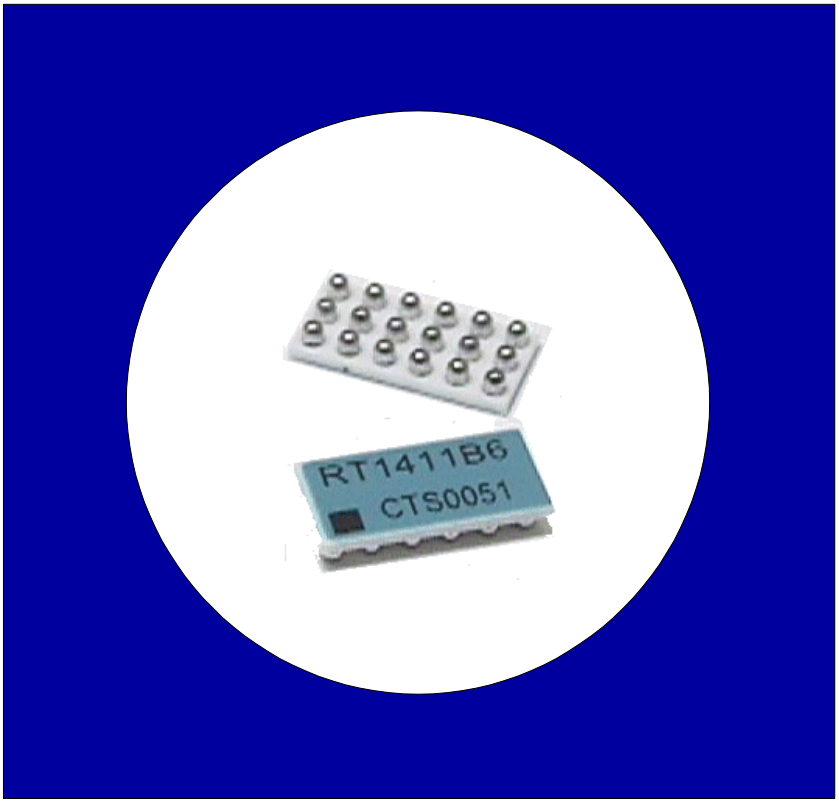
CTS CLEARONE™

GTL, GTL+, AGTL+ Terminators

Technical Data

Features

- 8 Bit, 16 Bit, and 32 BitTermination Sets
- Compliant for GTL, GTL+, and AGTL+ Termination
- Excellent High Frequency Performance
- Slim BGA Package
- 1% Resistor Tolerance
- Low Channel to Channel Cross Talk



Custom resistor values and tolerances available upon request.

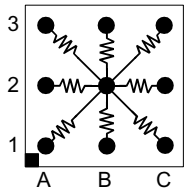
Description

These integrated termination networks provide high performance line termination for GTL, GTL+, and AGTL+ busses.

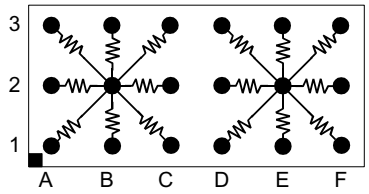
The patented star circuit design combined with a ceramic substrate virtually eliminates cross talk between channels that is common in other termination networks and resistor arrays.

The BGA packaging has been proven to reduce rework and improve reliability.

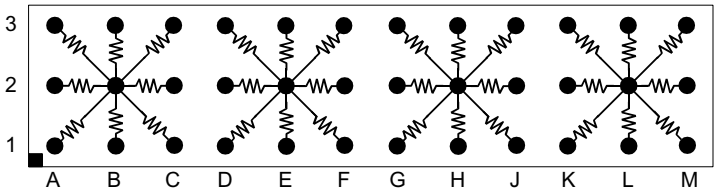
8 Bit



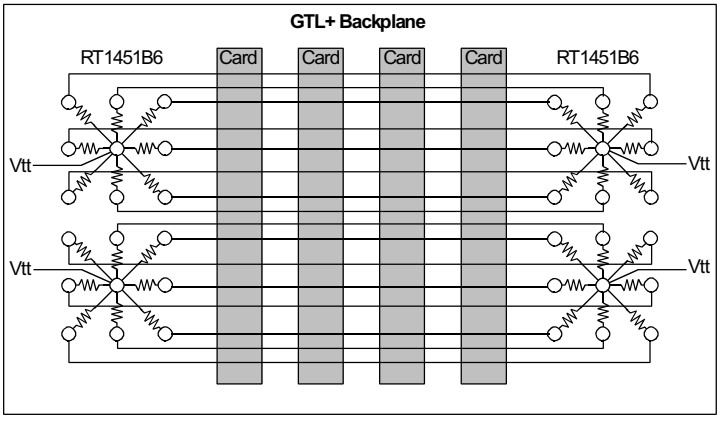
16 Bit



32 Bit



Typical Application



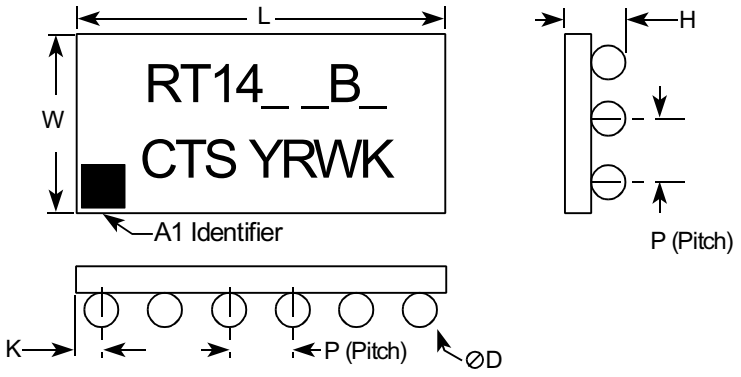
Ordering Information

Part Number	R Ohms	Bits	Pitch(mm)
RT1450B6	25	8	1.27
RT1451B6	25	16	1.27
RT1452B6	25	32	1.27
RT1453B6	56	8	1.27
RT1454B6	56	16	1.27
RT1427B6	56	32	1.27
RT1410B6	150	8	1.27
RT1411B6	150	16	1.27
RT1412B6	150	32	1.27
RT1412B7	150	32	1.00

(Tape and reel packaging information is shown on page 3)

6/26/01

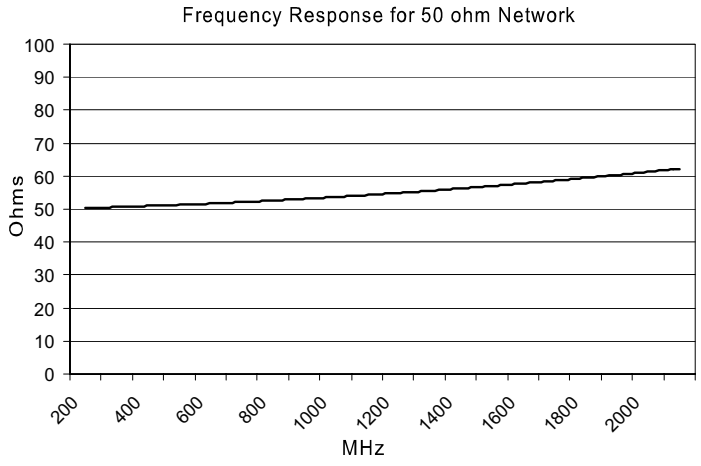
Mechanical Diagram



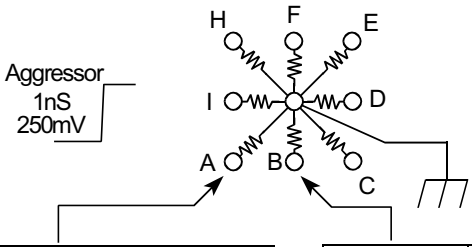
1.27 mm Pitch		L	W	H	P	D	K	Co-planarity
3 x 3 Array (8 bit)	mm	3.81±0.15	3.81±0.15	1.32±0.15	1.27±0.25	0.76±0.05	0.64±0.25	0.15
	inch	.150±.006	.150±.006	.052±.006	.050±.010	.030±.002	.025±.010	.006
3 x 6 Array (16 bit)	mm	7.62±0.15	3.81±0.15	1.32±0.15	1.27±0.25	0.76±0.05	0.64±0.25	0.15
	inch	.300±.006	.150±.006	.052±.006	.050±.010	.030±.002	.025±.010	.006
3 x 12 Array (32 bit)	mm	15.24±0.15	3.81±0.15	1.32±0.15	1.27±0.25	0.76±0.05	0.64±0.25	0.15
	inch	.600±.006	.150±.006	.052±.006	.050±.010	.030±.002	.025±.010	.006

1.00 mm Pitch		L	W	H	P	D	K	Co-planarity
3 x 12 Array (32 bit)	mm	12.00±0.15	3.00±0.15	1.19±0.15	1.00±0.25	0.64±0.05	0.50±0.25	0.15
	inch	.472±.006	.118±.006	.047±.006	.039±.010	.025±.002	.020±.010	.006

Frequency Performance (50 ohm Network)



Cross Talk Performance (50 ohm Network)



Aggressor on Lead A 250mV 1nS Rise Time	Measured Voltage (Peak to Peak)
Victim B	3.3 mV
Victim C	1.9 mV
Victim D	1.5 mV
Victim E	1.5 mV
Victim F	1.5 mV
Victim H	2.1 mV
Victim I	3.3 mV

Aggressor on Lead B 250mV 1nS Rise Time	Measured Voltage (Peak to Peak)
Victim A	3.2 mV
Victim C	2.7 mV
Victim D	1.8 mV
Victim E	1.4 mV
Victim F	1.5 mV
Victim H	1.5 mV
Victim I	2.0 mV

Electrical Specifications

Resistor Tolerance:
±1.0%

Maximum Resistor Power:
0.05 Watts at 70°C
(Not to Exceed Maximum Package Power)

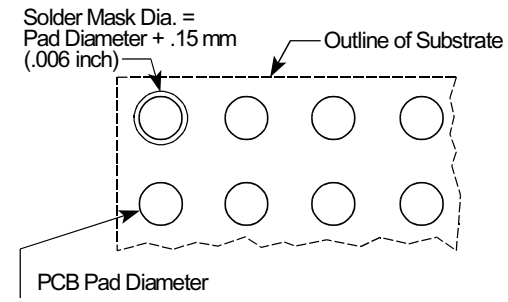
Maximum Package Power (70°C):
8 Bit = 0.3 Watts
16 Bit = 0.6 Watts
32 Bit = 1.2 Watts

Temperature Coefficient of Resistance:
±200 ppm/°C

Operating Temperature Range:
-55°C to +125°C

CTS Resistor Electrocomponents, 406 Parr Road, Berne Indiana, 46711 Tel: (219) 589-3111 Fax: (219) 589-3243 www.ctsclearone.com

Recommended Land Pattern



1.00 mm Pitch (B7) = 0.51mm/.020 inch
1.27 mm Pitch (B6) = 0.64mm/.025 inch

For .006" Thick Solder Paste Stencil, Aperture Opening Should be Equal to the PCB Pad Diameter.

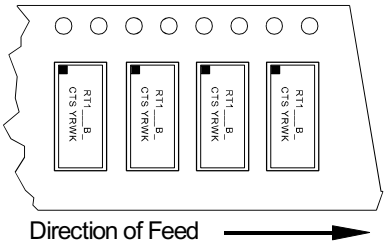
Refer to www.ctscorp.com/resistor for Land Pattern Library

Tape and Reel Packaging

Part Number Coding
7 inch reel, Add TR7 to part number, example RT1450B6TR7
13 inch reel, Add TR13 to part number, example RT1450B6TR13
(bulk packaging is not available)

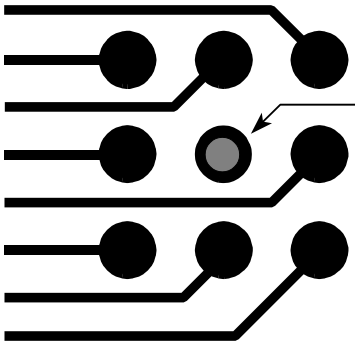
TR13 Suffix	
Tape Width	24 mm
Carrier Pitch	8 mm
Reel Diameter	13 inch
Parts/Reel	4,000

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



Routing Examples

8 Bit , 3 x 3 Array
(10X)

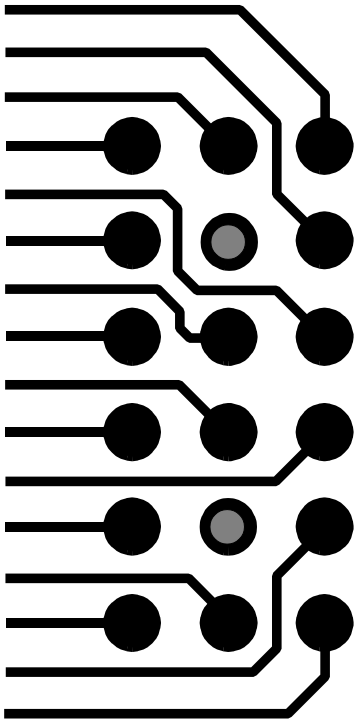


1.27 mm pitch land patterns are shown.

5 mil line widths shown.

Blind via to Vtt reference plane layer. Open via's on top of land pads are not recommended due to solder wicking.

16 Bit , 3 x 6 Array
(10X)



32 Bit , 3 x 12 Array
(5X)