GTL, GTL+, AGTL+ Terminator
Technical Data

Features

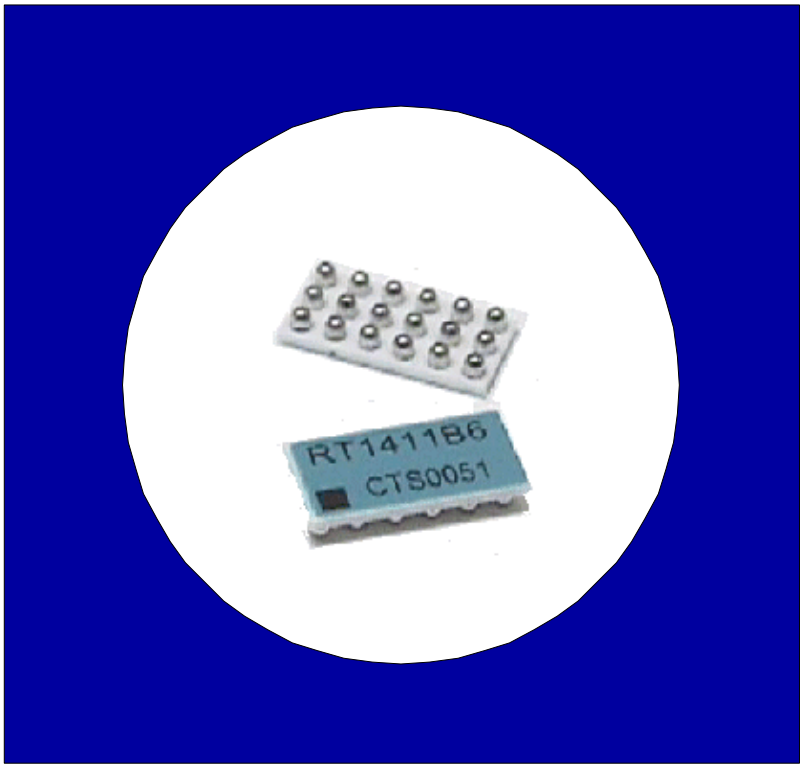
- 8 Bit, 16 Bit, and 32 Bit Termination Sets
- Compliant for GTL, GTL+, and AGTL+ Termination
- Excellent High Frequency Performance
- Slim BGA Package
- 1% Resistor Tolerance
- Low Channel to Channel Cross Talk

Description

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

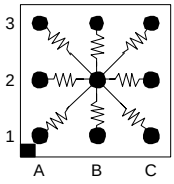
The patented star circuit design combined with a ceramic substrate virtually eliminates cross talk between channels that is common in other termination networks and resistor arrays.

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

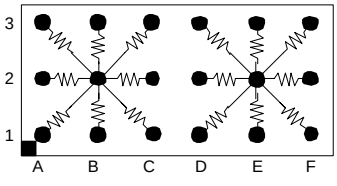


Custom resistor values and tolerances available upon request.

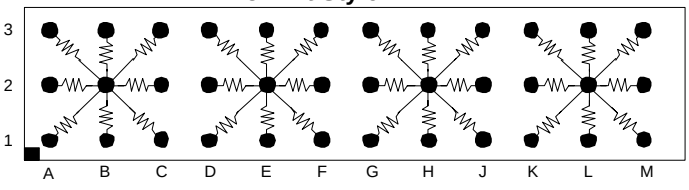
8 Bit Style D



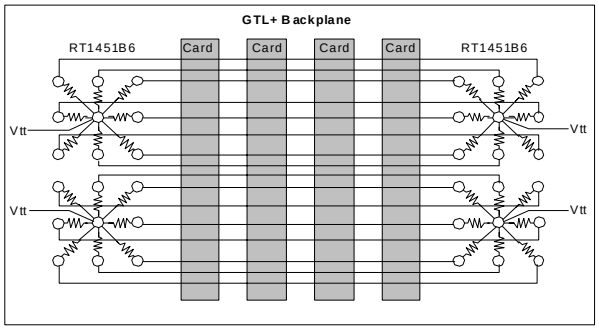
16 Bit Style D



32 Bit Style D



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

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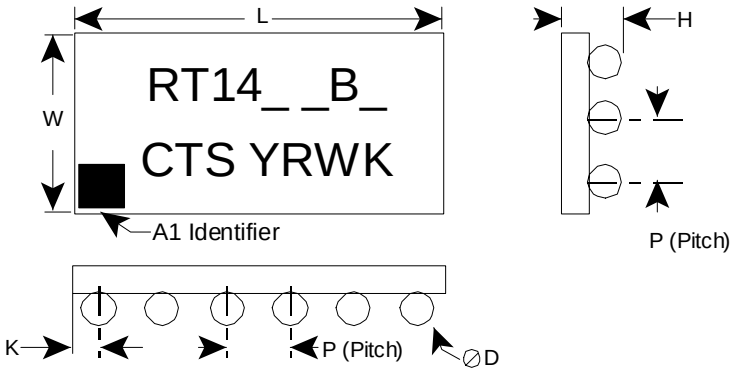
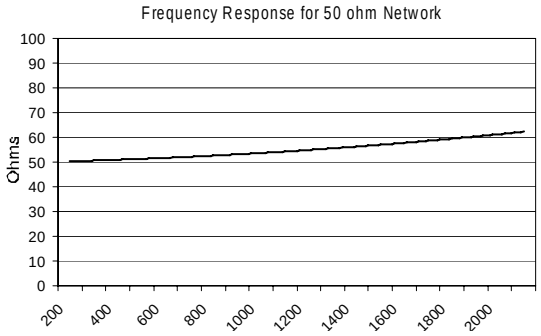
Mechanical Diagram

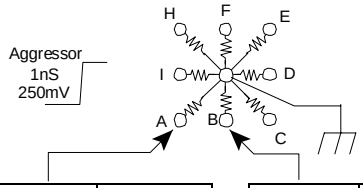


1.27mm Pitch		L	W	H	P	D	K	Coplanarity
3 x 3 Array (8 Bit)	mm	3.81±0.15	3.81±0.15	1.32±0.15	1.27±0.25	0.76±0.05	0.64±0.25	0.15
	inch	.150±.006	.150±.006	.052±.006	.050±.010	.030±.002	.025±.010	.006
3 x 6 Array (16 Bit)	mm	7.62±0.15	3.81±0.15	1.32±0.15	1.27±0.25	0.76±0.05	0.64±0.25	0.15
	inch	.300±.006	.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
1.00mm Pitch		L	W	H	P	D	K	Coplanarity
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)



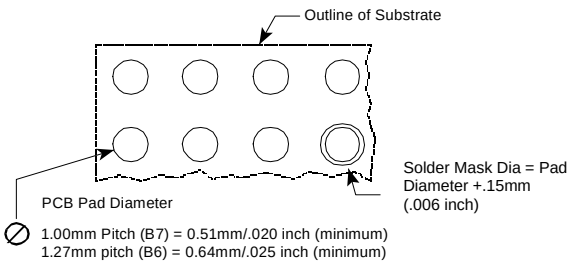
Cross Talk Performance (50 ohm Network)



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

Recommended Land Pattern



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

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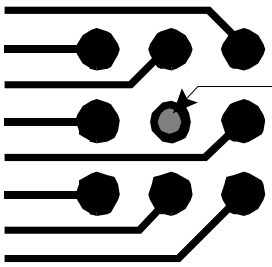
Routing Examples

8 Bit , 3 x 3 Array
(10X)



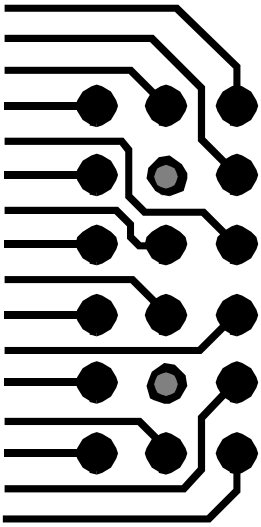
Signal Lines

1.27 mm pitch land patterns are shown.

5 mil line widths shown.

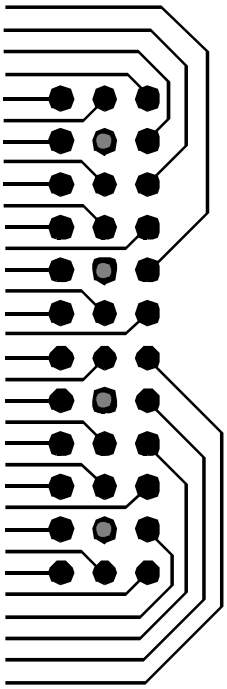
Blind via to Vtt reference plane layer. Open via's on top of land pads are not recommended due to solder wicking.

16 Bit , 3 x 6 Array
(10X)



Signal Lines

32 Bit , 3 x 12 Array
(5X)



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

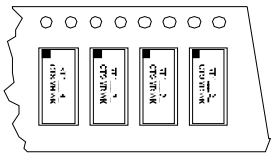
Packaging Information

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 RT1415B7TR7

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

(Bulk packaging is not available)



Direction of Feed

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