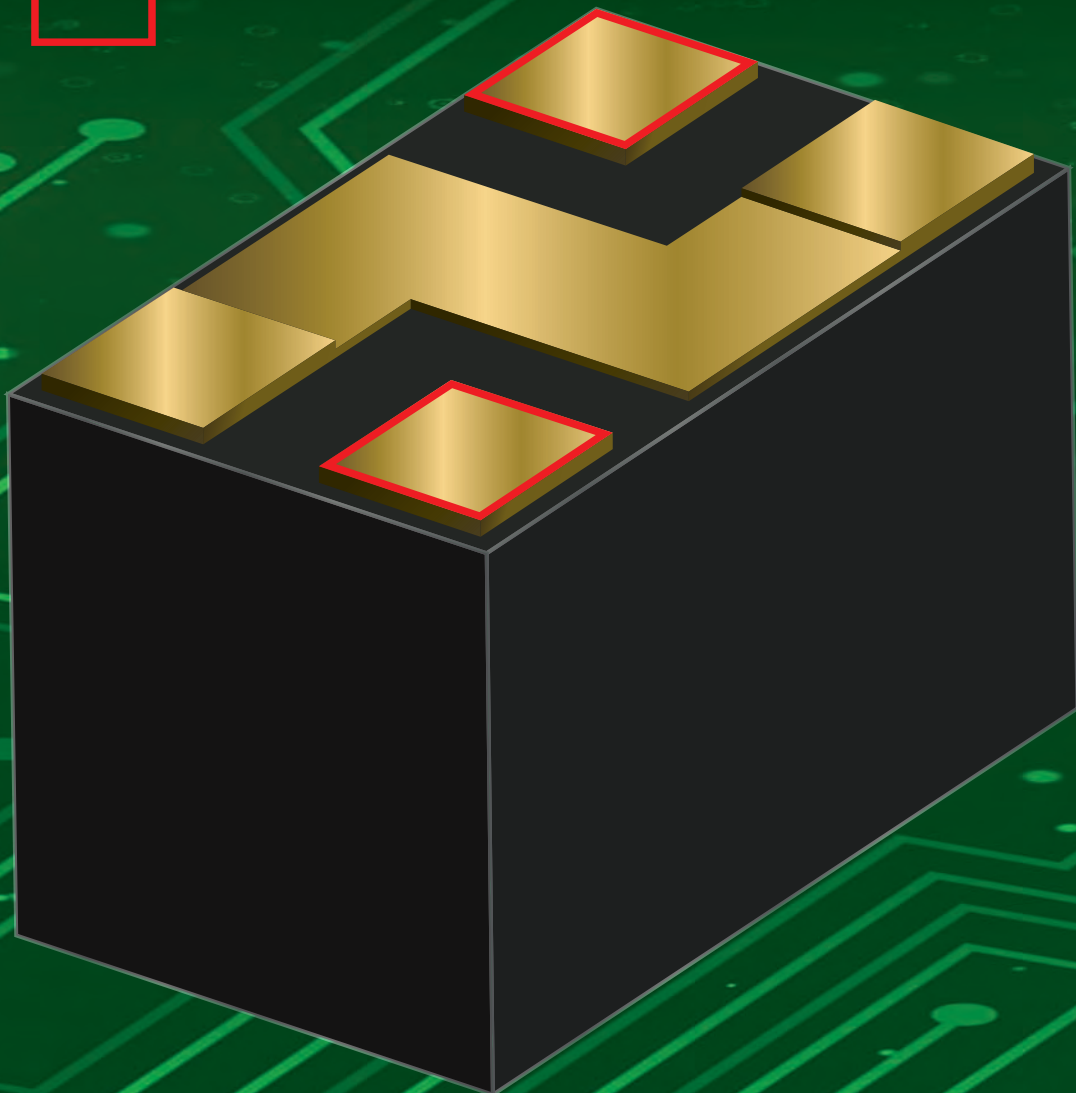
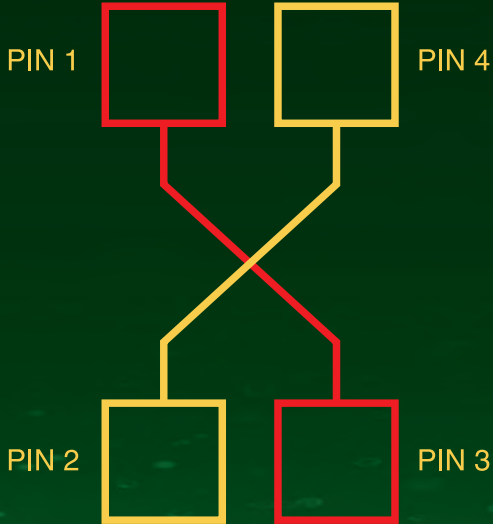




JUMPERS AND SPACERS PRODUCT GUIDE

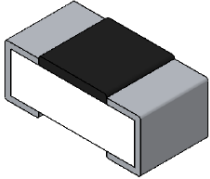
2025-A

SCHEMATIC



Zero Ohm Jumpers and Solderable PCB Spacers

Find it Fast Zero Ohm Jumpers



SR Series
2L
Page 5



SOD80 Series
MELF & Mini-MELF
Page 6~7



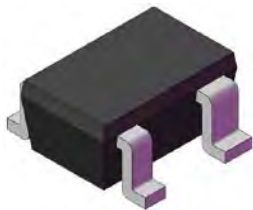
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2-Leads
Page 8~9



SOT23 Series
3-Leads
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SOT323 Series
3-Leads
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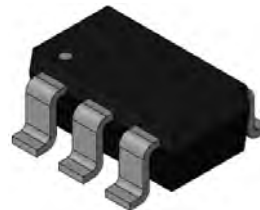
SOT343 Series
4-Leads
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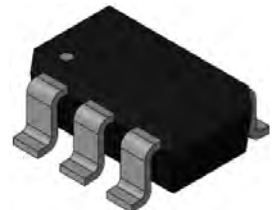
SOT25 Series
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SOT353 Series
5-Leads
Page 18~19



SOT26 Series
6-Leads
Page 20~21



SOT363 Series
6-Leads
Page 22~23



VSOP8, TSSOP8, SO8
8-Leads
Page 24~25



VSOP10, MSOP10
10-Leads
Page 26~27



SO, TSSOP Series
14~16Leads
Page 28~29



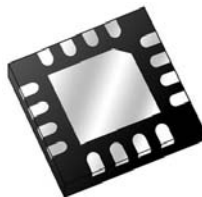
DPAK (TO252)
3~7 Leads
Page 30~31



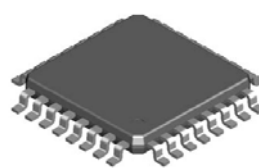
D2PAK (TO-263)
3~7 Leads
Page 32~33



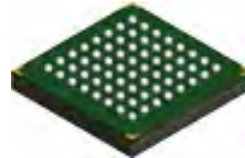
DIP & TO Series
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Page 34~35



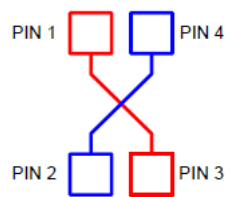
DFN & QFN
Series
6~100 Leads
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TQFP & LQFP Series
32~208 Leads
Page 38



BGA & LGA Series
32 to 2500 Balls
Page 39



CROSS OVER
JUMPERS
Page 48

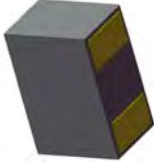
CUSTOM JUMPERS AVAILABLE
See Page 48 for Design Form



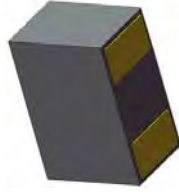
info@TopLine.tv
Tel 1-800-776-9888

Find it Fast PCB Spacers

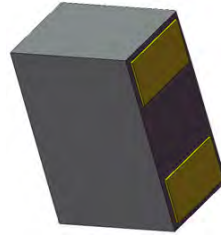
www.PCBjumper.com
www.PCBspacer.com



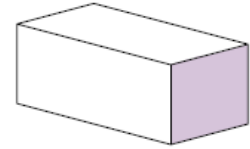
SSL0603 Series
Solderable FR4
Height 0.1 ~ 1.0mm
[Page 40~41](#)



SSL0805 Series
Solderable FR4
Height 0.2 ~ 1.5mm
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SSL1206 Series
Solderable FR4
Height 0.4 ~ 4.0mm
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SCC Series
Epoxy Mount Ceramic
Height 0.3 ~ 1.2mm
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CUSTOM SPACERS AVAILABLE
See Page 49 for Design Form



Contact: info@TopLine.tv
Tel 1-800-776-9888

About Jumper, & PCB Spacers

www.PCBjumper.com
www.PCBspacer.com

About TopLine

TopLine has manufactured Zero Ohm Jumpers and solderable PCB spacers since 1989.

About Zero Ohm Jumpers (p5~39)

Zero Ohm Jumpers conduct current and bridge over and around tracings on the PC Board even when the trace is on a 45° angle. Jumpers can be used to replace obsolete components on the fly or redesign a circuit after the board is in production. Enables designers creative routing even on single sided boards. Available in a wide assortment of standard pin-outs for devices including SOD, SOT, SOIC, TSSOP, QFN, QFP, BGA. Custom configurations also available. Jumpers mount just like normal components and are SMT solderable.

About PCB Spacers (p40~49)

PCB Spacers are non-conductive (insulated) and used to keep adjacent PC Boards from touching each other. Spacers can be used to prevent a sagging shield from touching a component. Or to support a heavy component. Spacers are SMT solderable just like normal components. A wide variety of standard footprints and heights available.

About Isolated Components

Non-conductive "Jumper" devices are available without internal connections and can be used as dummy space fillers. Space fillers are empty component devices that solder to the PC Board just like normal components. They are electrically isolated without internal connects. Space fillers will not short out or alter the current flow on the PCB. Space fillers can also be used to cover an empty pad on the PC Board.

Where to Buy (p50~51)

TopLine products are available world-wide through a network of authorized distributors.

RoHS Pb Free

All jumpers and spacers are Pb-Free and are RoHS and REACH compliant.

Packaging

Jumpers and Spacers are packaged like normal devices in Reels, tubes or trays. Contact TopLine for special packaging requirements.

Technical Support

Contact TopLine for technical support and questions for applications involving special needs. We look forward to assisting you. Email info@TopLine.tv or start an online-chat with TopLine at www.PCBjumper.com

We welcome your calls 1-800-776-9888

Contact:

TopLine Corporation

95 Highway 22 W.
Milledgeville, GA 31061 USA

Tel: +1-800-776-9888
Email: info@TopLine.tv

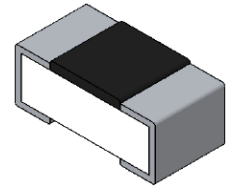
www.PCBjumper.com

We accept credit cards:



Ready to assist you.

SR Series Jumper 2L Zero Ohm 0Ω



Part Number	Pins	Schematic	Connection	Qty Reel	Reel Dia	Grade	Top Mark
SR03015E7A-ZERO-T	2L	DC12	1 to 2	40,000	7-inch	Halogen Free	None
SR01005P7A-ZERO-T	2L	DC12	1 to 2	20,000	7-inch	Halogen Free	None
SR0201P7A-ZERO-T	2L	DC12	1 to 2	10,000	7-inch	Halogen Free	None
SR0402P7A-ZERO-T	2L	DC12	1 to 2	10,000	7-inch	Halogen Free	None
SR0603P7A-ZERO-T	2L	DC12	1 to 2	5000	7-inch	Halogen Free	0
SR0805P7A-ZERO-T	2L	DC12	1 to 2	5000	7-inch	Halogen Free	000
SR1206P7A-ZERO-T	2L	DC12	1 to 2	5000	7-inch	Halogen Free	000
SR1210E7A-ZERO-T	2L	DC12	1 to 2	4000	7-inch	Halogen Free	000
SR1812E7A-ZERO-T	2L	DC12	1 to 2	4000	7-inch	Halogen Free	000
SR2010E7A-ZERO-T	2L	DC12	1 to 2	4000	7-inch	Halogen Free	000
SR2512E7A-ZERO-T	2L	DC12	1 to 2	4000	7-inch	Halogen Free	000

OTHER SR DEVICES AVAILABLE

Top View	Dimensions mm	Recommended PCB Land Pattern																																																																																																
	<table border="1"> <thead> <tr> <th>Series</th> <th>A</th> <th>B</th> <th>C</th> <th>D</th> <th>E</th> <th>W</th> <th>L</th> </tr> </thead> <tbody> <tr> <td>03015</td> <td>0.10</td> <td>0.14</td> <td>0.34</td> <td>1.15</td> <td>0.07</td> <td>0.15</td> <td>0.30</td> </tr> <tr> <td>01005</td> <td>0.18</td> <td>0.12</td> <td>0.48</td> <td>0.20</td> <td>0.10</td> <td>0.20</td> <td>0.40</td> </tr> <tr> <td>0201</td> <td>0.30</td> <td>0.15</td> <td>0.75</td> <td>0.30</td> <td>0.15</td> <td>0.30</td> <td>0.60</td> </tr> <tr> <td>0402</td> <td>0.50</td> <td>0.50</td> <td>1.50</td> <td>0.60</td> <td>0.20</td> <td>0.50</td> <td>1.00</td> </tr> <tr> <td>0603</td> <td>0.60</td> <td>0.90</td> <td>2.10</td> <td>0.90</td> <td>0.30</td> <td>0.80</td> <td>1.60</td> </tr> <tr> <td>0805</td> <td>0.70</td> <td>1.20</td> <td>2.60</td> <td>1.30</td> <td>0.40</td> <td>1.25</td> <td>2.00</td> </tr> <tr> <td>1206</td> <td>0.90</td> <td>2.00</td> <td>3.80</td> <td>1.70</td> <td>0.50</td> <td>1.60</td> <td>3.20</td> </tr> <tr> <td>1210</td> <td>1.00</td> <td>2.20</td> <td>4.20</td> <td>2.80</td> <td>0.50</td> <td>2.50</td> <td>3.20</td> </tr> <tr> <td>1812</td> <td>1.40</td> <td>3.10</td> <td>5.90</td> <td>3.10</td> <td>0.70</td> <td>3.00</td> <td>4.50</td> </tr> <tr> <td>2010</td> <td>2.80</td> <td>3.80</td> <td>6.20</td> <td>2.80</td> <td>0.60</td> <td>2.50</td> <td>5.00</td> </tr> <tr> <td>2512</td> <td>1.60</td> <td>4.90</td> <td>8.10</td> <td>3.50</td> <td>0.60</td> <td>3.20</td> <td>6.30</td> </tr> </tbody> </table>	Series	A	B	C	D	E	W	L	03015	0.10	0.14	0.34	1.15	0.07	0.15	0.30	01005	0.18	0.12	0.48	0.20	0.10	0.20	0.40	0201	0.30	0.15	0.75	0.30	0.15	0.30	0.60	0402	0.50	0.50	1.50	0.60	0.20	0.50	1.00	0603	0.60	0.90	2.10	0.90	0.30	0.80	1.60	0805	0.70	1.20	2.60	1.30	0.40	1.25	2.00	1206	0.90	2.00	3.80	1.70	0.50	1.60	3.20	1210	1.00	2.20	4.20	2.80	0.50	2.50	3.20	1812	1.40	3.10	5.90	3.10	0.70	3.00	4.50	2010	2.80	3.80	6.20	2.80	0.60	2.50	5.00	2512	1.60	4.90	8.10	3.50	0.60	3.20	6.30	
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2512	1.60	4.90	8.10	3.50	0.60	3.20	6.30																																																																																											

Part Number System

<u>SR1206</u> - Series		<u>P7A</u> Packaging		- <u>ZERO</u> Schematic	- <u>I</u> Plating
<u>Inch</u>	<u>Metric</u>	<u>Inch</u>	<u>Metric</u>	P7A = 7" (Paper Tape) Reel E7A = 7" (Plastic) Reel	RoHS Pb-Free Matte Tin
01005	0402	1206	3216	ZERO = DC12 < 50 mΩ	
0201	0603	1210	3225	P4A = 4" (Paper Tape) Reel E4A = 4" (Plastic) Reel	
0402	1005	1812	4532		
0603	1608	2010	5025		
0805	2012	2512	6332		

INFO

- Note 1: Resistance: Near Zero Ohm Jumper < 50mΩ per connection
- Note 2: Temperature Junction T_j +150°C Peak Reflow +260°C (10 Seconds) Storage -65°C ~ +150°C
- Note 3: Working Voltage 25V~100V Current Rating 0.5A~2.0A Power 0.031W~2W @25°C
- Note 4: MSL (Moisture Sensitivity Level) per JEDEC Standard J-STD-020-E (as amended)
- Note 5: Application: Mount and solder PCB Jumper using same guidelines as normal component.
- Note 6: Ask TopLine for other sizes available.



Contact: info@TopLine.tv
Tel 1-800-776-9888
www.PCBjumper.com

MELF Series Jumper 2L Zero Ohm 0Ω



Part Number	Pins	Schematic	Connection	Qty Reel	Reel Dia	Grade	Mark
Mini-MELF							
SOD80E4A-T-DC12	2L	DC12	1 to 2	500	4-inch	Halogen Free	NONE
SOD80E7A-T-DC12	2L	DC12	1 to 2	2500	7-inch	Halogen Free	NONE
MELF							
SM1E4A-T-DC12	2L	DC12	1 to 2	250	4-inch	Halogen Free	NONE
SM1E7A-T-DC12	2L	DC12	1 to 2	1000	7-inch	Halogen Free	NONE
SM1E13A-T-DC12	2L	DC12	1 to 2	5000	13-inch	Halogen Free	NONE

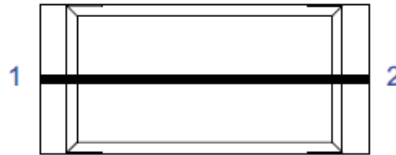
Part Number System			
<u>SOD80</u> Series	<u>E7A</u> Packaging	-	<u>T</u> Plating
2L-TERMINAL PACKAGE	<u>SOD80</u> E4A = 500 pcs E7A = 3000 pcs	-	RoHS Pb-Free Matte Tin
<u>Reference SOD80:</u> DO-213AC LL-34 Mini-MELF	<u>SM1</u> E4A = 250 pcs E7A = 1000 pcs E13A = 5000 pcs		<u>DC12</u> Schematic
<u>Reference SM1:</u> LL-41 MELF			CODE CONNECTION DC12 1~2 ISO = No Connection

INFO

- Note 1: Resistance: Near Zero Ohm Jumper < 50mΩ per connection
- Note 2: Temperature Junction T_j +150°C Peak Reflow +260°C (10 Seconds) Storage -65°C ~ +150°C
- Note 3: Working Voltage 100V Current Rating 150mA Power 200mW @25°C
- Note 4: MSL (Moisture Sensitivity Level) per JEDEC Standard J-STD-020-E (as amended)
- Note 5: Application: Mount and solder PCB Jumper using same guidelines as normal component.
- Note 6: Parts are non-polarized. No polarity marking is required.



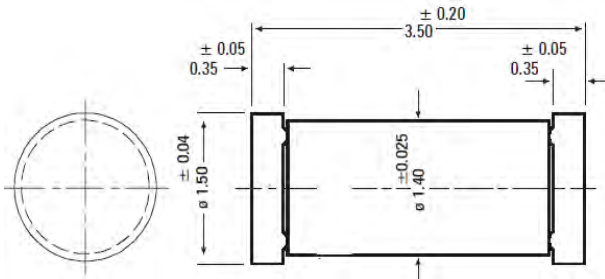
**SCHEMATIC
 PIN SHORTED CONNECTIONS
 (TOP VIEW)**



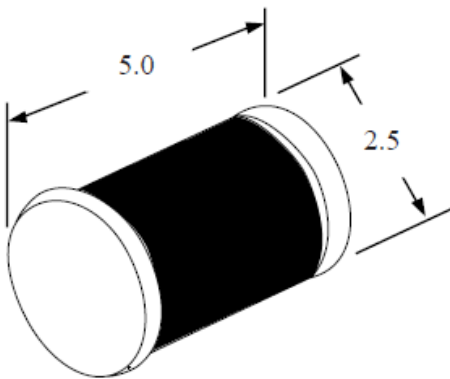
DC12 - Zero Ohm

PACKAGE OUTLINE

SOD80 TOP VIEW

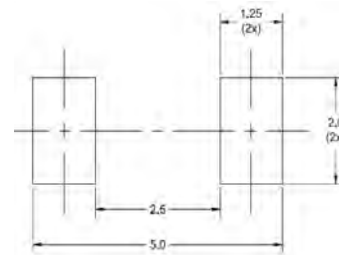


SM1 PERSPECTIVE VIEW



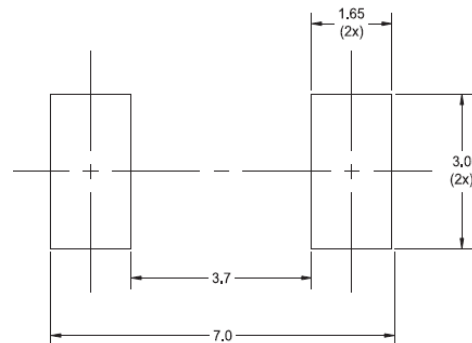
PCB PATTERN

SOD80



PCB Board dimensions are presented only as a guideline. Designers should use their own experience when designing PCB.

SM1











PCB Board dimensions are presented only as a guideline. Designers should use their own experience when designing PCB.

SOD Series Jumper 2L Zero Ohm 0Ω



Part Number	Pins	Schematic	Connection	Qty Reel	Reel Dia	Grade	Top Mark
SOD123G-E7A-T-DC12	2L	DC12	1 to 2	3000	7-inch	Halogen Free	12D
SOD123FW-E7A-T-DC12	2L	DC12	1 to 2	2500	7-inch	Halogen Free	S
SOD323G-E7A-T-DC12	2L	DC12	1 to 2	3000	7-inch	Halogen Free	12
SOD523FL-E7A-T-DC12	2L	DC12	1 to 2	4000	7-inch	Halogen Free	000

OTHER SOD DEVICES AVAILABLE

SOD123G Gull-Wing Lead	SOD123FW Wide Flat Lead	SOD323G Gull-Wing Lead	SOD523FL Narrow Flat Lead
 BOTTOM	 BOTTOM	 BOTTOM	 BOTTOM
 TOP	 TOP	 TOP	 TOP

Part Number System

SOD123G - Series	E7A Packaging	- I Plating	- DC12 Schematic
2L-TERMINAL PACKAGE	<u>E7A 7" (178mm) Reel</u> SOD123G = 3000 pcs SOD123FW = 2500 pcs SOD323G = 3000 pcs SOD523FL = 4000 pcs	RoHS Pb-Free Matte Tin	Code DC12 Connections 1-2
<u>Reference:</u> SOD123G Gull Wing SOD123FW Flat Lead SOD323G Gull Wing SOD523FL Flat Lead	<u>E4A 4" (100mm) Reel</u> 500 pcs E=Partial Reel		ISO No Connection

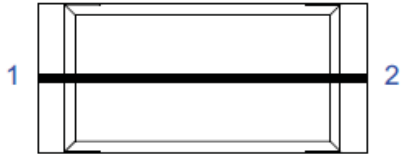
INFO

- Note 1: Resistance: Near Zero Ohm Jumper < 50mΩ per connection
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- Note 3: Working Voltage 100V Current Rating 150mA Power 200mW @25°C
- Note 4: MSL (Moisture Sensitivity Level) per JEDEC Standard J-STD-020-E (as amended)
- Note 5: Application: Mount and solder PCB Jumper using same guidelines as normal component.
- Note 6: Parts are non-polarized. No polarity marking is required.

SOD Series Jumper 2L Zero Ohm 0Ω



SCHEMATIC SHORTED CONNECTION (TOP VIEW)

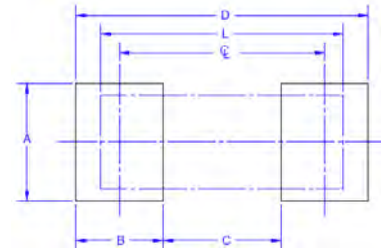


DC12 - Zero Ohm

PCB PATTERN (Dimensions mm)

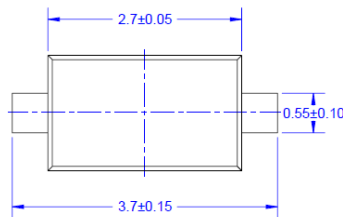
PCB Dimensions

	SOD 123G	SOD 123FW	SOD 323G	SOD 523F
A	0.8	1.4	0.7	0.6
B	0.8	1.25	0.9	0.7
C	2.8	1.0	1.7	1.2
D	4.7	3.5	3.6	2.6
L	3.7	2.25	2.7	1.9
	3.6	2.5	2.6	1.6



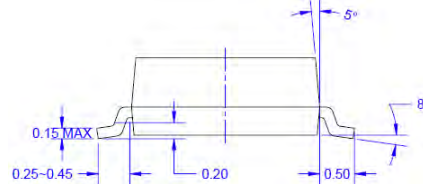
TOP VIEW

SOD123G



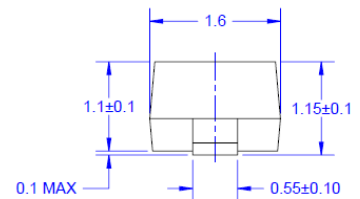
SIDE VIEW

SOD123G

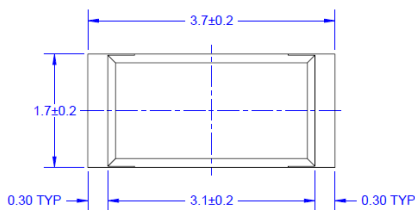


END VIEW

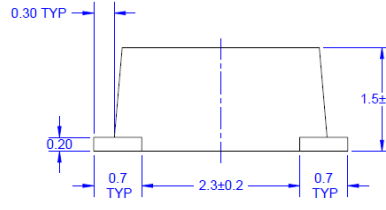
SOD123G



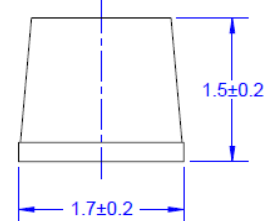
SOD123FW



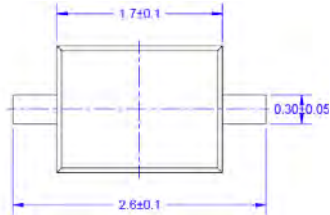
SOD123FW



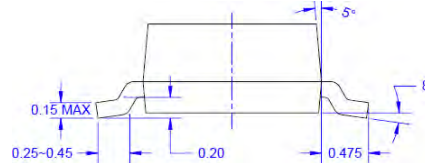
SOD123FW



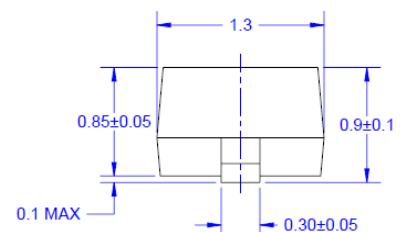
SOD323G



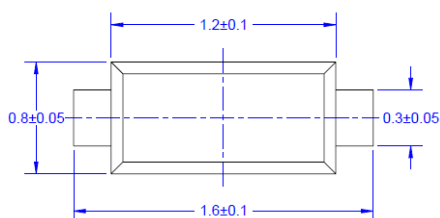
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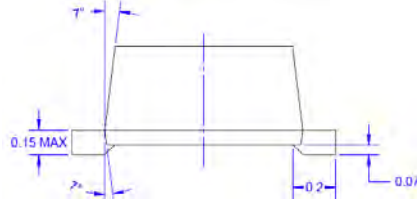
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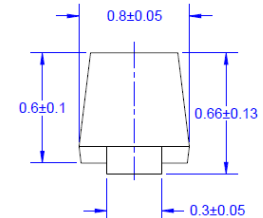
SOD523F



SOD523F



SOD523F



SOT23 Series Jumper 3L Zero Ohm 0Ω



Part Number	Pins	Schematic	Connection	Qty Reel	Reel Dia	Grade	Top Mark
SOT23E7A-T-DC13D	3L	DC13	1 to 3	3000	7-inch	Commercial	D13
SOT23E7A-T-DC13H	3L	DC13	1 to 3	3000	7-inch	Halogen Free	13H
SOT23E7A-T-DC13Q	3L	DC13	1 to 3	3000	7-inch	AEC-Q101	13Q
SOT23E7A-T-DC23D	3L	DC23	2 to 3	3000	7-inch	Commercial	D23
SOT23E7A-T-DC23H	3L	DC23	2 to 3	3000	7-inch	Halogen Free	23H
SOT23E7A-T-DC23Q	3L	DC23	2 to 3	3000	7-inch	AEC-Q101	23Q
SOT23E7A-T-DC123D	3L	DC123	1~2~3	3000	7-inch	Commercial	D123
SOT23E7A-T-DC1231H	3L	DC1231	1~2~3~1	3000	7-inch	Halogen Free	3H
SOT23E7A-T-DC1231Q	3L	DC1231	1~2~3~1	3000	7-inch	AEC-Q101	3Q

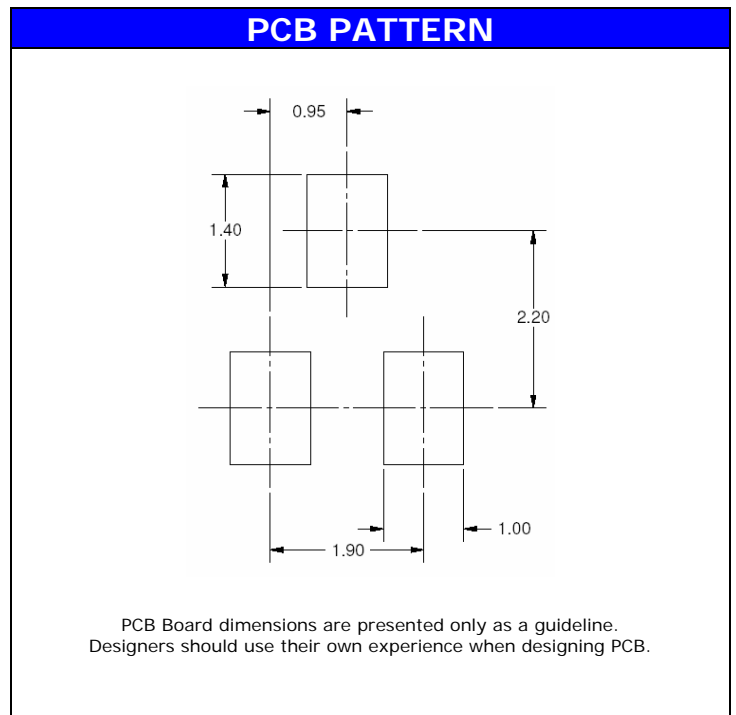
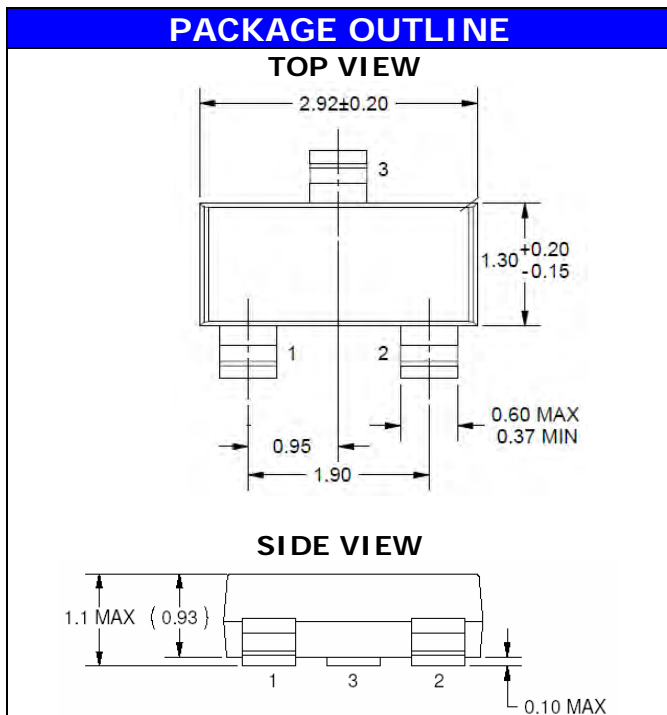
Part Number System							
<u>SOT23</u>	<u>E7A</u>	-	<u>T</u>	-	<u>DC13</u>	-	<u>OPTION</u>
Series	Packaging		Plating		Code Connections	Code	Description MSL
3L-TERMINAL PACKAGE	E7A REEL 3000pcs		RoHS Pb-Free Matte Tin		DC13 1-3	None	STANDARD MSL-3
	E4A REEL 500pcs				DC23 2~3	D	DUMMY DIE MSL-3
					DC123 1~2~3	H	HALOGEN FREE MSL-1
<u>Reference:</u> TO-236AB					DC1231 1~2~3~1	Q	AEC-Q101 MSL-1
	E=Partial Reel				ISO = No Connection		
	B = Bulk						

INFO

- Note 1: Resistance: Near Zero Ohm Jumper < 50mΩ per connection
- Note 2: Temperature Junction T_j +150°C Peak Reflow +260°C (10 Seconds) Storage -65°C ~ +150°C
- Note 3: Working Voltage 100V Current Rating 150mA Power 200mW @25°C
- Note 4: MSL (Moisture Sensitivity Level) per JEDEC Standard J-STD-020-E (as amended)
- Note 5: Application: Mount and solder PCB Jumper using same guidelines as normal component.



SCHEMATIC - PIN SHORTED CONNECTIONS (TOP VIEW)			
DC13	DC23	DC123	DC1231
Zero Ohm	Zero Ohm	Zero Ohm	Zero Ohm





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 Tel 1-800-776-9888
 www.PCBjumper.com

SOT323 Series Jumper 3L Zero Ohm 0Ω

Reference: SC70-3L



Part Number	Pin	Schematic	Connection	Qty Reel	Reel Dia	Grade	Top Mark
SOT323E7A-T-DC13D	3L	DC13	1 to 3	3000	7-inch	Halogen Free	13D
SOT323E7A-T-DC23D	3L	DC23	2 to 3	3000	7-inch	Halogen Free	23D
SOT323E7A-T-DC123D	3L	DC123	1~2~3	3000	7-inch	Halogen Free	123

Part Number System

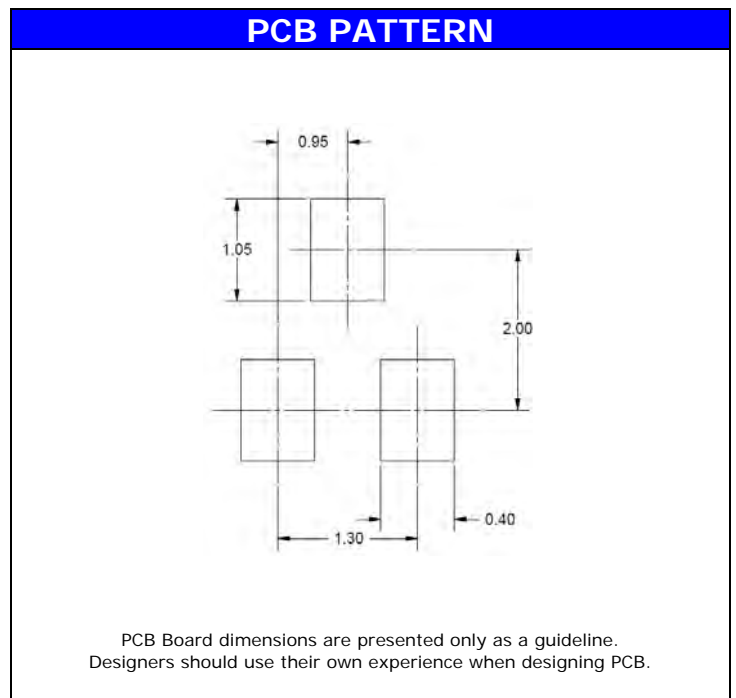
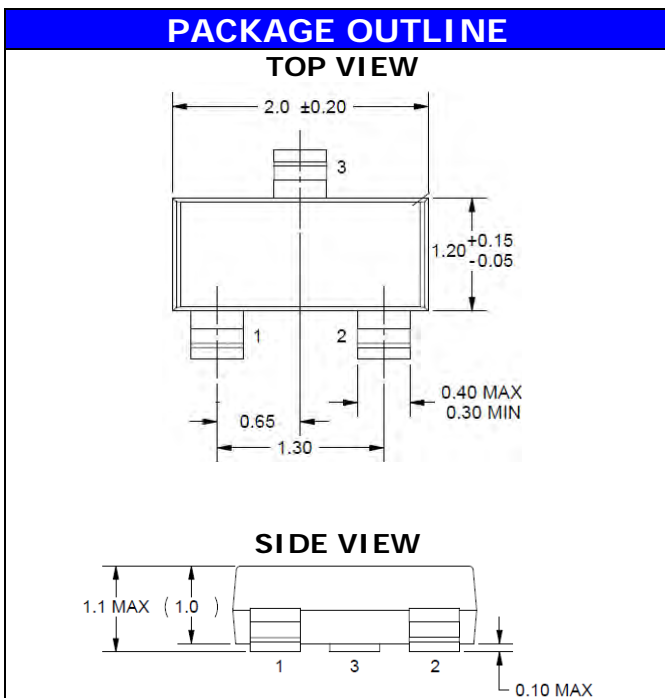
<u>SOT323</u>	<u>E7A</u>	-	<u>T</u>	-	<u>DC13</u>	-	<u>D</u>
Series	Packaging		Plating		Code Connections	Code	Description
3L-TERMINAL PACKAGE	E7A REEL 3000 pcs		RoHS Pb-Free Matte Tin		DC13 1-3 DC23 2~3 DC123 1~2~3	D	Halogen Free MSL-1 Dummy Die
<u>Reference:</u> SC70-3L	E4A REEL 500 pcs E=Partial Reel				ISO = No Connection		

INFO

- Note 1: Resistance: Near Zero Ohm Jumper < 50mΩ per connection
- Note 2: Temperature Junction T_j +150°C Peak Reflow +260°C (10 Seconds) Storage -65°C ~ +150°C
- Note 3: Working Voltage 100V Current Rating 150mA Power 200mW @25°C
- Note 4: MSL (Moisture Sensitivity Level) per JEDEC Standard J-STD-020-E (as amended)
- Note 5: Application: Mount and solder PCB Jumper using same guidelines as normal component.



SCHEMATIC - PIN SHORTED CONNECTIONS (TOP VIEW)		
DC13	DC23	DC123
<p style="text-align: center;">Zero Ohm</p>	<p style="text-align: center;">Zero Ohm</p>	<p style="text-align: center;">Zero Ohm</p>

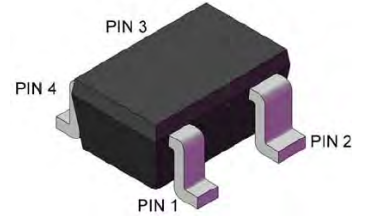




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SOT343 Series Jumper 4L Zero Ohm 0Ω

Reference: SC-82AB & SC70-4L



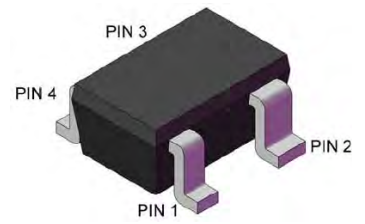
Part Number	Pin	Schematic	Connections	QTY Reel	Reel Dia	Grade	Top Mark
SOT343E7A-T-DC13D	4L	DC13	1 to 3	3000	7-inch	Halogen Free	13D
SOT343E7A-T-DC14D	4L	DC14	1 to 4	3000	7-inch	Halogen Free	14D
SOT343E7A-T-DC22D	4L	DC22	2 to 3	3000	7-inch	Halogen Free	22D
SOT343E7A-T-DC42D	4L	DC42	2 to 4	3000	7-inch	Halogen Free	42D
SOT343E7A-T-DC1234D	4L	DC1234	1 to 2 3 to 4	3000	7-inch	Halogen Free	AD
SOT343E7A-T-DC1423D	4L	DC1423	1 to 4 2 to 3	3000	7-inch	Halogen Free	BD

Part Number System								
<u>SOT343</u>	<u>E7A</u>	-	<u>T</u>	-	<u>DC13</u>	-	<u>OPTION</u>	
Series	Packaging		Plating		Code	Connections	Code	Description
4L-TERMINAL PACKAGE	E7A REEL 3000pcs		T= Pb Free RoHS Matte Tin		DC13	1-3	D	Halogen Free MSL-1
	E4A REEL 500pcs				DC14	1~4		DUMMY DIE
	E=Partial Reel				DC22	1~4 , 2~3		
<u>Reference:</u> SC-82AB SC70-4L					DC42	2~4		
					DC1234	1~2 , 3~4		
					DC1423	1~4, 2~3		
					ISO = No Connection			

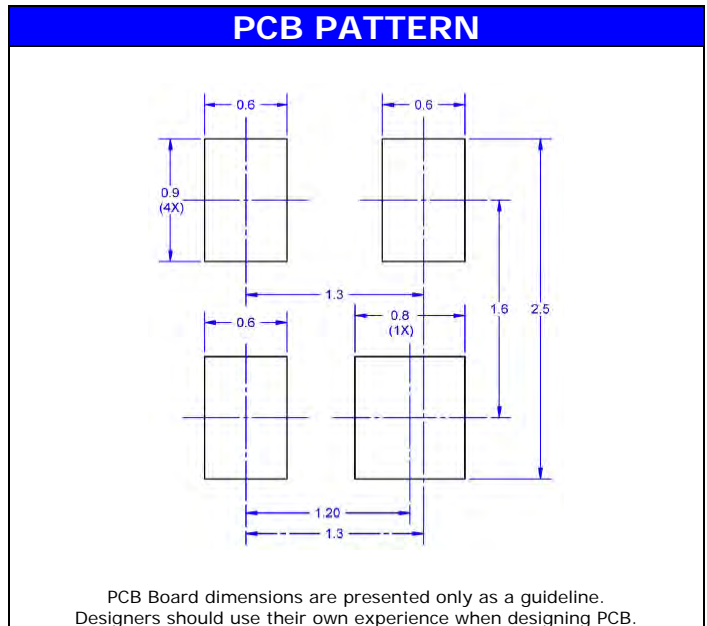
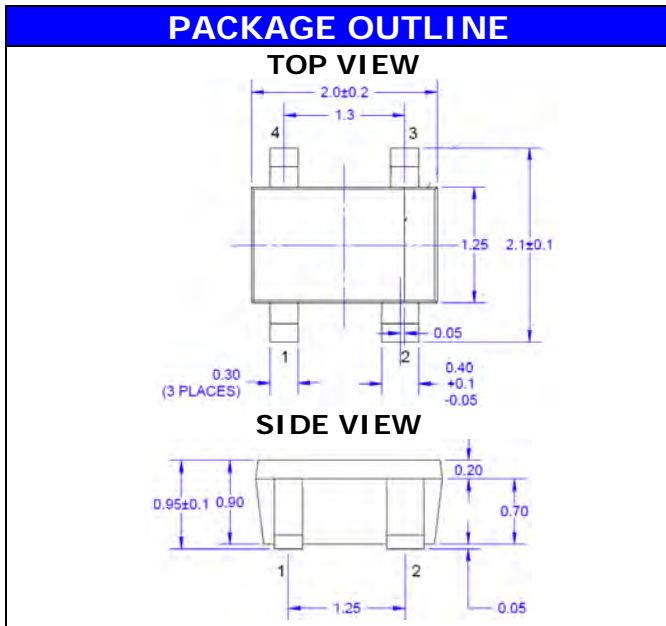
INFO Note 1: Resistance: Near Zero Ohm Jumper < 50mΩ per connection
 Note 2: Temperature Junction T_j +150°C Peak Reflow +260°C (10 Seconds) Storage -65°C ~ +150°C
 Note 3: Working Voltage 100V Current Rating 150mA Power 200mW @25°C
 Note 4: MSL (Moisture Sensitivity Level) per JEDEC Standard J-STD-020-E (as amended)
 Note 5: Application: PCB Jumper. Mount and solder using same guidelines as normal component.

SOT343 Series Jumper 4L Zero Ohm 0Ω

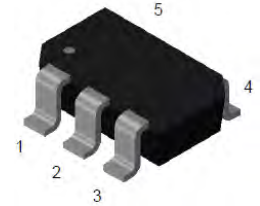
Reference: SC-82AB & SC70-4L



SCHEMATIC - PIN SHORTED CONNECTIONS (TOP VIEW)			
DC13	DC14	DC22	DC42
			CUSTOM PIN-OUT AVAILABLE
DC1234	DC1423		



SOT25 Series Jumper 5L Zero Ohm 0Ω

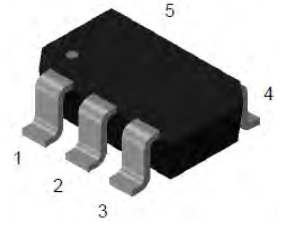


Reference: SOT23-5L

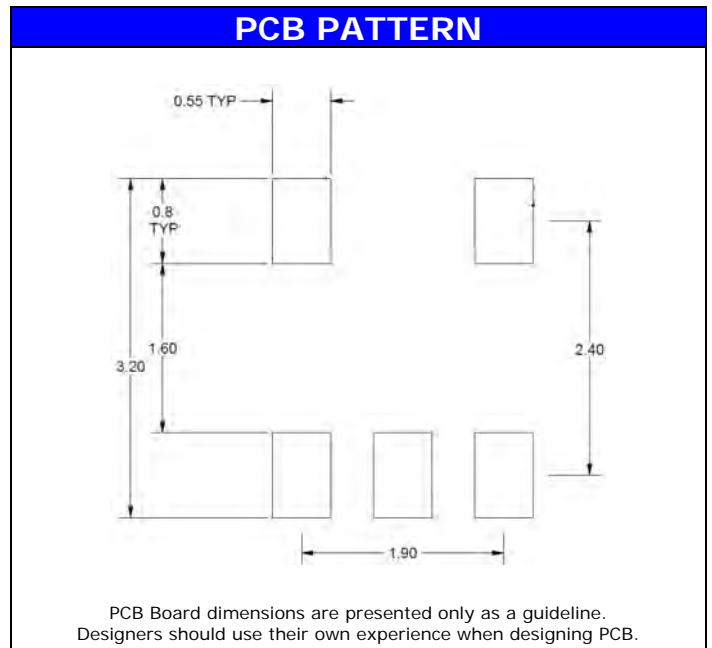
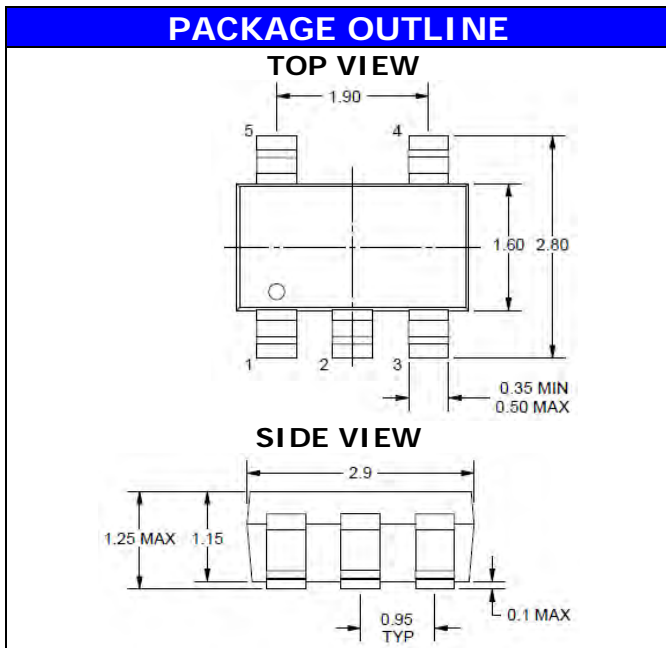
Part Number	Pins	Schematic	Connections	QTY Reel	Reel Dia	Grade	Top Mark
SOT25E7A-T-DC19D	5L	DC19	1 to 2 3 to 4	3000	7-inch	Halogen Free	19D
SOT25E7A-T-DC21D	5L	DC21	1 to 2	3000	7-inch	Halogen Free	21D
SOT25E7A-T-DC25D	5L	DC25	1 to 5 3 to 4	3000	7-inch	Halogen Free	25D
SOT25E7A-T-DC31D	5L	DC31	1 to 3	3000	7-inch	Halogen Free	31D
SOT25E7A-T-DC34D	5L	DC34	3 to 4	3000	7-inch	Halogen Free	34D
SOT25E7A-T-DC41D	5L	DC41	1 to 4	3000	7-inch	Halogen Free	41D
SOT25E7A-T-DC45D	5L	DC45	4 to 5	3000	7-inch	Halogen Free	45D
SOT25E7A-T-DC51D	5L	DC51	1 to 5	3000	7-inch	Halogen Free	51D

Part Number System							
<u>SOT25</u>	<u>E7A</u>	-	<u>T</u>	-	<u>DC25</u>	-	<u>OPTION</u>
Series	Packaging		Plating		Code Connections		Code Description
5L-TERMINAL PACKAGE	E7A REEL 3000pcs		T= Pb Free RoHS Matte Tin		DC19 1-2, 3~4		D Halogen Free MSL-1
	E4A REEL 500pcs				DC21 1~2		DUMMY DIE
	E=Partial Reel				DC25 1~5, 3~4		
<u>Reference:</u> SOT23-5L SC74A					DC31 1~3		
					DC34 3~4		
					DC41 1~4		
					DC45 4~5		
					DC51 1~5		
ISO = No Connection							

INFO Note 1: Resistance: Near Zero Ohm Jumper < 50mΩ per connection
 Note 2: Temperature Junction T_j +150°C Peak Reflow +260°C (10 Seconds) Storage -65°C ~ +150°C
 Note 3: Working Voltage 100V Current Rating 150mA Power 200mW @25°C
 Note 4: MSL (Moisture Sensitivity Level) per JEDEC Standard J-STD-020-E (as amended)
 Note 5: Application: PCB Jumper. Mount and solder using same guidelines as normal component.



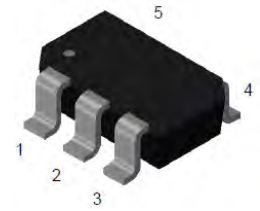
SCHEMATIC - PIN SHORTED CONNECTIONS (TOP VIEW)			
DC19	DC21	DC25	DC31
DC34	DC41	DC45	DC51





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SOT353 Series Jumper 5L Zero Ohm 0Ω



Reference: SC88-A & SC70-5L

Part Number	Pins	Schematic	Connections	QTY Reel	Reel Dia	Grade	Top Mark
SOT353E7A-T-DC25D	5L	DC25	1 to 5 3 to 4	3000	7-inch	Halogen Free	25D
SOT353E7A-T-DC41D	5L	DC41	1 to 4	3000	7-inch	Halogen Free	41D
SOT353E7A-T-DC19D	5L	DC19	1 to 2 3 to 4	3000	7-inch	Halogen Free	19D
SOT353E7A-T-DC21D	5L	DC21	1 to 2	3000	7-inch	Halogen Free	21D
SOT353E7A-T-DC34D	5L	DC34	3 to 4	3000	7-inch	Halogen Free	34D
SOT353E7A-T-DC45D	5L	DC45	4 to 5	3000	7-inch	Halogen Free	45D
SOT353E7A-T-DC51D	5L	DC51	1 to 5	3000	7-inch	Halogen Free	51D

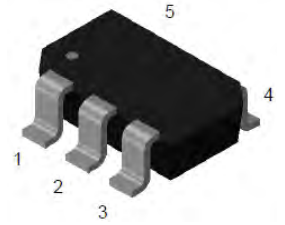
Part Number System							
<u>SOT353</u>	<u>E7A</u>	- <u>T</u>	-	<u>DC19</u>	-	<u>OPTION</u>	
Series	Packaging	Plating		Code	Connections	Code	Description
5L-TERMINAL PACKAGE	E7A REEL 3000pcs	T= Pb Free RoHS Matte Tin		DC19	1-2, 3~4	None	STANDARD
	E4A REEL 500pcs			DC21	1~2	D	DUMMY DIE
<u>Reference:</u> SC88-A SC88-5 SC70-5L	E=Partial Reel			DC25	1~5, 3~4		
				DC34	3~4		
				DC41	1~4		
				DC45	4~5		
				DC51	1~5		
ISO = No Connection							

INFO

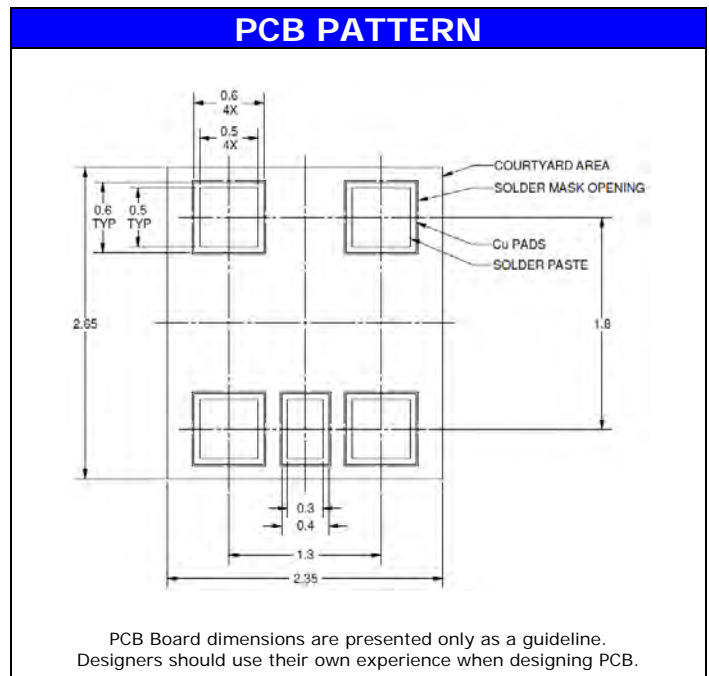
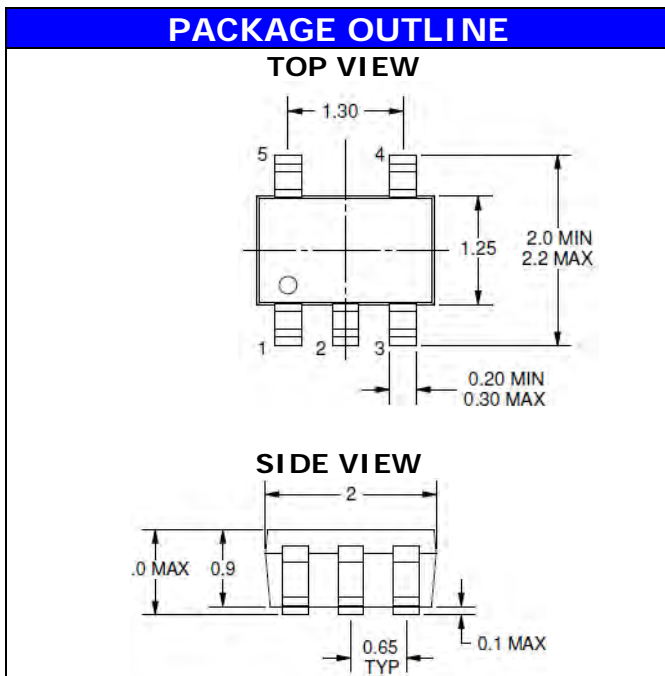
- Note 1: Resistance: Near Zero Ohm Jumper < 50mΩ per connection
- Note 2: Temperature Junction T_j +150°C Peak Reflow +260°C (10 Seconds) Storage -65°C ~ +150°C
- Note 3: Working Voltage 100V Current Rating 150mA Power 200mW @25°C
- Note 4: MSL (Moisture Sensitivity Level) per JEDEC Standard J-STD-020-E (as amended)
- Note 5: Application: PCB Jumper. Mount and solder using same guidelines as normal component.

SOT353 Series Jumper 5L Zero Ohm 0Ω

Reference: SC88-A & SC70-5L



SCHEMATIC - PIN SHORTED CONNECTIONS (TOP VIEW)			
<p>DC19</p>	<p>DC21</p>	<p>DC25</p>	<p>DC34</p>
<p>DC41</p>	<p>DC45</p>	<p>DC51</p>	<p>CUSTOM PIN-OUT AVAILABLE</p>

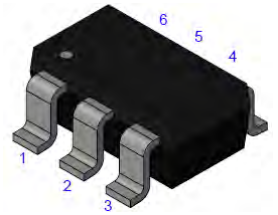




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SOT26 Series Jumper 6L Zero Ohm 0Ω

Reference: SOT23-6L



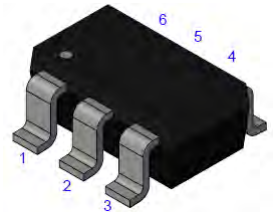
Part Number	Pins	Schematic	Connections	QTY Reel	Reel Dia	Grade	Top Mark
SOT26E7A-T-DC16D	6L	DC16	1 to 6 2 to 5 3 to 4	3000	7-inch	Halogen Free	D16
SOT26E7A-T-DC17D	6L	DC17	1 to 2 3 to 4 5 to 6	3000	7-inch	Halogen Free	D17
SOT26E7A-T-DC31D	6L	DC31	1 to 3	3000	7-inch	Halogen Free	D31
SOT26E7A-T-DC2635D	6L	DC2635	2 to 6 3 to 5	3000	7-inch	Halogen Free	D26

Part Number System								
<u>SOT26</u>	<u>E7A</u>	-	<u>T</u>	-	<u>DC16</u>	-	<u>OPTION</u>	
Series	Packaging		Plating		Code	Connections	Code	Description
6L-TERMINAL PACKAGE	E7A REEL 3000pcs		T= Pb Free RoHS Matte Tin		DC16	1-6, 2~5, 3~4	None	STANDARD
	E4A REEL 500pcs				DC17	1~2, 3~4, 5~6	D	DUMMY DIE
					DC31	1~3		
<u>Reference</u> SOT23-6L SC74					DC2635	2~6, 3~5		
	E=Partial Reel				ISO	No Connection		

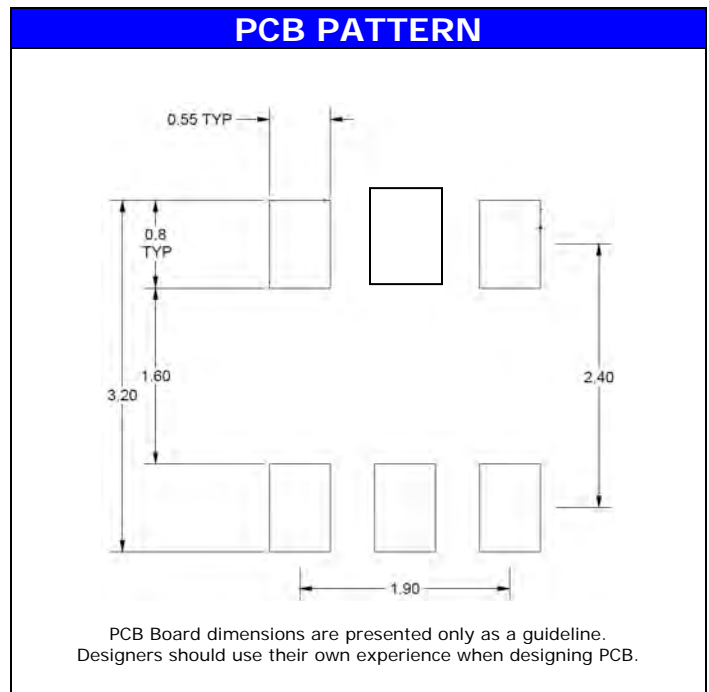
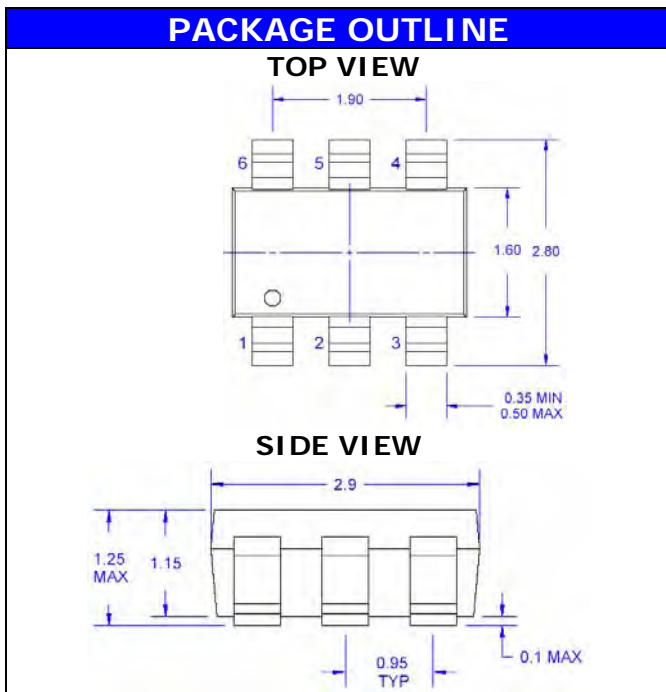
- INFO**
- Note 1: Resistance: Near Zero Ohm Jumper < 50mΩ per connection
 - Note 2: Temperature Junction T_j +150°C Peak Reflow +260°C (10 Seconds) Storage -65°C ~ +150°C
 - Note 3: Working Voltage 100V Current Rating 150mA Power 200mW @25°C
 - Note 4: MSL (Moisture Sensitivity Level) per JEDEC Standard J-STD-020-E (as amended)
 - Note 5: Application: PCB Jumper. Mount and solder using same guidelines as normal component.

SOT26 Series Jumper 6L Zero Ohm 0Ω

Reference: SOT23-6L



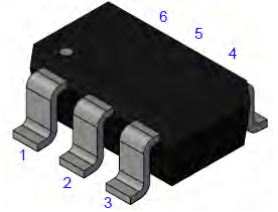
SCHEMATIC - PIN SHORTED CONNECTIONS (TOP VIEW)			
DC16	DC17	DC31	DC2635
			CUSTOM PIN-OUT AVAILABLE





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SOT363 Series Jumper 6L Zero Ohm 0Ω

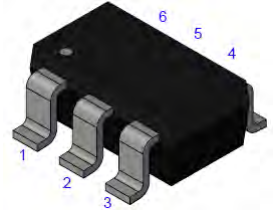


Reference: SC70-6L & SC88

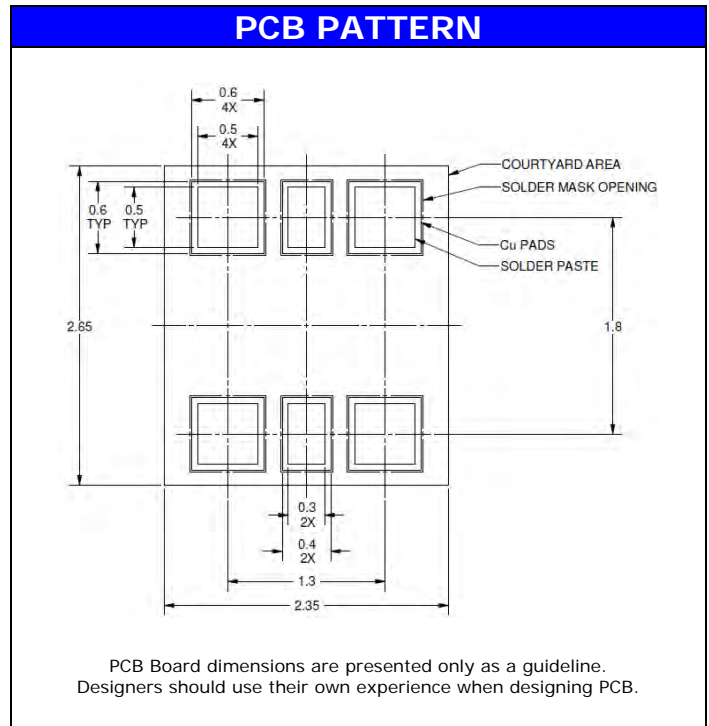
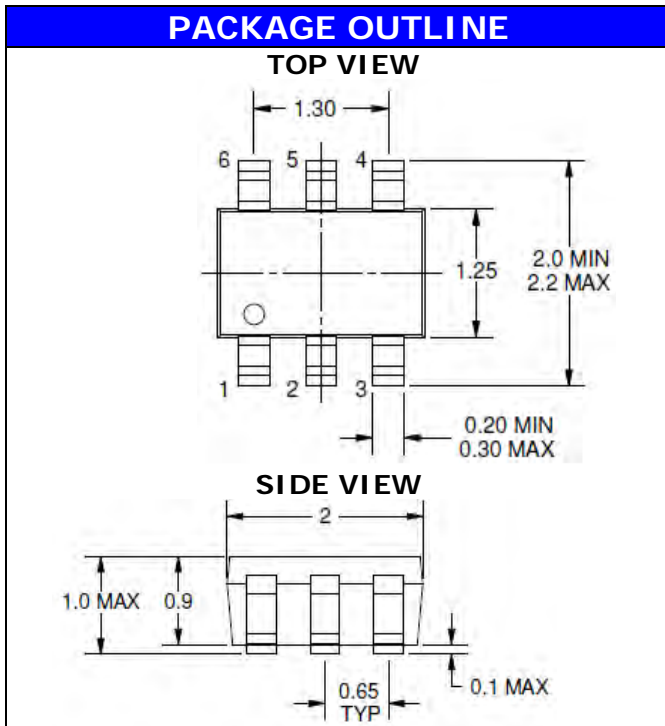
Part Number	Pins	Schematic	Connections	QTY Reel	Reel Dia	Grade	Top Mark
SOT363E7A-T-DC16D	6L	DC16	1 to 6 2 to 5 3 to 4	3000	7-inch	Halogen Free	D16
SOT363E7A-T-DC17D	6L	DC17	1 to 2 3 to 4 5 to 6	3000	7-inch	Halogen Free	D17
SOT363E7A-T-DC31D	6L	DC31	1 to 3	3000	7-inch	Halogen Free	D31
SOT363E7A-T-DC2635D	6L	DC2635	2 to 6 3 to 5	3000	7-inch	Halogen Free	D26

Part Number System						
<u>SOT363</u>	<u>E7A</u>	- <u>T</u>	-	<u>DC16</u>	-	<u>OPTION</u>
Series	Packaging	Plating		<u>Code</u> <u>Connections</u>	<u>Code</u>	<u>Description</u>
6L-TERMINAL PACKAGE	E7A REEL 3000pcs	T= Pb Free RoHS Matte Tin		DC16 1-6, 2~5, 3~4 DC17 1~2, 3~4, 5~6 DC31 1~3	None D	STANDARD DUMMY DIE
<u>Reference</u> SC70-6L SC88A-6	E4A REEL 500pcs E = Partial Reel			DC2635 2~6, 3~5 ISO = No Connection		

INFO Note 1: Resistance: Near Zero Ohm Jumper < 50mΩ per connection
 Note 2: Temperature Junction T_j +150°C Peak Reflow +260°C (10 Seconds) Storage -65°C ~ +150°C
 Note 3: Working Voltage 100V Current Rating 150mA Power 200mW @25°C
 Note 4: MSL (Moisture Sensitivity Level) per JEDEC Standard J-STD-020-E (as amended)
 Note 5: Application: PCB Jumper. Mount and solder using same guidelines as normal component.



SCHEMATIC - PIN SHORTED CONNECTIONS (TOP VIEW)			
DC16	DC17	DC31	DC2635
			CUSTOM PIN-OUT AVAILABLE





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 Tel 1-800-776-9888
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VSSOP8 , TSSOP8, SO8 Jumper 8L Zero Ohm 0Ω



Part Number	Pitch & Body	Pin	Schematic Connection	QTY Reel	Reel Dia	Grade	Top Mark
SO8E13A-T-DC28D	1.27mm 3.9x4.88 mm	8L	1 to 8 2 to 7 3 to 6 4 to 5	2500	13-inch	Halogen Free	DC28
VSSOP8E7A-T-DC28D	0.5mm 2.3x2.0 mm			3000	7-inch		
TSSOP8E7A-T-DC28D	0.65mm 4.4x3.0 mm			3000	13-inch		

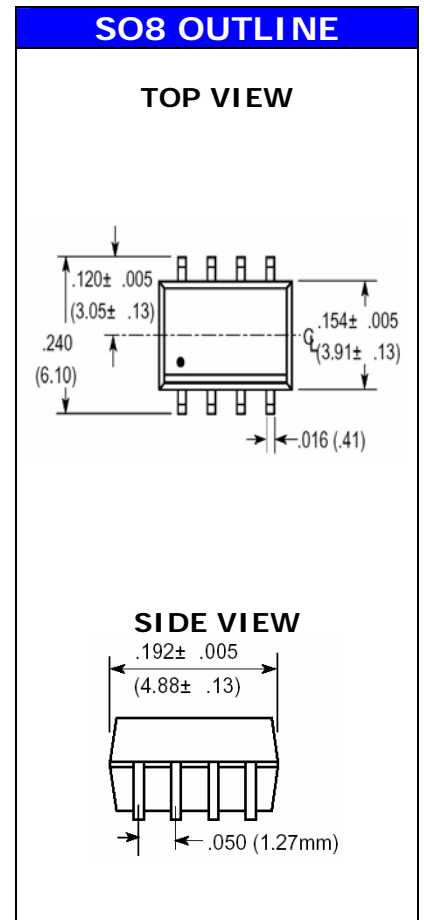
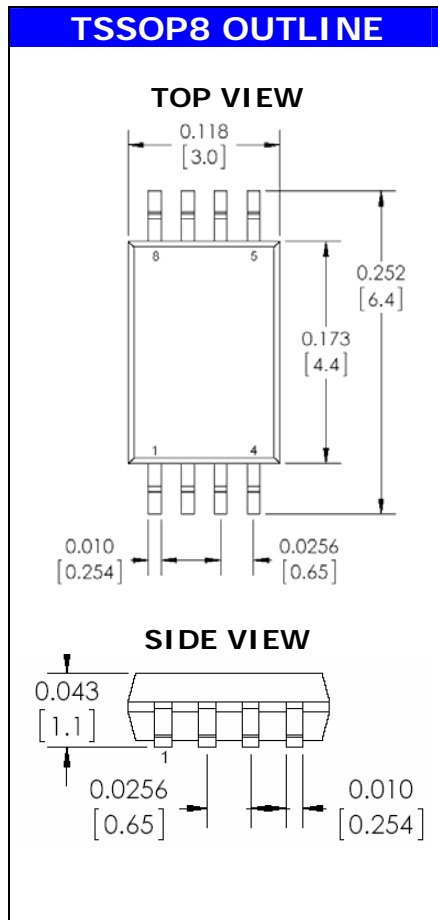
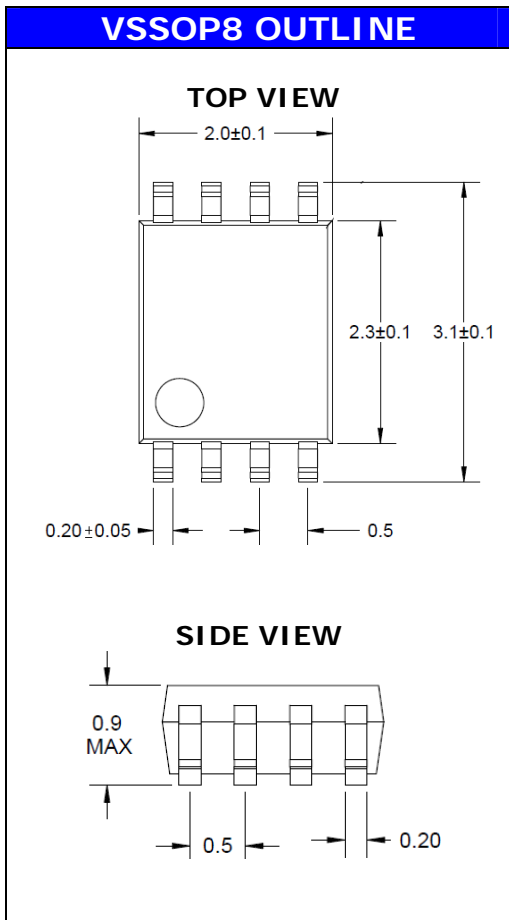
Part Number System						
<u>VSSOP8</u>	<u>E7A</u>	- <u>T</u>	- <u>DC28</u>	-	<u>OPTION</u>	
Series	Packaging	Plating	Code	Connections	Code	Description
8L-TERMINAL PACKAGE	E13A = 13-inch	T= Pb Free RoHS Matte Tin	DC28	1-8, 2-7, 3-6 4-5	None	STANDARD
<u>SERIES</u> VSSOP8 TSSOP8 SO8 SOP8	E7A = 7-inch		DE	1-2, 3-4, 5-6, 7-8	D	DUMMY DIE
	E = Partial Reel		ISO = No Connection			
	M = Tube		Other	Custom		

INFO Note 1: Resistance: Near Zero Ohm Jumper < 50mΩ per connection
 Note 2: Temperature Junction T_j +150°C Peak Reflow +260°C (10 Seconds) Storage -65°C ~ +150°C
 Note 3: Working Voltage 100V Current Rating 150mA Power 200mW @25°C
 Note 4: MSL (Moisture Sensitivity Level) per JEDEC Standard J-STD-020-E (as amended)
 Note 5: Application: PCB Jumper. Mount and solder using same guidelines as normal component.

VSSOP8 , TSSOP8, SO8 Jumper 8L Zero Ohm 0Ω



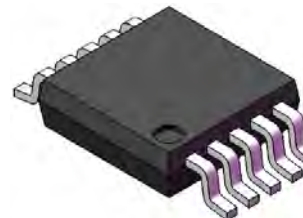
SCHEMATIC - PIN SHORTED CONNECTIONS (TOP VIEW)			
			<p>CUSTOM PIN-OUT AVAILABLE</p>
<p>DC28</p>		<p>CUSTOM - ASIC</p>	





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VSSOP10 & MSOP10 Jumper 10L Zero Ohm 0Ω



Part Number	Pitch & Body	Pin	Schematic Connection	QTY Reel	Reel Dia	Grade	Top Mark
VSSOP10E7A-T-DC29	0.5mm 3.0x3.0 mm	10L	1 to 10 2 to 9 3 to 8 4 to 7 5 to 6	3000	7-inch	Halogen Free	DC29
MSOP10E7A-T-DC29D							

Part Number System						
<u>VSSOP10</u>	<u>E7A</u>	- <u>T</u>	- <u>DC29</u>	-	<u>OPTION</u>	
Series	Packaging	Plating	Code	Connections	Code	Description
10L-TERMINAL PACKAGE	E7A =7-inch	T= Pb Free RoHS Matte Tin	DC29	1-10, 2~9, 3~8 4~7, 5~6	None	STANDARD
<u>SERIES</u> VSSOP10 MSOP10	E = Partial Reel M = Tube		Other	Custom	D	DUMMY DIE
ISO = No Connection						

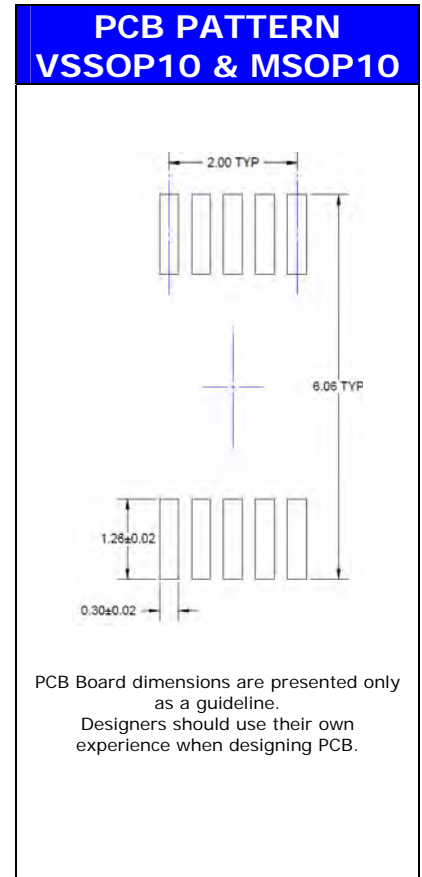
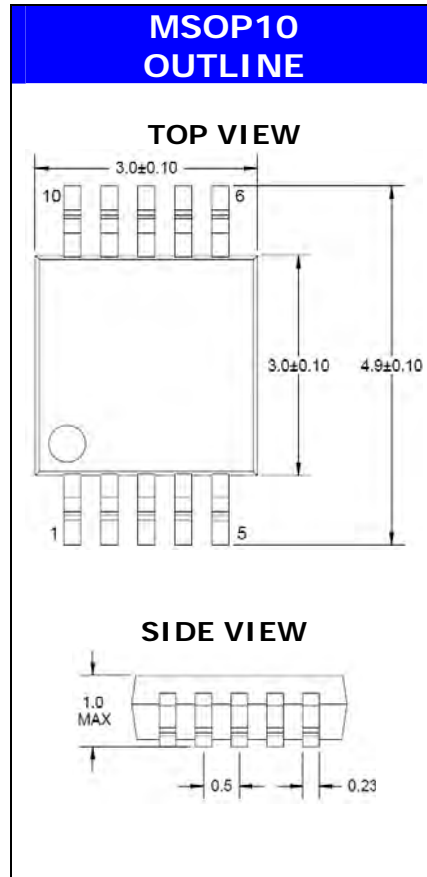
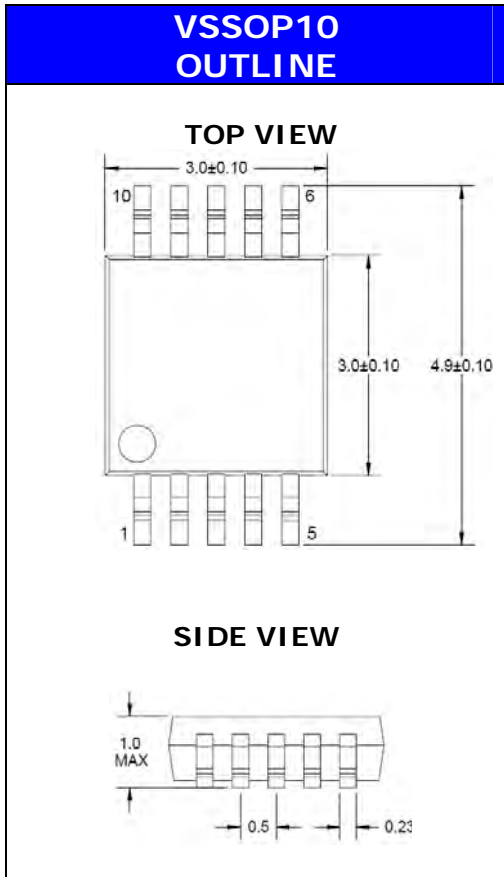
INFO

- Note 1: Resistance: Near Zero Ohm Jumper < 50mΩ per connection
- Note 2: Temperature Junction T_j +150°C Peak Reflow +260°C (10 Seconds) Storage -65°C ~ +150°C
- Note 3: Working Voltage 100V Current Rating 150mA Power 200mW @25°C
- Note 4: MSL (Moisture Sensitivity Level) per JEDEC Standard J-STD-020-E (as amended)
- Note 5: Application: PCB Jumper. Mount and solder using same guidelines as normal component.

**VSSOP10 & MSOP10
Jumper 10L
Zero Ohm 0Ω**



SCHEMATIC - PIN SHORTED CONNECTIONS (TOP VIEW)			
<p>10 9 8 7 6 1 2 3 4 5</p>		<p>10 9 8 7 6 1 2 3 4 5</p> <p style="text-align: center;">CUSTOM</p>	<p>CUSTOM PIN-OUT AVAILABLE</p>
DC29		CUSTOM - ASIC	





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SO14, TSSOP14 Series Jumper 14L Zero Ohm 0Ω



Part Number	Pins	Schematic	Connect	QTY	Pack	Grade	Top Mark
SO14E13A-T-DC1414	14L	DC1414	1 to 14	2500	REEL	Halogen Free	DC1414
TSSOP14E13A-T-DC1414			2 to 13				
			3 to 12				
			4 to 11				
			5 to 10	3000	REEL		
			6 to 9				
			7 to 8				

Ask TopLine for other zero ohm connections available.

SCHEMATIC - PIN SHORTED CONNECTIONS (TOP VIEW)

DC1414

**CUSTOM
PIN-OUT
AVAILABLE**

Part Number System						
<u>TSSOP14</u>	<u>E13A</u>	- <u>T</u>	- <u>DC1414</u>	- <u>OPTION</u>		
Series	Packaging	Plating	Code	Connections	Code	Description
14L-TERMINAL PACKAGE	E13A = 13-inch E7A = 7-inch	T= Pb Free RoHS Matte Tin	DC1414	1-14, 2~13, 3~12 4~11 5~10, 6~9 7~8	None	STANDARD
<u>SERIES</u> SO14 SOP14 TSSOP14	E = Partial Reel M = Tube		ISO = No Connection		D	DUMMY DIE

- INFO
- Note 1: Resistance: Near Zero Ohm Jumper < 50mΩ per connection
 - Note 2: Temperature Continuous Operating +150°C. Reflow +260°C (10 Seconds) Storage -65°C ~ +150°C
 - Note 3: Working Voltage 250V Current Rating: NA Power NA
 - Note 4: MSL (Moisture Sensitivity Level) per JEDEC Standard J-STD-020-E (as amended)
 - Note 5: Application: Covers empty pads on PCB. Solders to PCB. Looks same as original device.



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SO16, TSSOP16 Series Jumper 16L Zero Ohm 0Ω



Part Number	Pins	Schematic	Connect	QTY	Pack	Grade	Top Mark
SO16E13A-T-DC1616	16L	DC1616	1 to 16 2 to 15 3 to 14 4 to 13 5 to 12 6 to 11 7 to 10 8 to 9	2500	REEL	Halogen Free	DC1616
TSSOP16E13A-T-DC1616			3000	REEL			

Ask TopLine for other zero ohm connections available.

SCHEMATIC - PIN SHORTED CONNECTIONS (TOP VIEW)		
<p>DC1616</p>		<p>CUSTOM PIN-OUT AVAILABLE</p>

Part Number System						
<u>TSSOP16</u>	<u>E13A</u>	<u>- T</u>	<u>- DC1616</u>	<u>OPTION</u>		
Series	Packaging	Plating	Code	Connections	Code	Description
16L-TERMINAL PACKAGE	E13A = 13-inch E7A = 7-inch	T= Pb Free RoHS Matte Tin	DC1616	1-16, 2~15, 3~14 4~13 5~12, 6~11 7~10, 8~9	None	STANDARD
<u>SERIES</u> SO16 TSSOP16 SOL16 SOP16	E = Partial Reel M = Tube		ISO = No Connection		D	DUMMY DIE

- INFO**
- Note 1: Resistance: Near Zero Ohm Jumper < 50mΩ per connection
 - Note 2: Temperature Continuous Operating +150°C. Reflow +260°C (10 Seconds) Storage -65°C ~ +150°C
 - Note 3: Working Voltage 250V Current Rating: NA Power NA
 - Note 4: MSL (Moisture Sensitivity Level) per JEDEC Standard J-STD-020-E (as amended)
 - Note 5: Application: Covers empty pads on PCB. Solders to PCB. Looks same as original device.

DPAK (TO252) Series Jumper 3~7L Zero Ohm 0Ω



Part Number	Pin	Schematic Connection	QTY Reel	Reel Dia	Grade	Top Mark
DPAK-E13A-T-DC13	2L Center Cut	1 ~ 3	2500	13-inch	Halogen Free	DC13
DPAK-E13A-T-DC12	2L Center Cut	1~2	3000	13-inch		DC12
DPAK-E13A-T-DC123	2L Center Cut	1~2~3	3000	13-inch		DC123
DPAK3-E13A-T-DC123	3L Full	1~2~3	2500	13-inch		DC123
DPAK5-E13A-T-DC1245	5L	1~2 4~5	3000	13-inch		DC1245
DPAK7-E13A-T-DC##	7L	ASIC	3000	13-inch		DC##

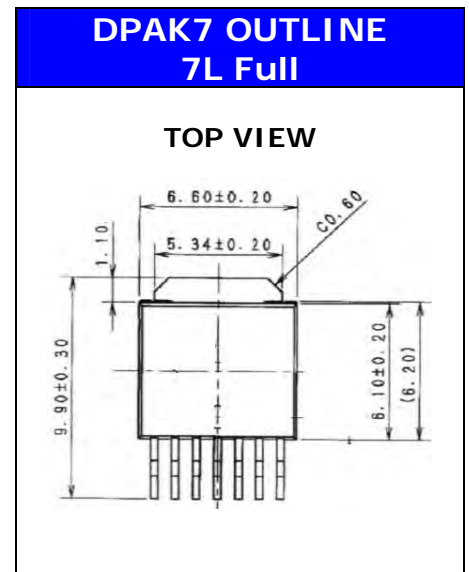
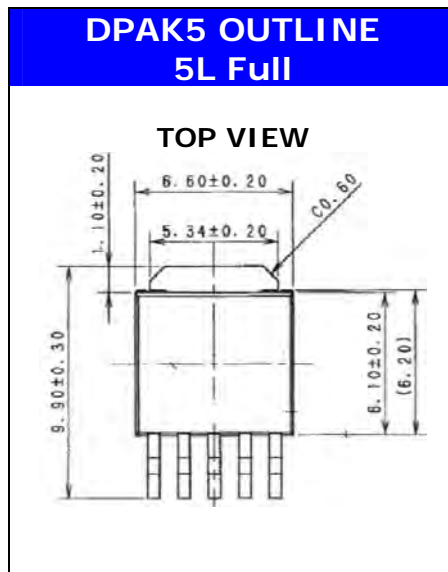
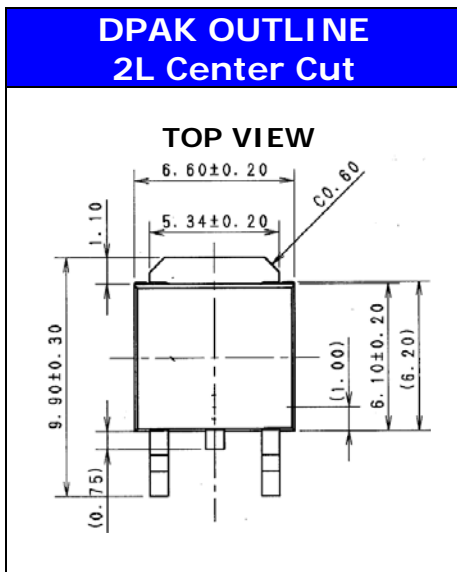
Part Number System								
<u>DPAK</u>	<u>E13A</u>	-	<u>T</u>	-	<u>DC123</u>	-	<u>OPTION</u>	
Series	Packaging		Plating		Code	Connections	Code	Description
DPAK = 2L Center Cut Standard	E13A = 13-inch		T= Pb Free RoHS Matte Tin		DC12	1-2	None	STANDARD
	E7A = 7-inch				DC13	1~3	D	DUMMY DIE
DPAK3 = 3L Full Leads					DC123	1~2~3		
DPAK5 = 5L Center Cut	E = Partial Reel				DC1245	1~2, 4~5		
DPAK5F = 5L Full	B = Bulk				DC23567	2~3, 5~6~7		
DPAK7 = 7L Full	M = Tube				ISO = No Connection			
					Other	Custom		

INFO Note 1: Resistance: Near Zero Ohm Jumper < 50mΩ per connection
 Note 2: Temperature Junction T_j +150°C Peak Reflow +260°C (10 Seconds) Storage -65°C ~ +150°C
 Note 3: Working Voltage 100V Current Rating 500mA Power 50W @25°C
 Note 4: MSL (Moisture Sensitivity Level) per JEDEC Standard J-STD-020-E (as amended)
 Note 5: Application: PCB Jumper. Mount and solder using same guidelines as normal component.

**DPAK (TO252) Series
Jumper 3~7L
Zero Ohm 0Ω**



SCHEMATIC - PIN SHORTED CONNECTIONS (TOP VIEW)				
				<p>CUSTOM PIN-OUT AVAILABLE</p>
DC12	DC13	DC123	DC1245	





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D2PAK (TO263) Series PCB Jumper 3~7L Zero Ohm 0Ω



Part Number	Pin	Schematic Connection	QTY Reel	Reel Dia	Grade	Top Mark
D2PAK-E13A-T-DC13	2L Center Cut	1~2~3	800	13-inch	Halogen Free	DC13
D2PAK5-E13A-T-DC1245	5L Center Cut	1~2 4~5	800	13-inch	Halogen Free	DC1245
D2PAK5-E13A-T-DC1245	5L Full	1~2 4~5	800	13-inch	Halogen Free	DC1245
D2PAK7-E13A-T-DC##	7L Center Cut	ASIC	800	13-inch	Halogen Free	DC##

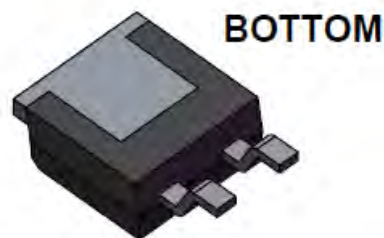
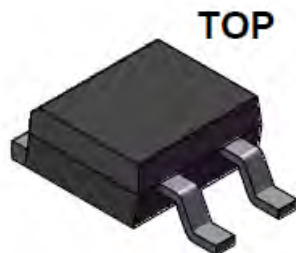
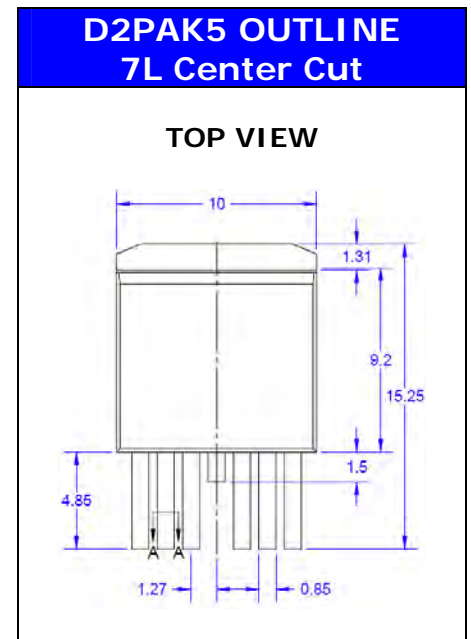
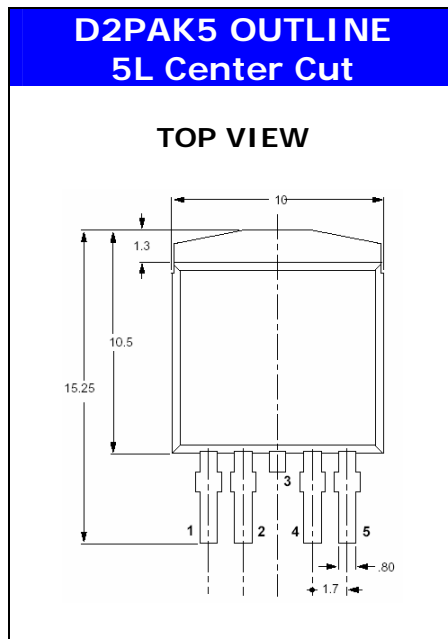
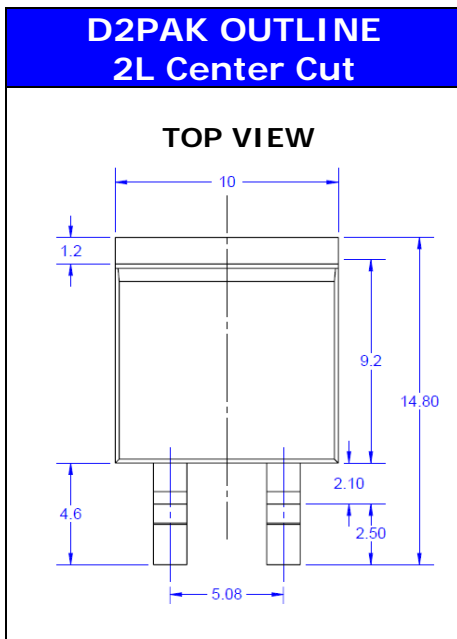
Part Number System							
<u>D2PAK</u>	<u>E13A</u>	-	<u>T</u>	-	<u>DC123</u>	-	<u>OPTION</u>
Series	Packaging		Plating		Code Connections		Code Description
D2PAK = 2L Center Cut Standard	E13A = 13-inch E7A = 7-inch		T= Pb Free RoHS Matte Tin		DC123 1-2~3 DC1245 1~2, 4~5 Other Custom		None STANDARD D DUMMY DIE
D2PAK5 = 5L Center Cut	E = Partial Reel M = Tube				ISO = No Connection		
D2PAK5F = 5L Full							
D2PAK7 = 7L Center Cut							

INFO	<p>Note 1: Resistance: Near Zero Ohm Jumper < 50mΩ per connection</p> <p>Note 2: Temperature Junction T_j +150°C Peak Reflow +260°C (10 Seconds) Storage -65°C ~ +150°C</p> <p>Note 3: Working Voltage 100V Current Rating 500mA Power 50W @25°C</p> <p>Note 4: MSL (Moisture Sensitivity Level) per JEDEC Standard J-STD-020-E (as amended)</p> <p>Note 5: Application: PCB Jumper. Mount and solder using same guidelines as normal component.</p>
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**D2PAK (TO263) Series
PCB Jumper 3~7L
Zero Ohm 0Ω**



SCHEMATIC - PIN SHORTED CONNECTIONS (TOP VIEW)				
				<p>CUSTOM PIN-OUT AVAILABLE</p>
DC13	DC123	DC1245	ASIC	



DIP Series Jumper 8~16L Zero Ohm 0Ω



Part Number	Pins	Schematic	Connection	QTY	Pack	Quick View	Top Mark
DIP8M3-T-DC28	8L	DC28	1 to 8 2 to 7 3 to 6 4 to 5	50	TUBE		DC28
DIP14M3-T-DC1414	14L	DC1414	1 to 14 2 to 13 3 to 12 4 to 11 5 to 10 6 to 9 7 to 8	25	TUBE		DC1414
DIP16M3-T-DC1616	16L	DC1616	1 to 16 2 to 15 3 to 14 4 to 13 5 to 12 6 to 11 7 to 10 8 to 9	25	TUBE		DC1616

Ask TopLine for other zero ohm connections available.

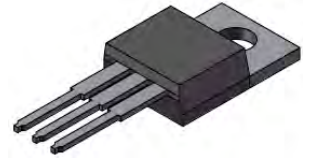
Part Number System				
<u>DIP8</u>	<u>M</u>	<u>3</u>	- <u>T</u>	- <u>DC28</u>
Series	Packaging	Pkg Width	Plating	Connections
DIP = Dual Inline Packages SDIP = Skinny Dual Inline Packages	M = Tube	3 = 300mil (7.5mm) 4 = 400mil (10 mm) 6 = 600mil (15mm) 7 = 750mil (17.8mm)	RoHS - Pb-Free T = Matte Tin F = Ni Pd Au	DC28 DC1414 DC1616 ISO = No Connection

Ask TopLine for other connections DIP devices available.

INFO

- Note 1: Resistance: Near Zero Ohm Jumper < 50mΩ per connection
- Note 2: Temperature Continuous Operating +150°C. Reflow +260°C (10 Seconds) Storage -65°C ~ +150°C
- Note 3: Working Voltage 250V Current Rating: NA Power NA
- Note 4: MSL (Moisture Sensitivity Level) per JEDEC Standard J-STD-020-E (as amended)
- Note 5: Application: Covers empty pads on PCB. Solders to PCB. Looks same as original device.

TO Series Jumper 3L Zero Ohm 0Ω



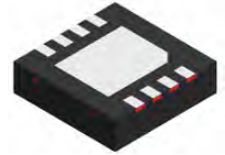
Part Number	Pins	Schematic	Connection	QTY	Pack	Quick View	Top Mark
TO126M-T-DC12 TO126M-T-DC13 TO126M-T-DC123	3L	DC12 DC13 DC123	1~2 1~3 1~2~3	50	TUBE		DC12 DC13 DC123
TO220M-T-DC12 TO220M-T-DC13 TO220M-T-DC123	3L	DC12 DC13 DC123	1~2 1~3 1~2~3	50	TUBE		DC12 DC13 DC123

Ask TopLine for other connections TO devices available.

Part Number System				
<u>TO220</u> Series	<u>M</u> Packaging	<u>I</u> Plating	<u>DC13</u> Connections	<u>OPTION</u> Description
TO = Plastic Transistor	M = Tube A = Tape in Box TR = Tape & Reel	RoHS - Pb-Free T = Matte Tin	DC12 = Pin 1~2 DC13 = Pin 1~3 DC123 = Pin 1~2~3 ISO = No Connection	BLANK=Standard

INFO Note 1: Resistance: Near Zero Ohm Jumper < 50mΩ per connection
 Note 2: Temperature Continuous Operating +150°C. Reflow +260°C (10 Seconds) Storage -65°C ~ +150°C
 Note 3: Working Voltage 100V Current Rating: NA Power NA
 Note 4: MSL (Moisture Sensitivity Level) per JEDEC Standard J-STD-020-E (as amended)
 Note 5: Application: Covers empty pads on PCB. Solders to PCB. Looks same as original device.

DFN Series Jumper 6~16L Zero Ohm 0Ω



Part Number	Pins	Body Size	Connection	QTY	Pack	Quick View	Top Mark
DFN6E.5-F-DC##	6L	2x2 mm	Ask	1000	REEL		DC
DFN8E.4-T-DC## DFN8E.5-T-DC## DFN8E.65-T-DC##	8L	2x2 mm 2x2 mm 3x3 mm	Ask	1000	REEL		DC
DFN10E.5-T-DC## DFN10E.5-T-DC##-A	10L	3x3 mm 3x2 mm	Ask	1000	REEL		DC
DFN12E.4-T-DC##-A DFN12E.5-T-DC##-B DFN12E.5-T-DC##-C DFN12E.5-T-DC##-D	12L	2.5x1.35 mm 3.0x2.0 mm 3.5x3.0 mm 4.0x3.0 mm	Ask	1000	REEL		DC
DFN14E.4-T-DC##-A	14L	3.0x2.0 mm	Ask	1000	REEL		DC
DFN16E.4-T-DC##-A DFN16E.4-T-DC##-B DFN16E.5-T-DC##-C	16L	3.3x1.35 mm 4.0x1.6 mm 4.0x1.6 mm	Ask	1000	REEL		DC

Ask TopLine for other DFN devices.

Part Number System					
<u>DFN10</u>	<u>E</u>	<u>.5</u>	<u>- I</u>	<u>- DC ##</u>	<u>- A</u>
Series	Packaging	Pitch	Plating	Connections	Option
DFN = Dual Side	E = Partial Reel E7A = 7-inch M = Tube T = Tray	.4 = 0.4 mm .5 = 0.5 mm .65 = 0.65 mm .8 = 0.80 mm 1.27 = 1.27mm	RoHS - Pb-Free T = Matte Tin F = Ni Pd Au	DC## = Zero Ohm Circuit ISO = No Connection	Size Option

- INFO

Note 1: Resistance: Near Zero Ohm Jumper < 50m Ω per connection

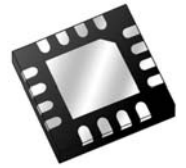
Note 2: Temperature Continuous Operating +150°C. Reflow +260°C (10 Seconds) Storage -65°C ~ +150°C

Note 3: Working Voltage 100V Current Rating: NA Power NA

Note 4: MSL-1 (Moisture Sensitivity Level) per JEDEC Standard J-STD-020-E (as amended)

Note 5: Application: Covers empty pads on PCB. Solders to PCB. Looks same as original device.

QFN Series Jumper 8 ~ 100L Zero Ohm 0Ω



Part Number	Pins	Body Size	Connection	QTY	Pack	Quick View	Top Mark
QFN8E.65-F-DC##	8L	3X3 mm	Ask	1000	TRAY REEL		DC##
QFN12E.4-T-DC## QFN12E.5-T-DC## QFN12E.65-F-DC##	12L	2x2 mm 3x3 mm 4x4 mm	Ask	1000	TRAY REEL		DC##
QFN16E.5-T-DC## QFN16E.65-T-DC## QFN16E.8-F-DC##	16L	3x3 mm 4x4 mm 5x5 mm	Ask	1000	TRAY REEL		DC##
QFN20E.4-F-DC## QFN20E.5-T-DC## QFN20E.65-T-DC##	20L	3x3 mm 4x4 mm 5x5 mm	Ask	1000	TRAY REEL		DC##
QFN24E.5-T-DC## QFN24E.65-T-DC##	24L	4x4 mm 5x5 mm	Ask	1000	TRAY REEL		DC##
QFN28E.5-T-DC## QFN28E.65-T-DC##	28L	5x5 mm 6x6 mm	Ask	1000	TRAY REEL		DC##
QFN32E.5-T-DC## QFN32E.65-T-DC##	32L	5x5 mm 7x7 mm	Ask	1000	TRAY REEL		DC##
QFN40E.5-T-DC##	40L	6x6 mm	Ask	1000	TRAY REEL		DC##
QFN44E.5-T-DC##	44L	7x7 mm	Ask	1000	TRAY REEL		DC##
QFN48E.5-T-DC##	48L	7x7 mm	Ask	1000	REEL		DC##

Ask TopLine for other QFN devices available up to 100L.

Part Number System

<u>QFN16</u>	<u>E</u>	<u>.5</u>	<u>- I</u>	<u>- DC##</u>
Series	Packaging	Pitch	Plating	Connections
QFN = QUAD FLAT NO LEAD	E = Partial Reel E7A = 7-inch M = Tube T = Tray	.4 = 0.4 mm .5 = 0.5 mm .65 = 0.65 mm .8 = 0.8 mm	RoHS - Pb-Free T = Sn100 Tin F = Ni Pd Au	DC## = Zero Ohm Circuit ISO = No Connection

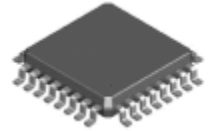
INFO

- Note 1: Resistance: Near Zero Ohm Jumper < 50mΩ per connection
- Note 2: Temperature Continuous Operating +150°C. Reflow +260°C (10 Seconds) Storage -65°C ~ +150°C
- Note 3: Working Voltage 100V Current Rating: NA Power NA
- Note 4: MSL-1 (Moisture Sensitivity Level) per JEDEC Standard J-STD-020-E (as amended)
- Note 5: Application: Covers empty pads on PCB. Solders to PCB. Looks same as original device.



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TQFP/LQFP Series Jumper 32~208L Zero Ohm 0Ω



* Part Number	Pins	Body Size Pitch	Connect	QTY	Pack	Quick View	Top Mark
TQFP32T19.7-T-DC## TQFP32E13A19.7-T-DC##	32L	5x5mm P = 0.5mm	Ask	360 1000	TRAY REEL		DC##
TQFP44T30-T-DC## TQFP44E13A30-T-DC##	44L	10x10mm P = 0.8mm	Ask	160 1000	TRAY REEL		DC##
TQFP48T19.7-T-DC## TQFP48E13A19.7-T-DC##	48L	7x7mm P = 0.5mm	Ask	250 1000	TRAY REEL		DC##
TQFP52T25-T-DC## TQFP52E13A25-T-DC##	48L	10x10mm P = 0.65mm	Ask	160 1000	TRAY REEL		DC##
TQFP64T15.7-T-DC## TQFP64E13A15.7-T-DC##	64L	7x7mm P = 0.4mm	Ask	250 1000	TRAY REEL		DC##
TQFP64T19.7-T-DC## TQFP64E13A19.7-T-DC##	64L	10x10mm P = 0.5mm	Ask	160 1000	TRAY REEL		DC##
TQFP80T15.7-T-DC## TQFP80E13A15.7-T-DC##	80L	10x10mm P = 0.4mm	Ask	160 1000	TRAY REEL		DC##
TQFP80T19.7-T-DC## TQFP80E13A19.7-T-DC##	80L	12x12mm P = 0.5mm	Ask	119 1000	TRAY REEL		DC##
TQFP100T19.7-T-DC## TQFP100E13A19.7-T-DC##	100L	14x14mm P = 0.5mm	Ask	90 1000	TRAY REEL		DC##
TQFP120T15.7-T-DC## TQFP120E13A15.7-T-DC##	120L	14x14mm P = 0.4mm	Ask	90 1000	TRAY REEL		DC##
LQFP128T15.7-T-DC## LQFP128E13A15.7-T-DC##	128L	14x14mm P = 0.4mm	Ask	90 1000	TRAY REEL		DC##
LQFP144T15.7-T-DC##	144L	20x20mm P = 0.5mm	Ask	60	TRAY		DC##
LQFP208T19.7-T-DC##	208L	28x28mm P = 0.5mm	Ask	36	TRAY		DC##

Ask TopLine for other TQFP/LQFP devices available.

Part Number System

<u>TQFP32</u>	<u>E13A</u>	<u>19.7</u>	<u>I</u>	- <u>DC##</u>	- <u>OPTION</u>
Series	Packaging	Pitch	Plating	Connections	Description
Package Thickness TQFP = 1.0mm LQFP = 1.4mm	E13A = 13-inch E = Partial Reel T = Tray	15.7 = 0.4mm 19.7 = 0.5mm 25 = 0.65mm 30 = 0.8mm	RoHS - Pb-Free T = Matte Tin	DC = Zero Ohm Circuit ISO = No Connection	BLANK=Standard

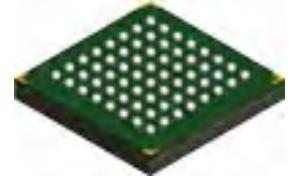
INFO



- Note 1: Resistance: Near Zero Ohm Jumper < 50mΩ per connection
- Note 2: Temperature Continuous Operating +150°C. Reflow +260°C (10 Seconds) Storage -65°C ~ +150°C
- Note 3: Working Voltage 100V Current Rating: NA Power NA
- Note 4: MSL (Moisture Sensitivity Level) per JEDEC Standard J-STD-020-E (as amended)
- Note 5: Application: Covers empty pads on PCB. Solders to PCB. Looks same as original device.



Contact: info@TopLine.tv
Tel 1-800-776-9888
www.PCBjumper.com

BGA/LGA Series Jumper 48~2500L Zero Ohm 0Ω



Part Number	Alloy	Schematic	Connect	QTY	Pack	Quick View	Top Mark
BGA	SAC305 Ball	Ask	Ask	Ask	Tray or Reel		DC##
LGA	Cu-Ni-Au Pad	Ask	Ask	Ask	Tray or Reel		DC##

Ask TopLine for any type of BGA devices Isolated or Jumper.

Part Number System					
<u>BGA</u>	<u>48 ~ 2500</u>	<u>I</u>	- <u>1.0</u>	<u>C</u>	- <u>DC##</u>
Series	Nbr I/O	Pack	Pitch	Ball Alloy	Connections
BGA= Ball Grid Array With Solder Ball	Ball or Pad Count	T=Tray E=Reel	.4 = 0.4mm .5 = 0.5mm .65 = 0.65mm .75 = 0.75mm .8 = 0.80mm 1.0 = 1.0mm 1.27 = 1.27mm	C = SAC305 Pb-Free RoHS Lead-Free LGA G = NiAu Pad	DC = Zero Ohm Circuit ISO = No Connection

- INFO**
- Note 1: Resistance: Near Zero Ohm Jumper < 50mΩ per connection
 - Note 2: Temperature Continuous Operating +150°C. Reflow +260°C (10 Seconds) Storage -65°C ~ +150°C
 - Note 3: Working Voltage 100V Current Rating: NA Power NA
 - Note 4: MSL (Moisture Sensitivity Level) per JEDEC Standard J-STD-020-E (as amended)
 - Note 5: Application: Covers empty pads on PCB. Solders to PCB. Looks same as original device.



Contact: info@TopLine.tv
Tel 1-800-776-9888
www.PCBspacer.com

SSL0603 Series Solderable PCB Spacers

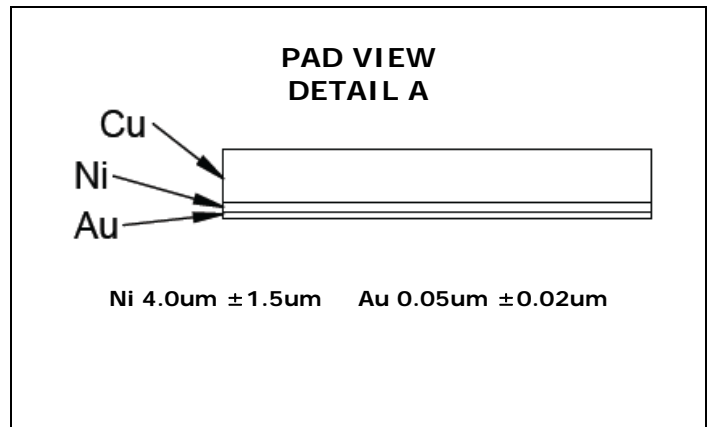
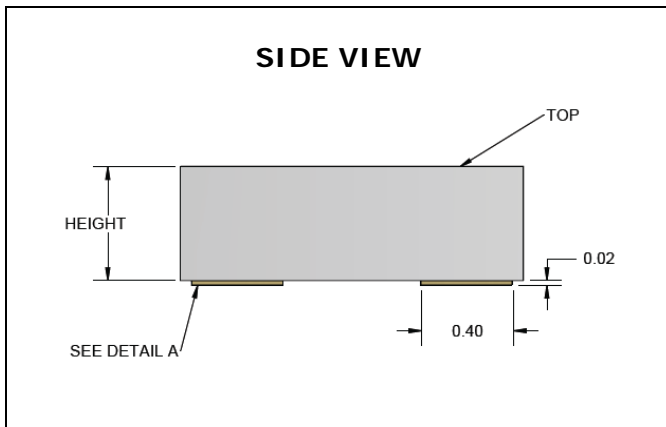
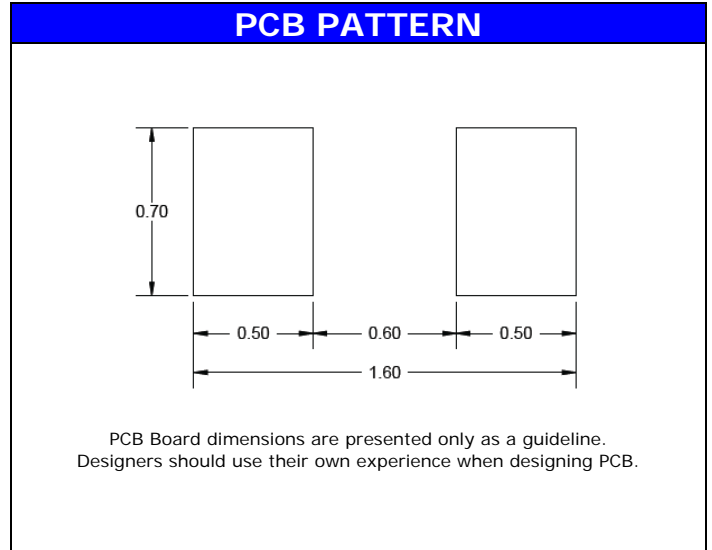
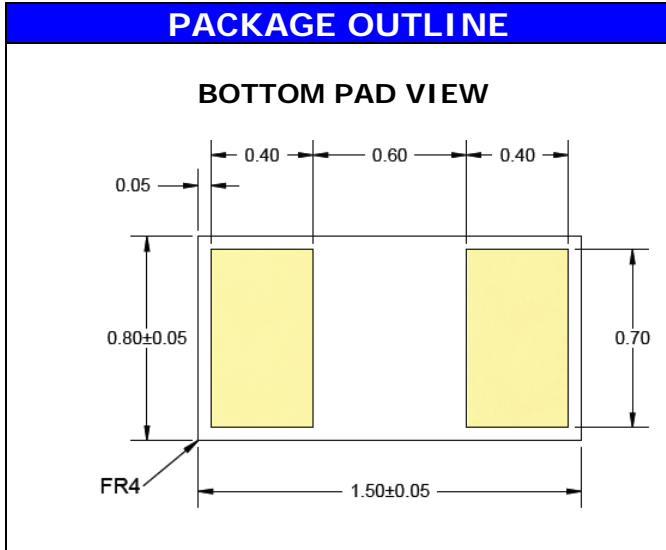
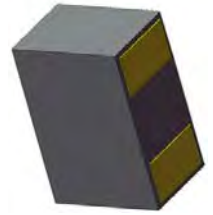


Part Number	Pins	Height mm ± 10%	Height Inch ± 10%	QTY Reel	Reel Dia	Grade	Top Mark
SSL060304E7A-G	2L	0.10mm	0.004-inch	3000	7-inch	Commercial	None
SSL060305E7A-G	2L	0.125mm	0.005-inch	3000	7-inch	Commercial	None
SSL060306E7A-G	2L	0.15mm	0.006-inch	3000	7-inch	Commercial	None
SSL060308E7A-G	2L	0.20mm	0.008-inch	3000	7-inch	Commercial	None
SSL060310E7A-G	2L	0.25mm	0.010-inch	3000	7-inch	Commercial	None
SSL060312E7A-G	2L	0.30mm	0.012-inch	3000	7-inch	Commercial	None
SSL060316E7A-G	2L	0.40mm	0.016-inch	3000	7-inch	Commercial	None
SSL060320E7A-G	2L	0.50mm	0.020-inch	3000	7-inch	Commercial	None
SSL060330E7A-G	2L	0.80mm	0.030-inch	3000	7-inch	Commercial	None
SSL060340E7A-G	2L	1.0mm	0.040-inch	3000	7-inch	Commercial	None

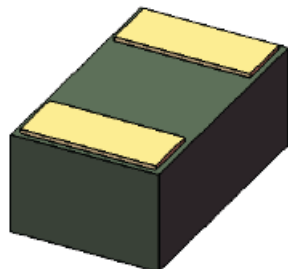
Part Number System					
SSL0603	20	- E7A	- G	- OPTION	
Series	Height ±10% (Code mils)	Reel Packaging	Pad Plating	Code	Description
2L-TERMINAL Solderable FR4 Spacer	<u>Code mm</u> 04 = 0.10mm 05 = 0.125mm 06 = 0.15mm 08 = 0.20mm 10 = 0.25mm 12 = 0.30mm 16 = 0.40mm 20 = 0.50mm 24 = 0.60mm 30 = 0.80mm 40 = 1.00mm	E7A = 7" (178mm) REEL 3000 pcs E = PARTIAL REEL	G = Ni-Au T = Sn100 RoHS Pb-Free Lead-Free	Blank =	Standard
0603 Footprint 1.5mm x 0.8mm	Other Height Available				

INFO

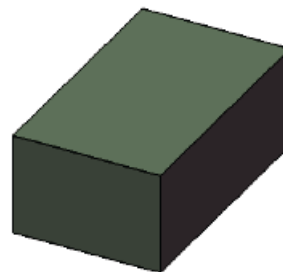
Note 1: Resistance: > 30 GΩ Non-conductive material with copper pad.
 Note 2: Temperature Operating +175°C Peak Reflow +260°C (10 Seconds) Storage -65°C ~ +175°C
 Note 3: Working Voltage 500V Current Rating N/A Power N/A
 Note 4: MSL (Moisture Sensitivity Level) per JEDEC Standard J-STD-020-E (as amended)
 Note 5: Mount onto PC Board using same solder paste as other components.
 Note 6: Application: Solderable PCB Spacer separates two PCBs apart with known spacing.



MODEL



BOTTOM



TOP



Contact: info@TopLine.tv
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SSL0805 Series Solderable PCB Spacers

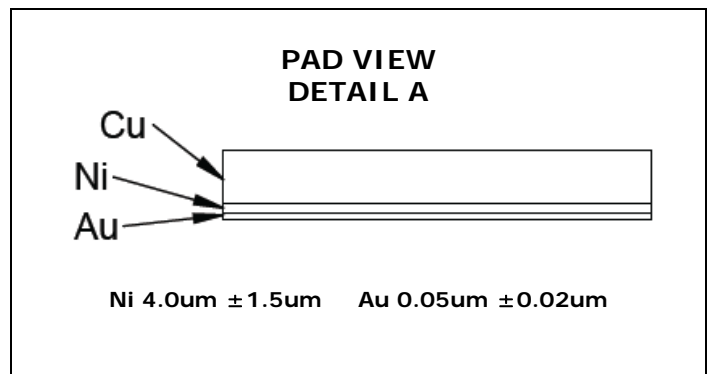
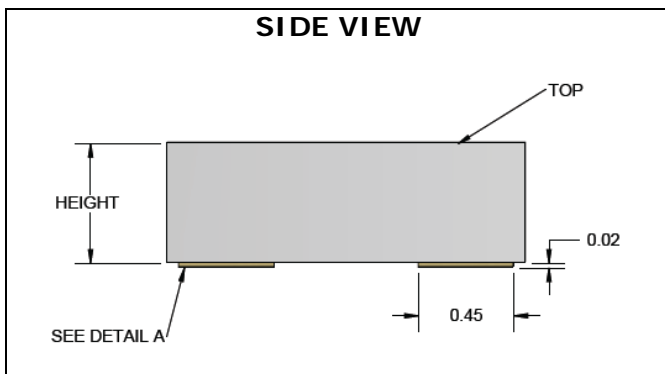
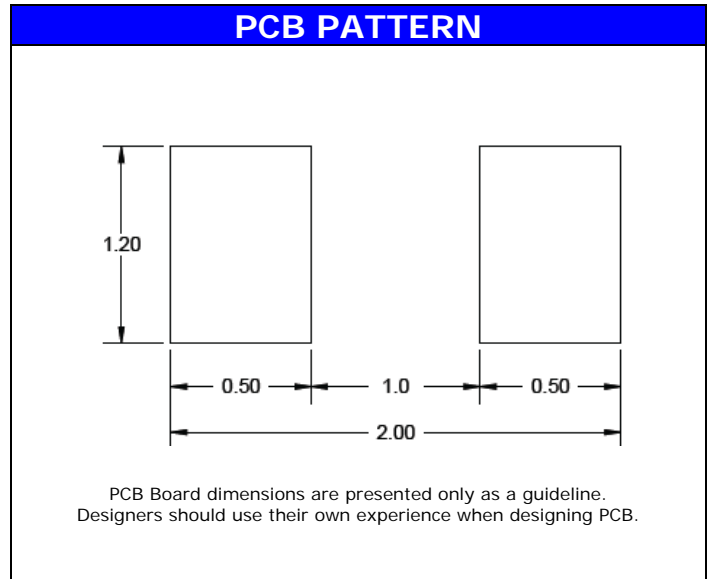
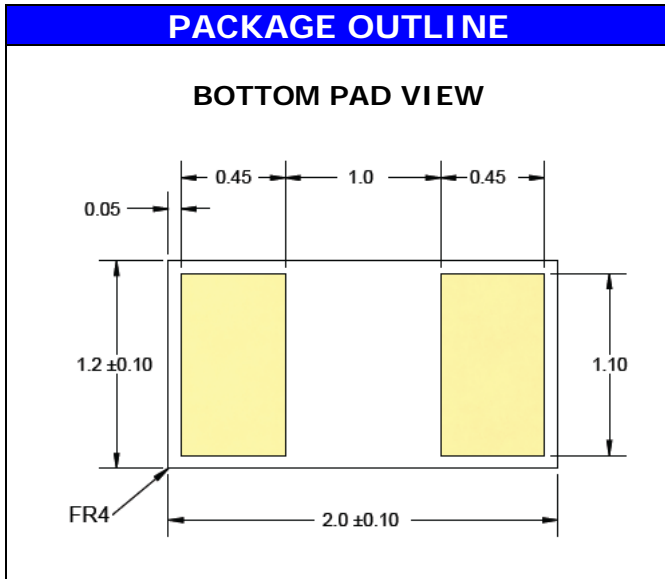
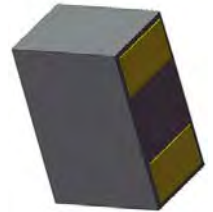


Part Number	Pins	Height mm ± 10%	Height Inch ± 10%	QTY Reel	Reel Dia	Grade	Top Mark
SSL080508E7A-G	2L	0.20mm	0.008-inch	3000	7-inch	Commercial	None
SSL080510E7A-G	2L	0.25mm	0.010-inch	3000	7-inch	Commercial	None
SSL080512E7A-G	2L	0.30mm	0.012-inch	3000	7-inch	Commercial	None
SSL080516E7A-G	2L	0.40mm	0.016-inch	3000	7-inch	Commercial	None
SSL80520E7A-G	2L	0.50mm	0.020-inch	3000	7-inch	Commercial	None
SSL80524E7A-G	2L	0.60mm	0.024-inch	3000	7-inch	Commercial	None
SSL080530E7A-G	2L	0.80mm	0.030-inch	3000	7-inch	Commercial	None
SSL080540E7A-G	2L	1.0mm	0.040-inch	3000	7-inch	Commercial	None
SSL080550E7A-G	2L	1.27mm	0.050-inch	3000	7-inch	Commercial	None
SSL080560E7A-G	2L	1.5mm	0.060-inch	3000	7-inch	Commercial	None

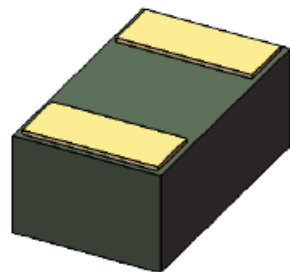
Part Number System							
<u>SSL0805</u>	<u>40</u>	-	<u>E7A</u>	-	<u>G</u>	-	<u>OPTION</u>
Series	Height ±10% (Code mils)		Reel	Pad Plating	Code		Description
2L-TERMINAL Solderable FR4 Spacer	<u>Code mm</u> 08 = 0.20mm 10 = 0.25mm 12 = 0.30mm 16 = 0.40mm 20 = 0.50mm 24 = 0.60mm 30 = 0.80mm 40 = 1.00mm 50 = 1.27mm 60 = 1.50mm		E7A = 7" (178mm) REEL 3000 pcs E = PARTIAL REEL	G = Ni-Au T = Sn100 RoHS Pb-Free Lead-Free	Blank =		Standard
0805 Footprint 2.0mm x 1.2mm	Other Height Available						

INFO

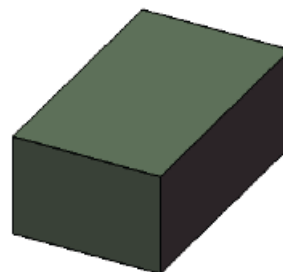
- Note 1: Resistance: > 30 GΩ Non-conductive material with copper pad.
- Note 2: Temperature Operating +175°C Peak Reflow +260°C (10 Seconds) Storage -65°C ~ +175°C
- Note 3: Working Voltage 500V Current Rating N/A Power N/A
- Note 4: MSL (Moisture Sensitivity Level) per JEDEC Standard J-STD-020-E (as amended)
- Note 5: Mount onto PC Board using same solder paste as other components.
- Note 6: Application: Solderable PCB Spacer separates two PCBs apart with known spacing.



MODEL

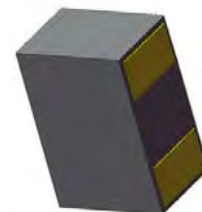


BOTTOM



TOP

SSL1206 Series Solderable PCB Spacers

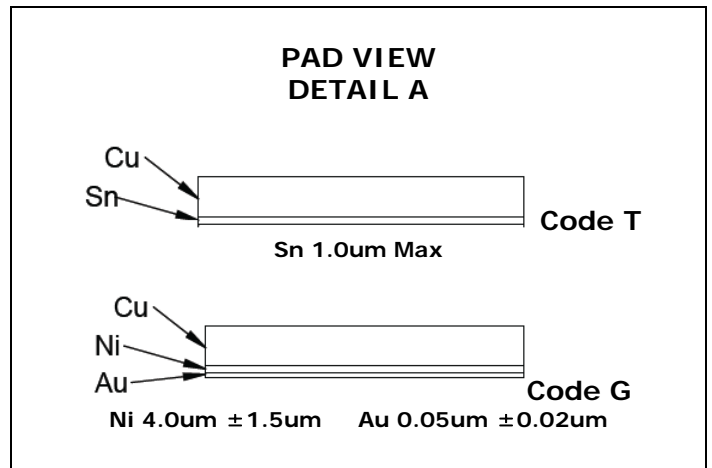
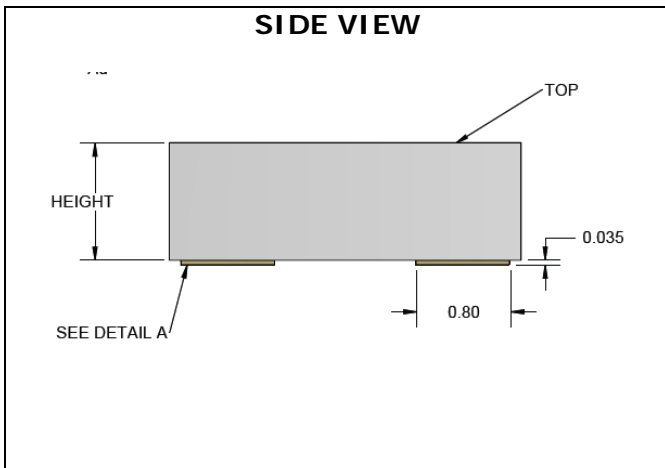
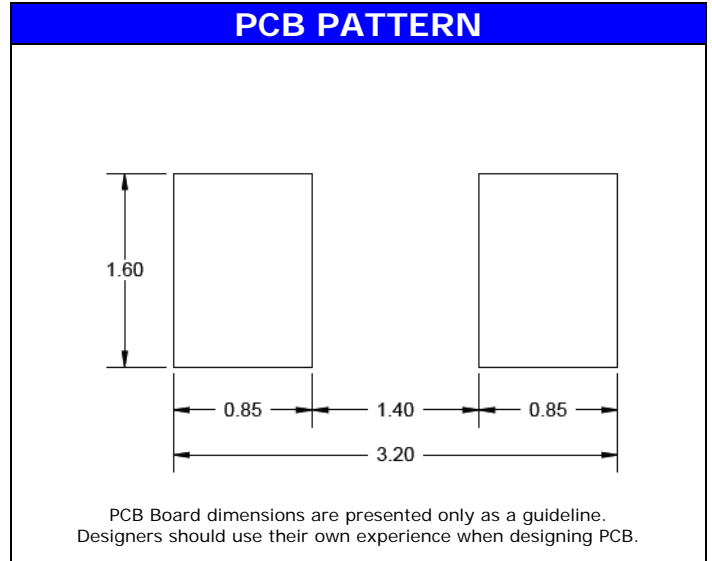
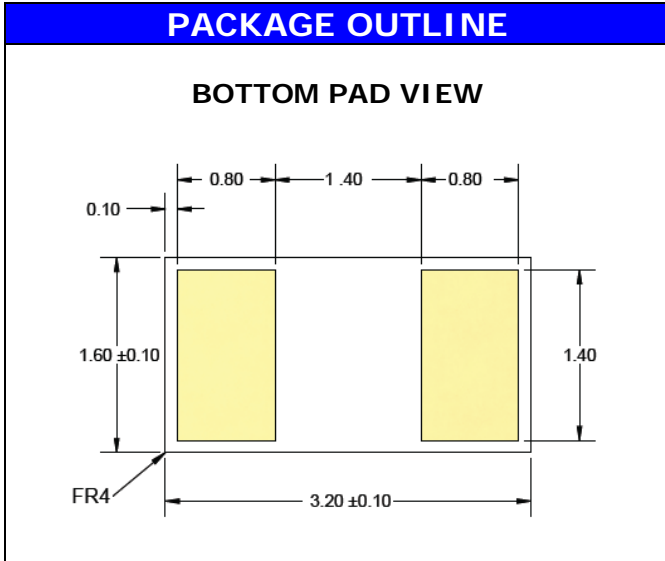


Part Number	Pins	Height mm ± 10%	Height Inch ± 10%	QTY Reel	Reel Dia	Grade	Top Mark
SSL120620E7A-T	2L	0.50mm	0.020-inch	1000	7-inch	Commercial	None
SSL120630E7A-T	2L	0.80mm	0.030-inch	1000	7-inch	Commercial	None
SSL120640E7A-T	2L	1.00mm	0.040-inch	1000	7-inch	Commercial	None
SSL120650E7A-T	2L	1.30mm	0.050-inch	1000	7-inch	Commercial	None
SSL120659E7A-T	2L	1.50mm	0.059-inch	1000	7-inch	Commercial	None
SSL120660E7A-T	2L	1.60mm	0.060-inch	1000	7-inch	Commercial	None
SSL120675E7A-T	2L	1.90mm	0.075-inch	1000	7-inch	Commercial	None
SSL120680E7A-T	2L	2.00mm	0.080-inch	1000	7-inch	Commercial	None
SSL120685E7A-T	2L	2.20mm	0.085-inch	1000	7-inch	Commercial	None
SSL120695E7A-T	2L	2.40mm	0.095-inch	1000	7-inch	Commercial	None
SSL1206120E13A-T	2L	3.20mm	0.120-inch	1000	13-inch	Commercial	None
SSL1206157E13A-T	2L	4.00mm	0.157-inch	1000	13-inch	Commercial	None

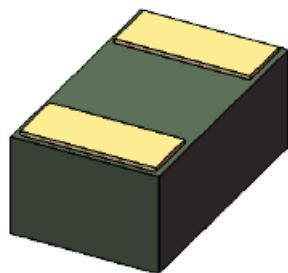
Part Number System			
<u>SSL1206</u>	<u>85</u>	<u>E7A</u>	<u>- I</u>
Series	Height ± 10% (Code mils)	Reel	Pad Plating
2L-TERMINAL Solderable FR4 Spacer	<u>Code</u> <u>mm</u> 20 = 0.50mm 24 = 0.60mm 30 = 0.80mm 40 = 1.00mm 50 = 1.27mm 59 = 1.50mm 60 = 1.60mm 75 = 1.90mm 80 = 2.00mm 85 = 2.20mm 95 = 2.40mm 120 = 3.2mm 157 = 4.0mm	E7A = 7" (178mm) REEL 1000 pcs E13A = 13" (330mm) REEL 1K~4K pcs E = PARTIAL REEL	T = Sn100 G = Ni Au RoHS Pb-Free Lead-Free
1206 Footprint 3.2mm x 1.6mm	Other Height Available		

INFO

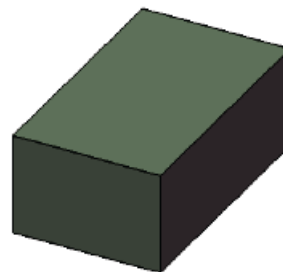
- Note 1: Resistance: > 30 GΩ Non-conductive material with copper pad.
- Note 2: Temperature Operating +175°C Peak Reflow +260°C (10 Seconds) Storage -65°C ~ +175°C
- Note 3: Working Voltage 500V Current Rating N/A Power N/A
- Note 4: MSL (Moisture Sensitivity Level) per JEDEC Standard J-STD-020-E (as amended)
- Note 5: Mount onto PC Board using same solder paste as other components.
- Note 6: Application: Solderable PCB Spacer separates two PCBs apart with known spacing.



MODEL



BOTTOM

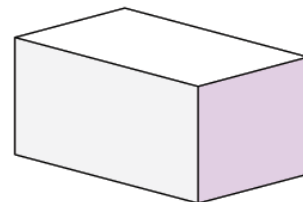


TOP



Contact: info@TopLine.tv
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www.PCBspacer.com

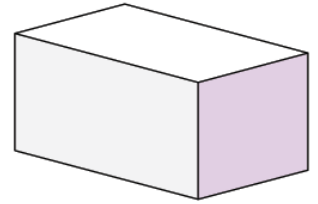
SCC0201 ~ 1206 Series Non-Metalized Ceramic Glue Mount Spacers



Part Number	Size Code	Height mm ± 10%	Height Inch ± 10%	QTY Reel	Reel Dia	Grade	Top Mark
SCC020112P7A	0201	0.30mm	0.012-inch	15,000	7-inch	High Temp	None
SCC040219P7A	0402	0.48mm	0.019-inch	10,000	7-inch	High Temp	None
SCC060315P7A	0603	0.40mm	0.015-inch	4,000	7-inch	High Temp	None
SCC060330P7A	0603	0.75mm	0.030-inch	4,000	7-inch	High Temp	None
SCC080517E7A	0805	0.43mm	0.017-inch	4,000	7-inch	High Temp	None
SCC080537E7A	0805	0.95mm	0.037-inch	4,000	7-inch	High Temp	None
SCC120631P7A	1206	0.80mm	0.031-inch	4,000	7-inch	High Temp	None
SCC120648P7A	1206	1.20mm	0.048-inch	4,000	7-inch	High Temp	None

Part Number System				
<u>SCC0201</u>	<u>12</u>	<u>P7A</u>	-	<u>OPTION</u>
Series	Height ± 10% (Code mils)	Reel	<u>Code</u>	<u>Description</u>
Ceramic Al ₂ O ₃ Non-Metalized Spacer	<u>Code</u> <u>_mm</u> 12 = 0.30mm 15 = 0.40mm 17 = 0.43mm 19 = 0.48mm 25 = 0.63mm 30 = 0.75mm 31 = 0.80mm 37 = 0.95mm 40 = 1.00mm 48 = 1.20mm	P7A = 7" (178mm) <u>Paper Tape</u> SCC0201 = 15,000 pcs SCC0402 = 10,000 pcs SCC0603 = 4,000 pcs SCC1206 = 4,000 pcs	WHITE = BLACK =	WHITE COLOR (Standard) BLACK COLOR
Footprint (mm) CODE L x W 0201 = 0.6 x 0.3 0402 = 1.0 x 0.5 0603 = 1.5 x 0.8 0805 = 2.0 x 1.2 1206 = 3.2 x 1.6		E7A = 7" (178mm) <u>Plastic Tape</u> SCC0805 = 4000 pcs		
Other Height Available				

- INFO**
- Note 1: Volume Resistivity: > 10¹⁴ Ω * cm Insulative
 - Note 2: Temperature Operating +450°C Storage -165°C ~ +450°C
 - Note 3: Working Voltage 1000V Current Rating N/A Power N/A
 - Note 4: MSL-1 (Moisture Sensitivity Level) per JEDEC Standard J-STD-020-E (as amended)
 - Note 5: Mount onto PC Board using same solder paste as other components.
 - Note 6: Application: Solderable PCB Spacer separates two PCBs apart with known spacing.



PACKAGE OUTLINE

TOP AND BOTTOM VIEW

Size Code	Length (L)	Width (W)
0201	0.6 mm	0.3 mm
0402	1.0 mm	0.5 mm
0603	1.5 mm	0.8 mm
0805	2.0 mm	1.2 mm
1206	3.2 mm	1.6 mm

PCB PATTERN

Metalized PCB Pad not required

Size Code	Length (L)	Width (W)
0201	0.6 mm	0.3 mm
0402	1.0 mm	0.5 mm
0603	1.5 mm	0.8 mm
0805	2.0 mm	1.2 mm
1206	3.2 mm	1.6 mm

PCB Board dimensions are presented only as a guideline. Designers should use their own experience when designing PCB.

SIDE VIEW

<u>Code</u>	<u>mm</u>
12	= 0.30mm
15	= 0.40mm
17	= 0.43mm
19	= 0.48mm
25	= 0.63mm
30	= 0.75mm
31	= 0.80mm
37	= 0.95mm
40	= 1.00mm
48	= 1.20mm

Perspective View

TOP

BOTTOM



Tel: 1-800-776-9888
Email: info@TopLine.tv

Custom Zero Ohm Jumper Design Questionnaire

www.PCBjumper.com



Date _____ 20____ Position Engineering Purchasing

Contact _____ Title _____

Company _____ Tel _____ Ext _____

email _____ Project Ref# _____

Device or Original Mfgr PN _____ See Sketch Below See Attached Data Sheet

Pins Total: _____ Pitch: _____ mm Inch

Jumper Pin Connections: _____ to _____ _____ to _____ _____ to _____ _____ to _____
_____ to _____ _____ to _____ _____ to _____ _____ to _____
_____ to _____ _____ to _____ _____ to _____ _____ to _____

Application: _____ New board design
_____ Replace obsolete device
_____ Experimental project
_____ Other _____

Max Voltage: _____ Maximum Current: _____ Frequency: _____ Other Spec: _____

Quantity: Estimated Annual Usage _____ pcs One-time buy only _____ pcs

Delivery: Samples needed by _____ Mass production starts _____

Sketch of Device Package

Schematic Jumper Connections

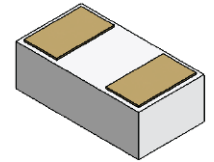
Email to info@TopLine.tv or FAX +1-478-451-5000



Tel: 1-800-776-9888
 Email: info@TopLine.tv

Custom PCB Spacer Design Questionnaire

www.PCBspacer.com



Date _____ 20____ Position Engineering Purchasing

Contact _____ Title _____

Company _____ Tel _____ Ext _____

email _____ Project Ref# _____

Mounting on PCB Solder Glue/Adhesive Mount Other _____

Size Code: 0201 0402 0603 0805 1206 Other _____

Spacer Height (H) : _____ mm Inch Height Tolerance ±10% Other _____

Spacer Length (L) : _____ mm Inch Spacer Width (W) : _____ mm Inch

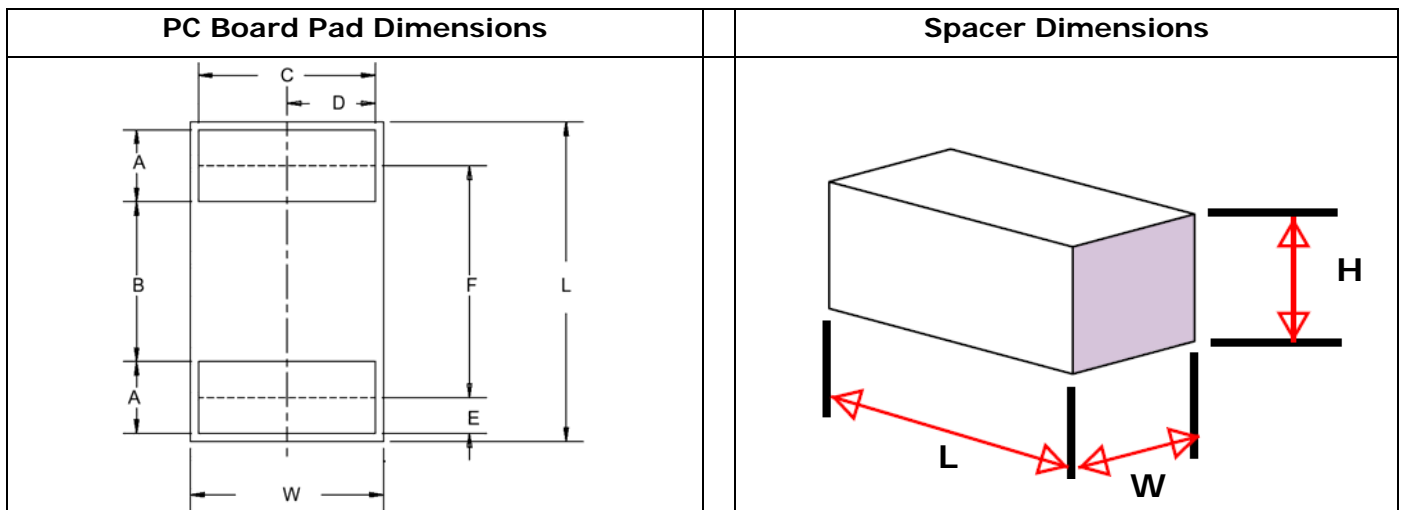
PCB Dimension mm Inch A _____ B _____ C _____ D _____ E _____ F _____

Purpose: Separate adjacent boards Hold up shield Support heavy part Other _____

Application: _____ PCB Material
 _____ FR4
 _____ Other

Quantity: Estimated Annual Usage _____ pcs One-time buy only _____ pcs

Delivery: Samples needed by _____ Mass production starts _____



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