



GTL, GTL+, AGTL+ Terminator Technical Data Sheet

RoHS Compliant Parts Available

Description

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

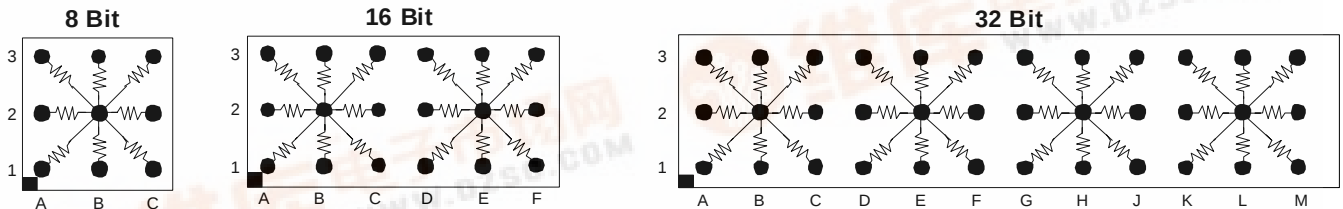
The patented star circuit design combined with a ceramic substrate minimizes cross talk between channels that is common in other termination networks and resistor arrays.

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

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
- RoHS Compliant Designs Available
 - Compatible with both lead and lead-free processes

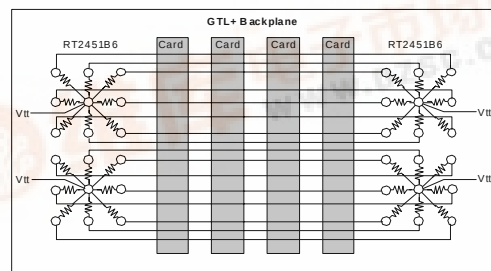
Style D



Electrical Specifications

Resistor Tolerance:	$\pm 1.0\%$
TCR	$\pm 100\text{ppm}/^{\circ}\text{C}$
Operating Temperature Range	-55°C to $+125^{\circ}\text{C}$
Maximum Resistor Power:	0.05 Watts at 70°C
Maximum Package Power:	1.0 Watts at 70°C
Process Requirements:	
Maximum Re-flow Temperature	Per IPC/JEDEC J-STD-020C

Typical Application



Ordering Information

Standard Part No.	R Ohms	Bits	Pitch (mm)	RoHS Part Number
RT1450B6	25	8	1.27	RT2450B6
RT1451B6	25	16	1.27	RT2451B6
RT1452B6	25	32	1.27	RT2452B6
RT1453B6	56	8	1.27	RT2453B6
RT1454B6	56	16	1.27	RT2454B6
RT1427B6	56	32	1.27	RT2427B6
RT1410B6	150	8	1.27	RT2410B6
RT1411B6	150	16	1.27	RT2411B6
RT1412B6	150	32	1.27	RT2412B6
RT1412B7	150	32	1.00	RT2412B7

Top Probe-able part numbers are available.

Refer to the following link for detailed Top Side Probe-able information:
www.ctscorp.com/components/clearone/TopProveClearOne.pdf

Packaging Information

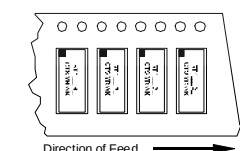
Suffix	TR7	TR13
Tape Width	24 mm	24mm
Carrier Pitch	8 mm	8 mm
Reel Diameter	7 inch	13 inch
Parts/Reel	1,000	4,000

Part Number Coding

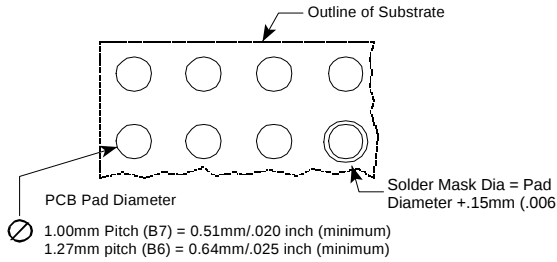
7 inch reel, Add TR7 to part number, example RT2415B7TR7

13 inch reel, Add TR13 to part number, example RT2415B7TR13

(Bulk packaging is not available)



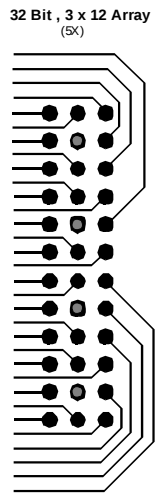
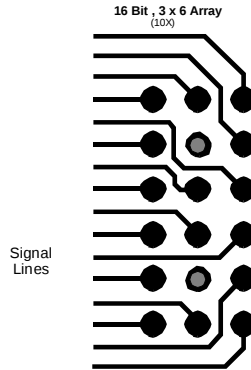
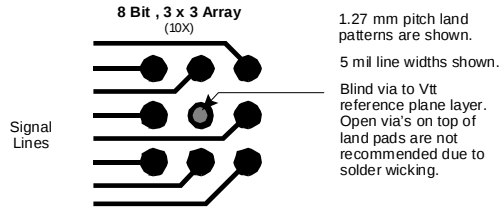
Recommended Land Pattern



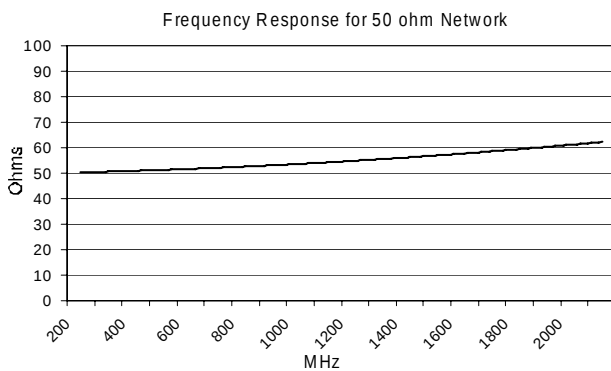
For .006" Thick Solder Paste Stencil, Aperture Opening Should be Equal to the PCB Pad Diameter.

Refer to www.ctscorp.com/components/clearone.asp for additional PCB design information

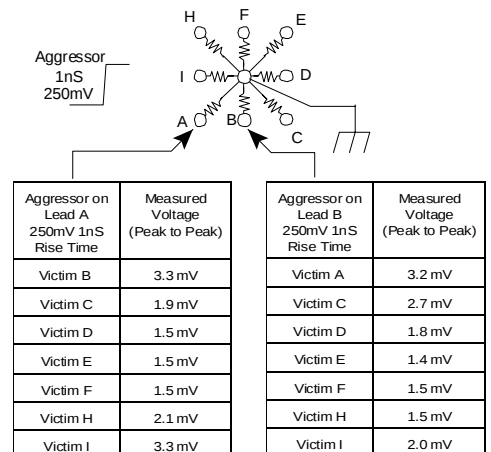
Routing Examples



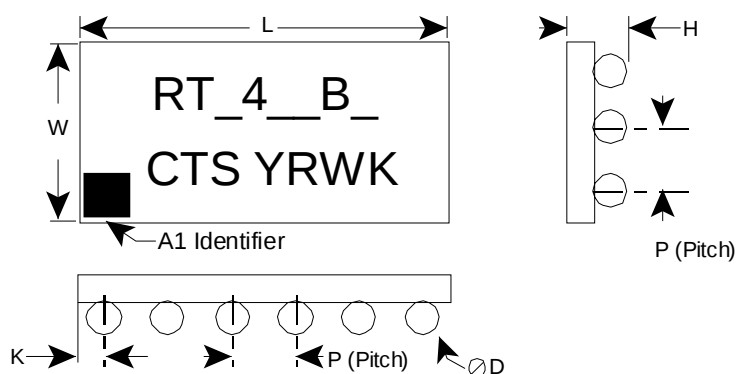
Frequency Performance (50 ohm Network)



Cross Talk Performance (50 ohm Network)



Mechanical Diagram



1.27mm Pitch		L	W	H	P	D	K
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
	inch	.150±.006	.150±.006	.052±.006	.050±.010	.030±.002	.025±.010
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
	inch	.300±.006	.150±.006	.052±.006	.050±.010	.030±.002	.025±.010
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
	inch	.600±.006	.150±.006	.052±.006	.050±.010	.030±.002	.025±.010
1.00mm Pitch		L	W	H	P	D	K
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
	inch	.472±.006	.118±.006	.047±.006	.039±.010	.025±.002	.020±.010

Complete ClearONE Product, Processing, and Application Information can be found at the following link:

<http://www.ctscorp.com/components/clearone.asp>