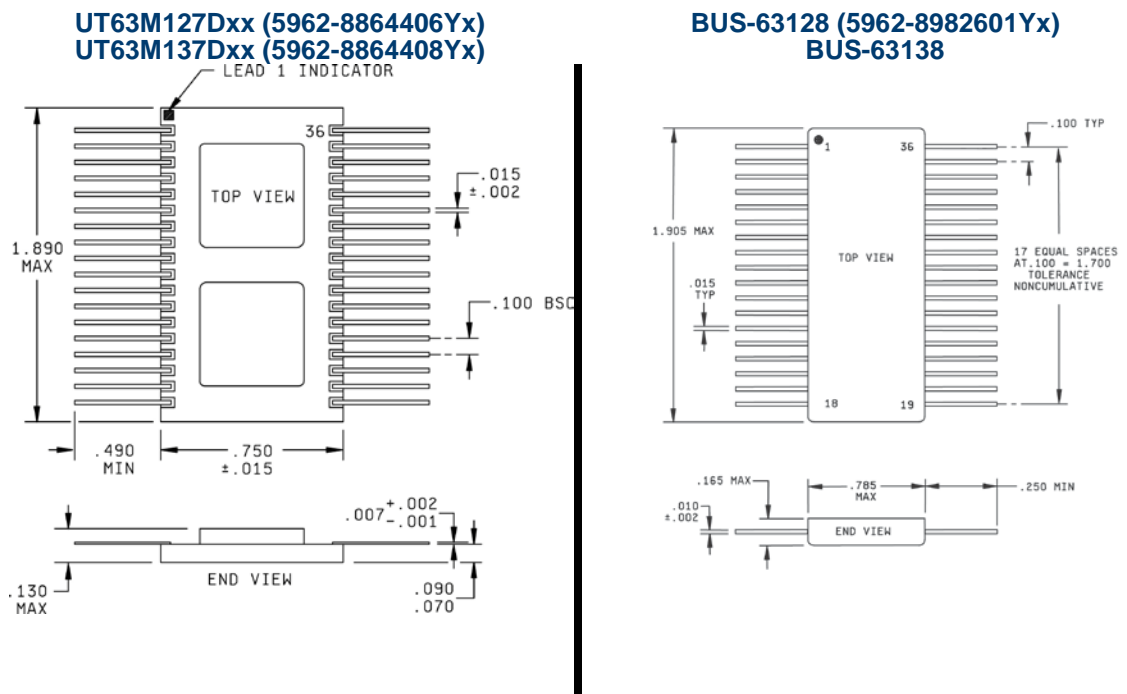
UT63M127Dxx (5962-8864406Yx) vs. BUS-63128 (5962-8982601Yx)

UT63M137Dxx (5962-8864408Yx) vs. BUS-63138

3.2.1 Pinout differences for the 36-lead FP package

Pin #	UT63M127Dxx (8864406Yx) UT63M137Dxx (8864408Yx)	BUS-63128 (8982601Yx) BUS-63138	
	Description	Description	Impact
9	No Connect	Case Ground / Don't Care	None; Case ground is optional.
19	Vcca	No Connect / Don't Care	None; Vcca not used. Pin 19 is not internally connected.
28	Vcca	No Connect / Don't Care	None; Vcca not used. Pin 28 is not internally connected.

3.2.2 Mechanical differences for the 36-lead FP package



	UT63M127Dxx (8864406Yx) UT63M137Dxx (8864408Yx)	BUS-63128 (8982601Yx) BUS-63138
Package Length	1.890" MAX	1.905" MAX
Package Width	0.765" MAX	0.785" MAX
Package Height	0.130" MAX	0.165" MAX
Lead Spacing	0.100" TYP	0.100" TYP
Lead Dimension	0.017" x 0.009" MAX	0.015" x 0.012" MAX
Lead Length	0.490" MIN	0.250" MIN

3.3 Aeroflex DDC Comparisons:

UT63M127Bxx (5962-8864406Xx) vs. BUS-63127 (5962-8982601Xx)

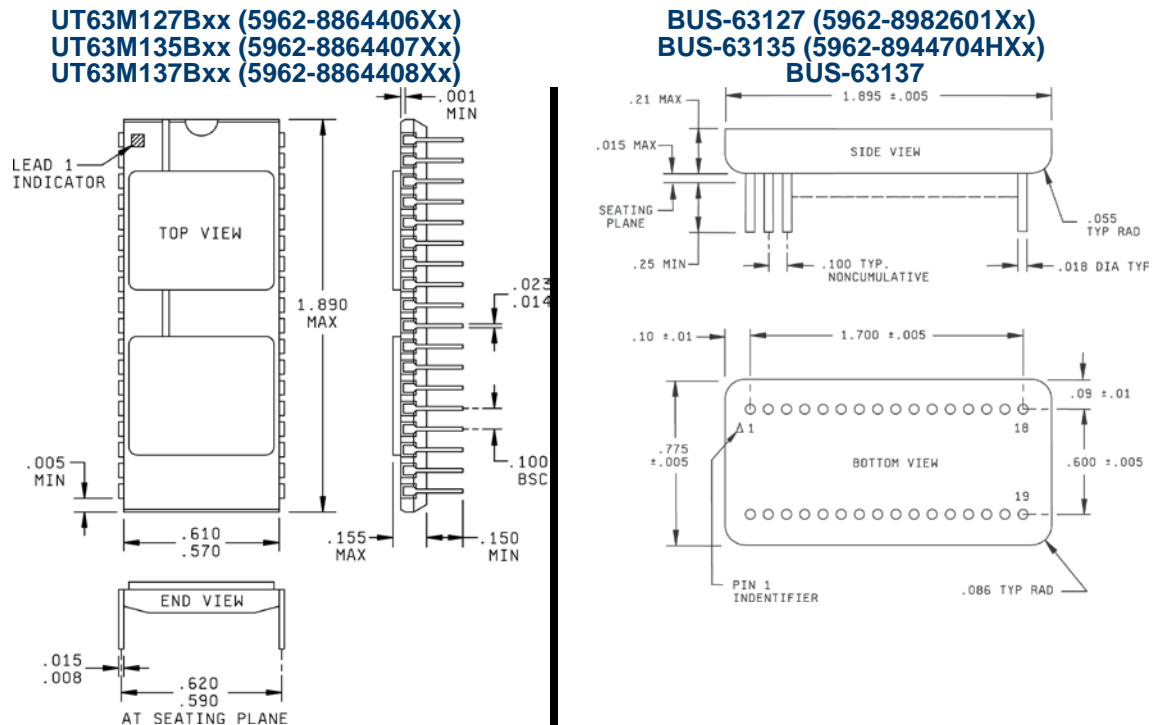
UT63M135Bxx (5962-8864407Xx) vs. BUS-63135 (5962-8944704HXx)

UT63M137Bxx (5962-8864408Xx) vs. BUS-63137

3.3.1 Pinout differences for the 36-pin DIP package

Pin #	Description		Impact
	UT63M127Bxx (8864406Xx) UT63M135Bxx (8864407Xx) UT63M137Bxx (8864408Xx)	BUS-63127 (8982601Xx) BUS-63135 (8944704HXx) BUS-63137	
9	No Connect	Case Ground / Don't Care	None; Case ground is optional.
19	Vcca	No Connect / Don't Care	None; Vcca not used. Pin 19 is not internally connected.
28	Vcca	No Connect / Don't Care	None; Vcca not used. Pin 28 is not internally connected.

3.3.2 Mechanical differences for the 36-pin DIP package



	UT63M127Bxx (8864406Xx) UT63M135Bxx (8864407Xx) UT63M137Bxx (8864408Xx)	BUS-63127 (8982601Xx) BUS-63135 (8944704HXx) BUS-63137
Package Length	1.890" MAX	1.900" MAX
Package Width	0.610" MAX	0.780" MAX
Package Height	0.155" MAX	0.210" MAX
Lead Width at Seating Plane	0.620" MAX	0.605" MAX
Lead Spacing	0.100" TYP	0.100" TYP
Lead Dimension	0.023" x 0.015" MAX	0.018" Diameter TYP
Lead Length	0.150" MIN	0.250" MIN

For more information, contact Data Bus Applications at 631-567-5600 or 1-800-DDC-5757 ext. 7771. Visit DDC on the web: www.ddc-web.com.

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