
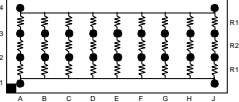

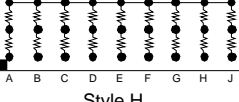

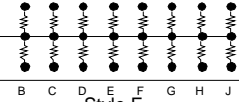
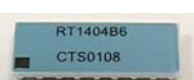
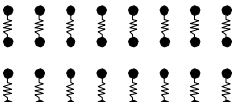

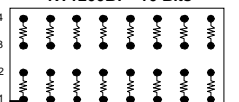

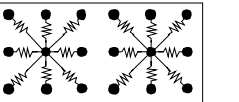

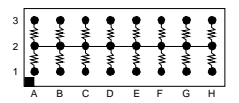

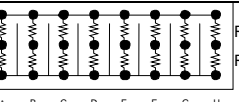

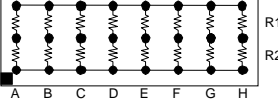
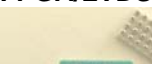
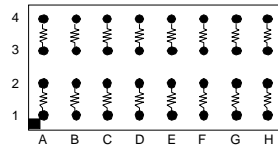
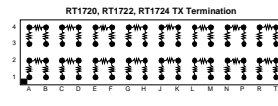
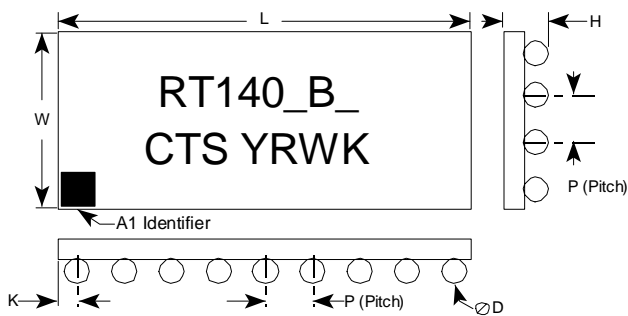


<p>LVD SCSI</p> 	 <p>Style E</p>	<p>9 line differential terminator set designed to meet Ultra2 and Ultra 3 LVD SCSI standards.</p>	<table border="1"> <thead> <tr> <th>1.27mm Pitch Part Number</th> <th>1.00mm Pitch Part Number</th> <th>R1 Ω</th> <th>R2 Ω</th> </tr> </thead> <tbody> <tr> <td>RT1300B6</td> <td>-</td> <td>475</td> <td>121</td> </tr> <tr> <td>RT1320B6</td> <td>-</td> <td>330</td> <td>150</td> </tr> </tbody> </table>	1.27mm Pitch Part Number	1.00mm Pitch Part Number	R1 Ω	R2 Ω	RT1300B6	-	475	121	RT1320B6	-	330	150																																																																				
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<p>Compact PCI IDE DRAM, SDRAM</p> 	<p>RT1200B7 - 16 Bits</p>  <p>Style C</p>	<p>16 line or 32 line terminator provides series termination at the source. Designed for Compact PCI PC card and memory applications. Standard resistance tolerance +/-1%</p>	<table border="1"> <thead> <tr> <th>1.27mm Pitch Part Number</th> <th>1.00mm Pitch Part Number</th> <th>R1 Ω</th> <th>Array Size</th> </tr> </thead> <tbody> <tr><td>-</td><td>RT1200B7</td><td>10</td><td>4 x 8</td></tr> <tr><td>-</td><td>RT1201B7</td><td>10</td><td>4 x 16</td></tr> <tr><td>-</td><td>RT1202B7</td><td>33</td><td>4 x 8</td></tr> <tr><td>-</td><td>RT1203B7</td><td>33</td><td>4 x 16</td></tr> <tr><td>RT1205B6</td><td>RT1205B7</td><td>50</td><td>4 x 16</td></tr> </tbody> </table>	1.27mm Pitch Part Number	1.00mm Pitch Part Number	R1 Ω	Array Size	-	RT1200B7	10	4 x 8	-	RT1201B7	10	4 x 16	-	RT1202B7	33	4 x 8	-	RT1203B7	33	4 x 16	RT1205B6	RT1205B7	50	4 x 16																																																								
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<p>GTL</p> 	 <p>Style D</p>	<p>8, 16 or 32 line terminator provides parallel termination at the receiver. Designed with star pattern to minimize crosstalk and improve high frequency performance. Tolerance +/- 1%</p>	<table border="1"> <thead> <tr> <th>1.27mm Pitch Part Number</th> <th>1.00mm Pitch Part Number</th> <th>R1 Ω</th> <th>Lines</th> <th>Array Size</th> </tr> </thead> <tbody> <tr><td>-</td><td>RT1100B7</td><td>22</td><td>8</td><td>3 x 3</td></tr> <tr><td>RT1101B6</td><td>RT1101B7</td><td>22</td><td>16</td><td>3 x 6</td></tr> <tr><td>RT1102B7</td><td>RT1102B7</td><td>22</td><td>24</td><td>3 x 9</td></tr> <tr><td>RT1450B6</td><td>-</td><td>25</td><td>8</td><td>3 x 3</td></tr> <tr><td>RT1451B6</td><td>-</td><td>25</td><td>16</td><td>3 x 6</td></tr> <tr><td>RT1452B6</td><td>-</td><td>25</td><td>32</td><td>3 x 12</td></tr> <tr><td>RT1453B6</td><td>-</td><td>56</td><td>8</td><td>3 x 3</td></tr> <tr><td>RT1454B6</td><td>-</td><td>56</td><td>16</td><td>3 x 6</td></tr> <tr><td>RT1427B6</td><td>-</td><td>56</td><td>32</td><td>3 x 12</td></tr> <tr><td>RT1410B6</td><td>-</td><td>150</td><td>8</td><td>3 x 3</td></tr> <tr><td>RT1411B6</td><td>-</td><td>150</td><td>16</td><td>3 x 6</td></tr> <tr><td>RT1412B6</td><td>RT1412B7</td><td>150</td><td>32</td><td>3 x 12</td></tr> </tbody> </table>	1.27mm Pitch Part Number	1.00mm Pitch Part Number	R1 Ω	Lines	Array Size	-	RT1100B7	22	8	3 x 3	RT1101B6	RT1101B7	22	16	3 x 6	RT1102B7	RT1102B7	22	24	3 x 9	RT1450B6	-	25	8	3 x 3	RT1451B6	-	25	16	3 x 6	RT1452B6	-	25	32	3 x 12	RT1453B6	-	56	8	3 x 3	RT1454B6	-	56	16	3 x 6	RT1427B6	-	56	32	3 x 12	RT1410B6	-	150	8	3 x 3	RT1411B6	-	150	16	3 x 6	RT1412B6	RT1412B7	150	32	3 x 12															
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<p>PCI</p> 	<p>RT1417, RT1418 - 16 Bits</p>  <p>Style F</p>	<p>8 or 16 line bias network provides pull-up or pull-down to reference voltage. Designed for PCI and PCIX applications. Standard tolerance +/-1%</p>	<table border="1"> <thead> <tr> <th>1.27mm Pitch Part Number</th> <th>1.00mm Pitch Part Number</th> <th>R1 Ω</th> <th>Lines</th> <th>Array Size</th> </tr> </thead> <tbody> <tr><td>RT1415B6</td><td>RT1415B7</td><td>4.7K</td><td>8</td><td>3 x 4</td></tr> <tr><td>RT1416B6</td><td>RT1416B7</td><td>8.2K</td><td>8</td><td>3 x 4</td></tr> <tr><td>RT1417B6</td><td>RT1417B7</td><td>4.7K</td><td>16</td><td>3 x 8</td></tr> <tr><td>RT1418B6</td><td>RT1418B7</td><td>8.2K</td><td>16</td><td>3 x 8</td></tr> </tbody> </table>	1.27mm Pitch Part Number	1.00mm Pitch Part Number	R1 Ω	Lines	Array Size	RT1415B6	RT1415B7	4.7K	8	3 x 4	RT1416B6	RT1416B7	8.2K	8	3 x 4	RT1417B6	RT1417B7	4.7K	16	3 x 8	RT1418B6	RT1418B7	8.2K	16	3 x 8																																																							
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<p>LVPECL</p> 	 <p>Style G</p>	<p>8 line terminator network provides Thevenin termination. Designed for LVPECL applications. Standard resistor tolerance is ±1%</p>	<table border="1"> <thead> <tr> <th>1.27mm Pitch Part Number</th> <th>1.00mm Pitch Part Number</th> <th>R1 Ω</th> <th>R2 Ω</th> </tr> </thead> <tbody> <tr> <td>RT1250B6</td> <td>RT1250B7</td> <td>127</td> <td>82.5</td> </tr> </tbody> </table>	1.27mm Pitch Part Number	1.00mm Pitch Part Number	R1 Ω	R2 Ω	RT1250B6	RT1250B7	127	82.5																																																																								
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<p>VME</p> 	 <p>Style G</p>	<p>8 line terminator network provides Thevenin termination. Designed for VME64 and VME64x applications. Standard resistance tolerance is +/- 1%</p>	<table border="1"> <thead> <tr> <th>1.27mm Pitch Part Number</th> <th>1.00mm Pitch Part Number</th> <th>R1 Ω</th> <th>R2 Ω</th> </tr> </thead> <tbody> <tr> <td>-</td> <td>RT1210B7</td> <td>330</td> <td>470</td> </tr> <tr> <td>-</td> <td>RT1211B7</td> <td>220</td> <td>1.8K</td> </tr> </tbody> </table>	1.27mm Pitch Part Number	1.00mm Pitch Part Number	R1 Ω	R2 Ω	-	RT1210B7	330	470	-	RT1211B7	220	1.8K																												
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<p>FPGA/LVDS</p> 	<p>RT1710 RX Termination</p>  <p>RT1720, RT1722, RT1724 TX Termination</p>  <p>Style I</p>	<p>These LVPECL and LVDS termination networks are designed for high performance termination of differential Input/Output signals on some of the most popular Field Programmable Gate Arrays (FPGAs). Designed for termination of Xilinx® and Altera® FPGAs. 8 or 16 differential channels of termination provided in a single integrated package</p>	<table border="1"> <thead> <tr> <th>1.27mm Pitch Part Number</th> <th>1.00mm Pitch Part Number</th> <th>R1 Ω</th> <th>R2 Ω</th> <th>Array Size</th> </tr> </thead> <tbody> <tr> <td>RT1710B6</td> <td>RT1710B7</td> <td>100</td> <td>-</td> <td>4 x 8</td> </tr> <tr> <td>-</td> <td>RT1720B7</td> <td>187</td> <td>100</td> <td>4 x 16</td> </tr> <tr> <td>RT1721B6</td> <td>RT1721B7</td> <td>187</td> <td>100</td> <td>4 x 8</td> </tr> <tr> <td>-</td> <td>RT1722B7</td> <td>140</td> <td>165</td> <td>4 x 16</td> </tr> <tr> <td>RT1723B6</td> <td>RT1723B7</td> <td>140</td> <td>165</td> <td>4 x 8</td> </tr> <tr> <td>-</td> <td>RT1724B7</td> <td>140</td> <td>135</td> <td>4 x 16</td> </tr> <tr> <td>RT1725B6</td> <td>RT1725B7</td> <td>140</td> <td>135</td> <td>4 x 8</td> </tr> </tbody> </table>	1.27mm Pitch Part Number	1.00mm Pitch Part Number	R1 Ω	R2 Ω	Array Size	RT1710B6	RT1710B7	100	-	4 x 8	-	RT1720B7	187	100	4 x 16	RT1721B6	RT1721B7	187	100	4 x 8	-	RT1722B7	140	165	4 x 16	RT1723B6	RT1723B7	140	165	4 x 8	-	RT1724B7	140	135	4 x 16	RT1725B6	RT1725B7	140	135	4 x 8
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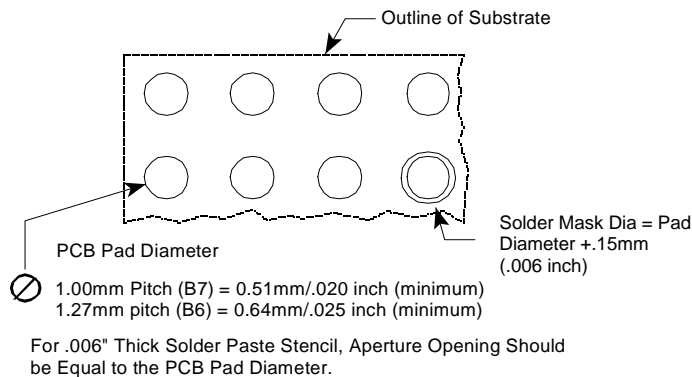
Mechanical Design



1.27 mm Pitch Package (B6 suffix)			
	mm	inch	
P	1.27±0.25	.050±.010	
D	0.76±0.05	.030±.002	
K	0.64±0.25	.025±.010	
H	1.32±0.15	.052±.006	
Array Size	L	W	
3 x 3	mm	3.81±0.15	3.81±0.15
	inch	.150±.006	.150±.006
3 x 4	mm	5.08±0.15	3.81±0.15
	inch	.200±.006	.150±.006
3 x 6	mm	7.62±0.15	3.81±0.15
	inch	.300±.006	.150±.006
3 x 8	mm	10.16±0.15	3.81±0.15
	inch	.400±.006	.150±.006
3 x 9	mm	11.43±0.15	3.81±0.15
	inch	.450±.006	.150±.006
3 x 12	mm	15.24±0.15	3.81±0.15
	inch	.600±.006	.150±.006
4 x 9	mm	11.43±0.15	5.08±0.15
	inch	.450±.006	.200±.006

1.00 mm Pitch Package (B7 suffix)			
	mm	inch	
P	1.00±0.25	.039±.010	
D	0.64±0.05	.025±.002	
K	0.50±0.25	.020±.010	
H	1.19±0.15	.047±.006	
Array Size	L	W	
3 x 4	mm	4.00±0.15	3.00±0.15
	inch	.157±.006	.118±.006
3 x 8	mm	8.00±0.15	3.00±0.15
	inch	.315±.006	.118±.006
3 x 9	mm	9.00±0.15	3.00±0.15
	inch	.354±.006	.118±.006
3 x 12	mm	12.00±0.15	3.00±0.15
	inch	.472±.006	.118±.006
4 x 8	mm	8.00±0.15	4.00±0.15
	inch	.315±.006	.157±.006
4 x 9	mm	9.00±0.15	4.00±0.15
	inch	.354±.006	.157±.006
4 x 16	mm	16.00±0.15	4.00±0.15
	inch	.630±.006	.157±.006

Recommended Land Pattern

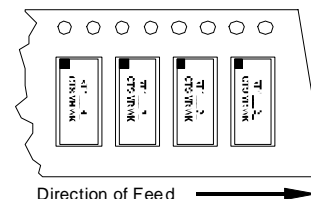


Part Number Coding

7 inch reel, Add TR7 to part number, example RT1415B7TR7

13 inch reel, Add TR13 to part number, example RT1415B7TR13

(Bulk packaging is not available)



Packaging Information

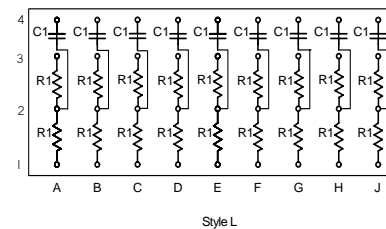
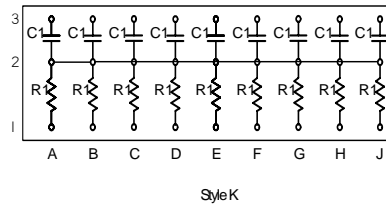
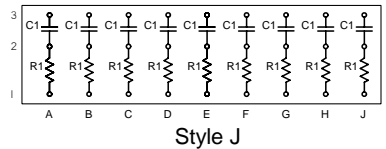
Suffix	TR7	TR13
Tape Width	24 mm	24mm
Carrier Pitch	8 mm	8 mm
Reel Diameter	7 inch	13 inch
Parts/Reel	1,000	4,000

Electrical Specifications

Resistor Tolerance:	± 1.0%
TCR	± 200ppm/°C
Operating Temperature Range	-55°C to +125°C
Maximum Resistor Power:	0.05 Watts minimum at 70°C
Maximum Package Power:	1.0 Watts at 70°C

ClearONE Resistor/Capacitor Ball Grid Array Package

R/C BGA



This Resistor/Capacitor terminator network provides high performance termination.

Designed with a ceramic substrate, this device virtually eliminates channel capacitance, a primary cause of reduced system performance. In addition, the BGA package eases routing design, saving the designer many hours of printed circuit layout.

1.27mm Pitch Part No.	1.00mm Pitch Part No.	R1 Ω	Tolerance R1		
--	RC3002B7	50	±1%		
RC3005B6		50	±1%		
RC3007B6		50	±1%		
RC3008B6		50	±1%		

1.27mm Pitch Part No.	1.00mm Pitch Part No.	C1	Tol.	Diel.	Max. DF
--	RC3002B7	0.1uf	±10%	X5R	5%
RC3005B6		0.1uf	±10%	X5R	5%
RC3007B6		100pf	±10%	NPO	2.5%
RC3008B6		33pf	±10%	NPO	2.5%

R/C Electrical Specifications

Resistor Tolerance:	± 1.0%
TCR	± 200ppm/°C
Operating Temperature Range	-55°C to +125°C (with NPO capacitors) -55°C to +85°C (with X5R capacitors)
Maximum Resistor Power:	0.05 Watts min. at 70°C (Not to exceed total package power)
Maximum Package Power:	1.0 Watts at 70°C
Maximum Processing Temperature:	235°C, 30 sec.

Note: Maximum resistor power will vary by resistance value.

R/C Packaging Information

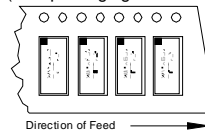
Suffix	TR7	TR13
Tape Width	24 mm	24mm
Carrier Pitch	8 mm	8 mm
Reel Diameter	7 inch	13 inch
Parts/Reel	1,000	4,000

Part Number Coding

7 inch reel, Add TR7 to part number, example RC3001B6TR7

13 inch reel, Add TR13 to part number, example RC3001B6TR13

(Bulk packaging is not available)

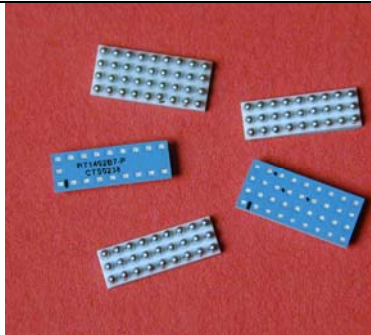


R/C Ordering Information

1.27mm Pitch Part Number	1.00mm Pitch Part Number	Style	Ball Grid Array Size	R1 Ω	Tolerance R1	C1	Cap Tolerance	Dielectric	DF
--	RC3002B7	K	3 x 9	50	±1%	0.1uf	±10%	X5R	5% max
RC3005B6	--	L	4 x 9	50	±1%	0.1uf	±10%	X5R	5% max
RC3007B6	--	J	3 x 9	50	±1%	100pf	±10%	NPO	2.5% max
RC3008B6	--	J	3 x 9	50	±1%	33pf	±10%	NPO	2.5% max

ClearONE Topside Probable Diagnostic Parts

Topside Probable Parts



In general, all ClearONE designs can be made available in Top Probe-Able versions upon request. Many of the standard products are available off-the-shelf, but your local CTS ClearONE representative should be contacted for specific device ordering and availability details. Figure 1 describes the proper numbering to convert a standard ClearONE part number to the Top Probe-Able version. (See Topside Probable Application Note for more information.)

Standard ClearONE Top Probe-Able
 RT1404B7 → RT1404B7P

Figure 1

DIM METRIC/ENGLISH	"PITCH SUFFIX"	
	B6	B7
"A"	0.64/ .025	0.50/ .020
"B"	1.27/ .050	1.00/ .039
"C"	0.64/ .025	0.50/ .020
"D"	0.66/ .026	0.50/ .020
"E"	0.71/ .028	0.28/ .011
"F"	0.66/ .026	0.66/ .026

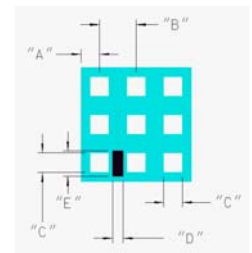


Figure 2 – Probe Pad Layout