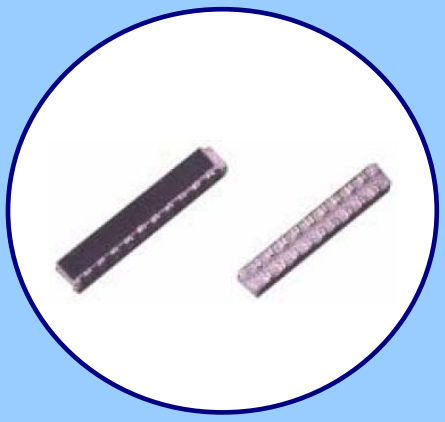
SERIES 752

SURFACE MOUNT RESISTOR NETWORK

FEATURES

- **High Density Packaging**
- **Low Profile**
- **Inputs/Outputs Available**
  - Single Row Terminations [SRT] – 08, 09, 10, 12
  - Dual Row Terminations [DRT] – 16, 18, 20, 24
- **Nickel Barrier Solder-Coated Pads**
- Designed for Visual Inspection of Solder Joints
- Designed for Board Cleaning
- Application Specific Circuits are Available
- Compatible with Solder Reflow Process
- Tape and Reel Packaging
- **RoHS Compliant in Accordance with EU Directive 2005/95/EC**
  - Lead-Free Termination Finish
  - Exemption 5 for Pb in glass material and resistor elements



ORDERING INFORMATION

752 ☐ ☐ ☐ ☐ P ☐

NUMBER OF PINS

SRT
08 = 8 pads
09 = 9 pads
10 = 10 pads
12 = 12 pads
DRT
16 = 16 pads
18 = 18 pads
20 = 20 pads
24 = 24 pads

PACKAGING

Blank = Bulk Pack [250 pcs.]
TR7 = Tape & Reel, 7" reel
TR13 = Tape & Reel, 13" reel

RoHS COMPLIANT

Lead Finish: Matte Sn over Ni barrier on Ag thick film.

SCHEMATIC

1 - Bussed Circuit
3 - Isolated Circuit
5 - Dual Terminator Circuit

TOLERANCE

Schematic 1 & 3	Schematic 5
J = ±5% G = ±2% [Std] F = ±1% D = ±1/2%	Tolerance code is not added for dual terminator configuration. Standard tolerance is ±2%.

RESISTOR CODE

Refer to tables on Page 2.
[Codes are 3 - 4 characters.]

Notes:

1. No dashes or spaces to appear in part number.
2. Example Part Numbers;
   Tape & Reel, 752091103GPTR13.
   Bulk, 752103221GP.

Not all performance combinations and resistor values may be available.
Contact your local CTS Representative or CTS Customer Service for availability.

ORDERING INFORMATION

AVAILABLE RESISTOR VALUES & EIA CODES

Ohms	Code	Ohms	Code	Ohms	Code	Ohms	Code	Ohms	Code	Ohms	Code
0	000X	68	680	470	471	3.3K	332	27K	273	220K	224
10	100	75	750	510	511	3.9K	392	33K	333	270K	274
12	120	82	820	560	561	4.7K	472	39K	393	330K	334
15	150	100	101	680	681	5.1K	512	47K	473	390K	394
18	180	110	111	820	821	5.6K	562	51K	513	470K	474
22	220	120	121	1K	102	6.8K	682	56K	563	510K	514
27	270	150	151	1.2K	122	8.2K	822	68K	683	560K	564
33	330	180	181	1.5K	152	10K	103	82K	823	680K	684
39	390	220	221	1.8K	182	12K	123	100K	104	820K	824
47	470	270	271	2.0K	202	15K	153	120K	124	1M	105
51	510	330	331	2.2K	222	18K	183	150K	154		
56	560	390	391	2.7K	272	22K	223	180K	184		

DUAL TERMINATOR RESISTOR VALUES – Schematic 5

Standard CTS Dual Terminator products contain 2[N-2] resistors of two different values with resistor value connected to a common buss. The part number includes the EIA Code value of the Thevenin equivalent resistances of R_1 and R_2. The Thevenin equivalent resistance is calculated in the following way: [The suffix letter relates only to the sequence of variations that equal the same equivalent resistance.]

$R_{EQ} = R_1 * R_2 / (R_1 + R_2)$

Example			
752095131A	R_1 = 220 Ohms	R_2 = 330 Ohms	R_{EQ} = 132 Ohms
752095191A	R_1 = 330 Ohms	R_2 = 470 Ohms	R_{EQ} = 194 Ohms
752095131C	R_1 = 180 Ohms	R_2 = 470 Ohms	R_{EQ} = 130 Ohms

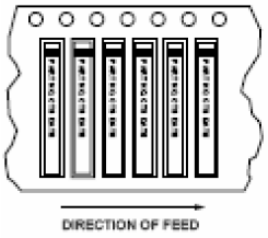
[Pad 1 is common to R_2 and Pin N is common to R_1.]

R1 Ohms	R2 Ohms	Thevenin Equivalent	CTS Code	R1 Ohms	R2 Ohms	Thevenin Equivalent	CTS Code	R3 Ohms	R4 Ohms	Thevenin Equivalent	CTS Code
25	50	17 ohms	150A	330	680	222 ohms	221A	180	220	99 ohms	101A
30	50	19 ohms	190A	330	390	179 ohms	181A	560	1K	359 ohms	361A
30	620	29 ohms	290A	330	220	132 ohms	131D	680	1K	405 ohms	401A
33	4.7K	33 ohms	330A	330	330	165 ohms	171B	750	750	375 ohms	381A
36	620	34 ohms	340A	360	720	240 ohms	241B	750	2.3K	566 ohms	571A
43	620	40 ohms	400A	360	600	225 ohms	231A	1K	3.3K	767 ohms	771A
68	189	50 ohms	500B	390	620	239 ohms	241A	1K	2K	667 ohms	671A
75	620	67 ohms	670A	470	1K	320 ohms	321A	1.1K	2.2K	733 ohms	731A
80	220	59 ohms	590A	470	680	278 ohms	281A	1.2K	1.2K	600 ohms	601A
81	130	50 ohms	500A	470	940	313 ohms	311A	1.5K	1.5K	750 ohms	751A
81	2.2K	78 ohms	780A	500	500	250 ohms	251A	1.5K	3.3K	1031 ohms	102A
100	200	67 ohms	670B	560	910	347 ohms	351A	2K	2K	1000 ohms	102B
100	430	81 ohms	810A	110	220	73 ohms	730A	2.2K	5.6K	1579 ohms	162A
100	150	60 ohms	600A	118	178	71 ohms	710A	2.2K	4.4K	1467 ohms	152A
106	169	65 ohms	650A	120	200	75 ohms	750B	2.2K	3.3K	1320 ohms	132A
200	1.5K	176 ohms	171D	120	180	72 ohms	720A	3K	6.2K	2022 ohms	202A
220	330	132 ohms	131A	120	120	60 ohms	600B	3K	2K	1200 ohms	122A
220	270	121 ohms	121B	150	150	75 ohms	750A	3.3K	4.7K	1939 ohms	192A
220	220	110 ohms	111D	160	260	99 ohms	990A	3.9K	3.3K	1788 ohms	182A
240	170	100 ohms	101C	160	240	96 ohms	960A	4.7K	22K	3873 ohms	392A
240	620	173 ohms	171C	160	270	100 ohms	101D	5K	5K	2500 ohms	252A
250	250	125 ohms	131B	162	260	100 ohms	101B	6.8K	22K	5194 ohms	522A
270	470	171 ohms	171A	180	300	113 ohms	111B	10K	51K	8361 ohms	842A
270	180	108 ohms	111C	180	470	130 ohms	131C	50K	100K	33,333 ohms	333A
271	131	88 ohms	880A	180	390	123 ohms	121A				
330	470	194 ohms	191A	180	270	108 ohms	111A				

1. All tolerances +/-2%.
2. Other values available on request.
3. Suffix letter has no significance - assigned in sequential order.

PACKAGING INFORMATION

Tape & Reel		
Reel Diameter	7"	13"
Tape Width	24mm	
Tape Pitch	4mm	
No. Parts/Reel	1,000	5,000



ELECTRICAL CHARACTERISTICS

GENERAL REQUIREMENTS

Resistance Range:
Standard: 10 Ohms to 1M Ohms

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

Temperature Coefficient:
Standard: ±200ppm/°C
Special [33 Ohms to 1M Ohms]: ±100ppm/°C

Resistance Tolerance:
Standard: ±2% or 0.5 Ohms [whichever is greater]
Special: ±1% or 0.3 Ohms [whichever is greater]

Dielectric Strength:
100 V_{AC}

Maximum Operating Voltage:
25 V, not to exceed rated power

POWER RATING

[Total Network Power, number of inputs/outputs (Watts)]

SRT	8 Pad	9 Pad	10 Pad	12 Pad	-	-	-	-
DRT	-	-	-	-	16 Pad	18 Pad	20 Pad	24 Pad
@25°C	1.2W	1.3W	1.4W	1.7W	1.4W	1.5W	1.6W	2.0W
@70°C	0.08W	0.85W	0.9W	1.1W	0.9W	0.95W	1.0W	1.3W

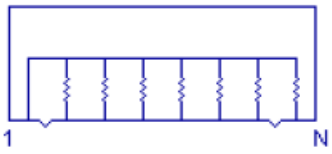
MAXIMUM RESISTOR POWER

[Not to exceed total network power]

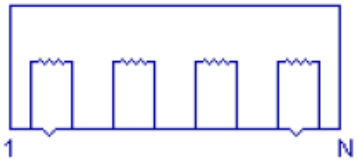
Schematic	1	3	5
@25°C	0.12W	0.24W	0.12W
@70°C	0.08W	0.16W	0.08W

CIRCUIT TYPES

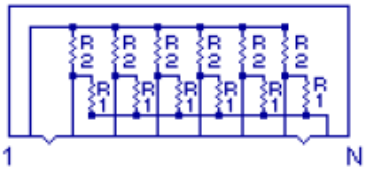
BUSSED SRT [Schematic 1]



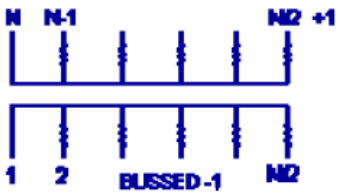
ISOLATED SRT [Schematic 3]
(Not Available in 9 Pads Configuration)



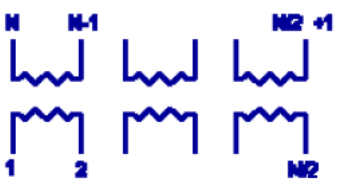
DUAL TERMINATOR SRT [Schematic 5]
(Not Available in DRT)



BUSSED DRT [Schematic 1]



ISOLATED DRT [Schematic 3]
(Not Available in 18 Pads Configuration)



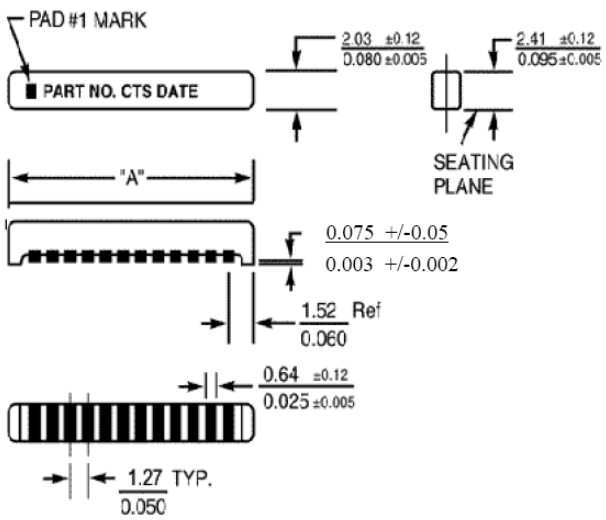
MECHANICAL SPECIFICATION

PACKAGE DRAWING

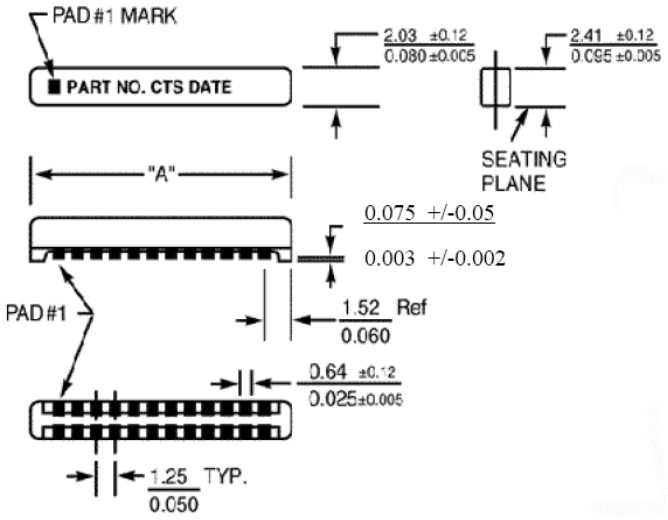
No. of Pads SRT/DRT	"A" Dimension mm	inch
08/16	11.81 ±0.12	0.465 ±0.005
09/18	13.08 ±0.12	0.515 ±0.005
10/20	14.35 ±0.12	0.565 ±0.005
12/24	16.89 ±0.12	0.665 ±0.005

Notes:
1. Pad termination (e3). Barrier plating is nickel (Ni) over silver (Ag) thick film pad with Matte tin (Sn) finish.
2. Reflow conditions per JEDEC-J-STD-020, +260°C maximum.
3. MSL = 1.

Single Row Termination (SRT)



Dual Row Termination (DRT)



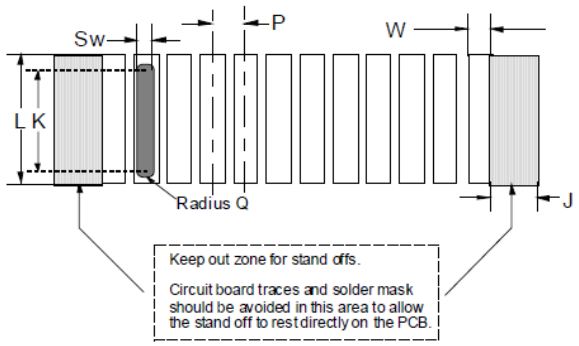
RECOMMENDED LAND PATTERN

Recommended Land Pattern							
Dimension		D	P	L	W	J	S
752	mm	1.27	1.27	3.18	0.76	1.27	0.64
	in.	0.05	0.05	0.125	0.03	0.05	0.025

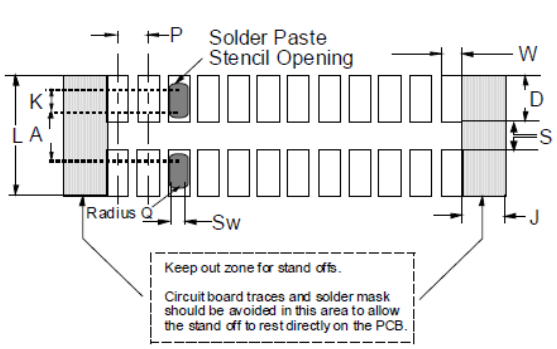
SRT Solder Paste Stencil Opening					
Dimension		K	Sw	A	Q
4 mil	mm	2.40	0.76	NA	0.38
	in.	0.095	0.03		0.015
6 mil	mm	1.90	0.63	NA	0.33
	in.	0.075	0.025		0.013

DRT Solder Paste Stencil Opening					
Dimension		K	Sw	A	Q
4 mil	mm	0.66	0.76	1.52	0.38
	in.	0.026	0.03	0.06	0.015
6 mil	mm	0.51	0.63	1.40	0.30
	in.	0.02	0.025	0.055	0.012

Single Row Termination



Dual Row Termination



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