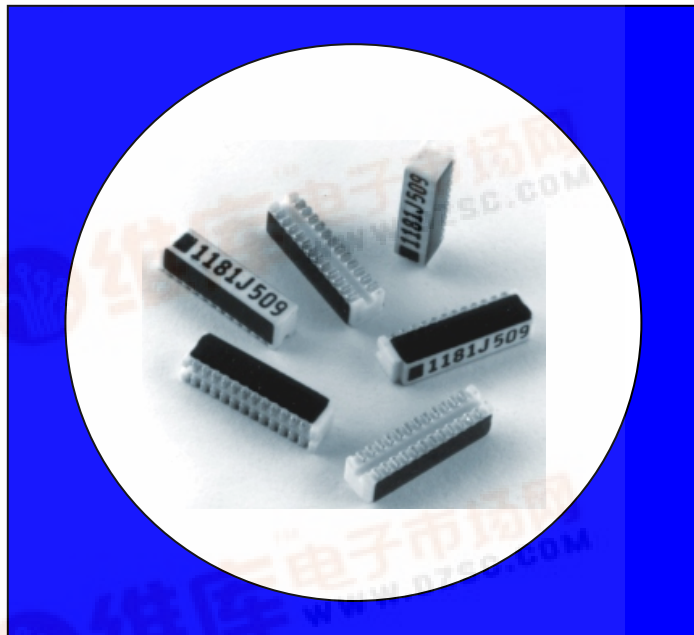


### Features

- High Density Packaging
- Low Profile
- Inputs/Outputs Available:
  - Single Row Terminations (SRT) – 8, 9, 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 Reflow Solder Process
- RoHS Compliant



#### Resistance Tolerance:

Standard:  $\pm 2\%$  or  $0.5\Omega$  (whichever is greater)  
 Special:  $\pm 1\%$  or  $0.3\Omega$  (whichever is greater)

#### Resistance Range:

Standard:  $10\Omega$  to 1 Meg $\Omega$

#### Temperature Coefficient:

Standard:  $\pm 200\text{PPM}/^\circ\text{C}$

#### Maximum Operating Voltage:

25V not to exceed rated power

#### Operating Temperature Range:

$-55^\circ\text{C}$  to  $+125^\circ\text{C}$

#### Power Rating (Total Network Power):

Number of inputs/outputs (watts)

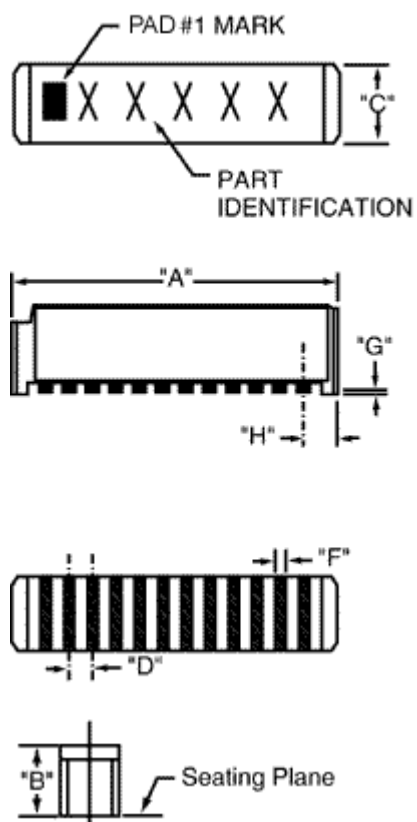
| SRT   | 8   | 9    | 10   | 12   |     |      |      |      |
|-------|-----|------|------|------|-----|------|------|------|
| DRT   |     |      |      |      | 16  | 18   | 20   | 24   |
| @25°C | 0.6 | 0.64 | 0.68 | 0.82 | 0.6 | 0.64 | 0.68 | 0.82 |
| @70°C | 0.4 | 0.43 | 0.45 | 0.55 | 0.4 | 0.43 | 0.45 | 0.55 |

#### Maximum Resistor Power:

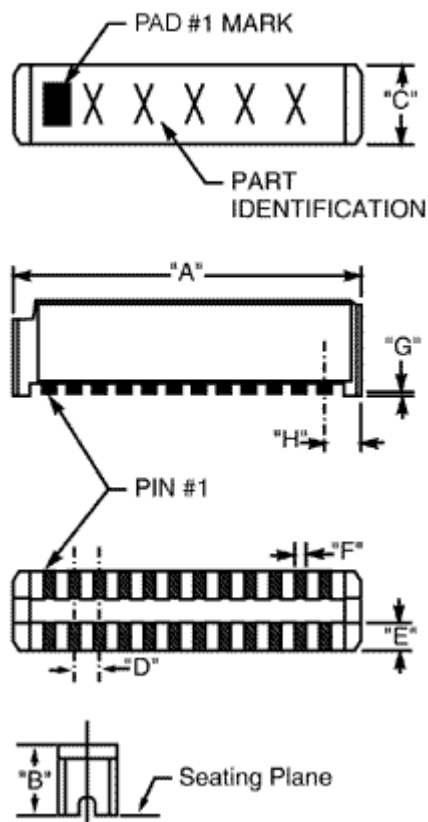
(Not to Exceed Total Network Power)

|       | Bussed & Dual Terminator Schematic | Isolated Schematic |
|-------|------------------------------------|--------------------|
| @25°C | 0.06w                              | 0.12w              |
| @70°C | 0.04w                              | 0.08w              |

## Single Row Termination (SRT)



## Dual Row Termination (DRT)

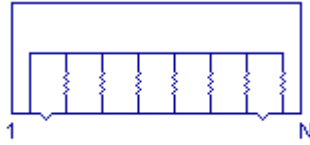


| Dim. | mm         | In.          |
|------|------------|--------------|
| B    | 2.41 ±0.12 | 0.095 ±0.005 |
| C    | 2.03 ±0.12 | 0.080 ±0.005 |
| D    | 0.64 ±0.12 | 0.025 ±0.005 |
| E    | 0.71 ±0.12 | 0.028 ±0.005 |
| F    | 0.33 ±0.08 | 0.013 ±0.003 |
| G    | 0.08 ±0.05 | 0.003 ±0.002 |
| H    | 0.89 Ref.  | 0.035 Ref.   |

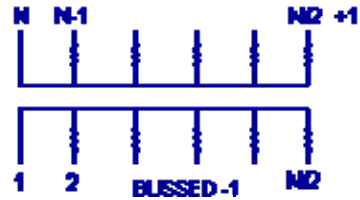
| Terminations | "A" Dimension |               |
|--------------|---------------|---------------|
|              | mm<br>±0.12   | In.<br>±0.005 |
| 8            | 6.22          | 0.245         |
| 9            | 6.86          | 0.27          |
| 10           | 7.49          | 0.295         |
| 12           | 8.76          | 0.345         |
| 16           | 6.22          | 0.245         |
| 18           | 6.86          | 0.27          |
| 20           | 7.49          | 0.295         |
| 24           | 8.76          | 0.345         |

## Types of Circuits

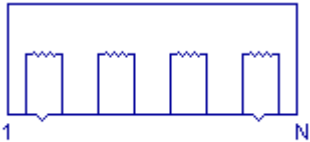
[查询"753081180FPTR7"供应商](#)



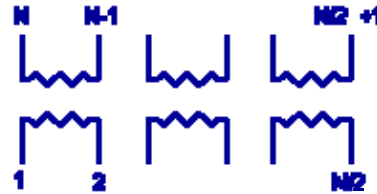
**Bussed SRT Schematic 1**



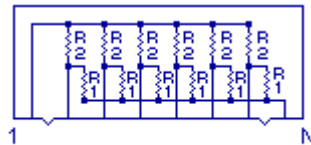
**Bussed DRT Schematic 1**



**Isolated SRT Schematic 3**  
(Not Available in 9 Pad)



**Isolated DRT Schematic 3**  
(Not Available in 18 Pad)



**Dual Terminator SRT Schematic 5**  
(Not Available in DRT)

## Dual Terminator Overview

Standard CTS Dual Terminator products contain (2N-2) resistors of two different values with each resistor value connected to a common buss. The part number includes the EIA Code value of the Thevenin equivalent resistances of R1 and R2. 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. Reference chart.

$$R_{eq} = R_1 R_2 / (R_1 + R_2)$$

| Examples:  |             |             |              |
|------------|-------------|-------------|--------------|
| 753095131A | R1=220 Ohms | R2=330 Ohms | Req=132 Ohms |
| 753095191A | R1=330 Ohms | R2=470 Ohms | Req=194 Ohms |
| 753095131C | R1=180 Ohms | R2=470 Ohms | Req=130 Ohms |

Pin #1 is common to R2 and Pin N is common to R.

## Dual Terminator Resistor Values

[查询"753081180FPTR7"供应商](#)

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

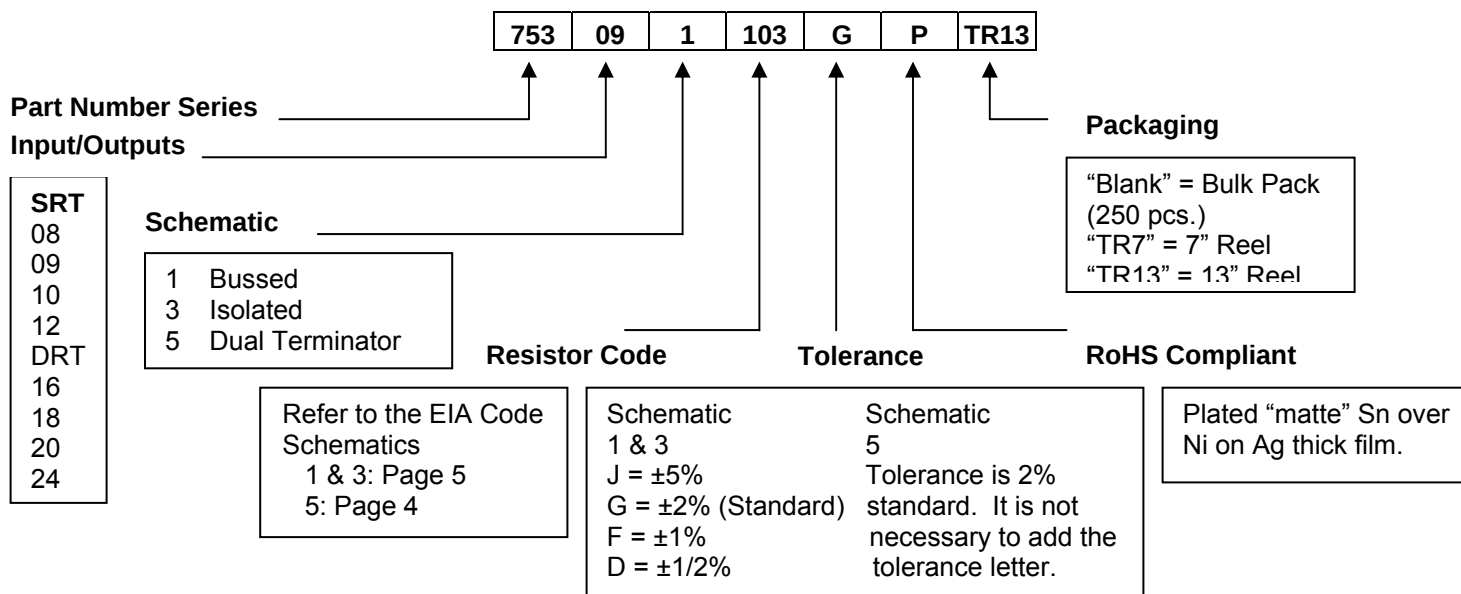
1. All tolerances +/-2%. 2. Other values available on request. 3. Suffix letter has no significance - assigned in sequential order.

## Standard Resistor Values & EIA Code

查询"753091180GPTR7"供应商

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

## How to Order



NOTE: No dashes or spaces to appear in part number.  
Example: 753091103GPTR13

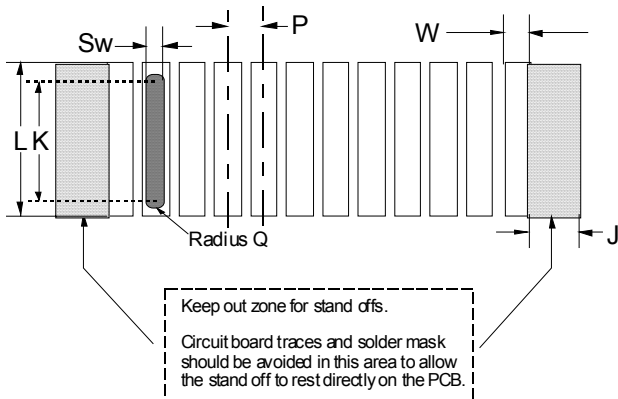
## Packaging

| Tape & Reel     |      |      |
|-----------------|------|------|
| Reel Diameter   | 7"   | 13"  |
| Tape Width      | 16mm |      |
| Tape Pitch      | 4mm  |      |
| # of Parts/Reel | 1000 | 5000 |



## Recommended Land Patterns

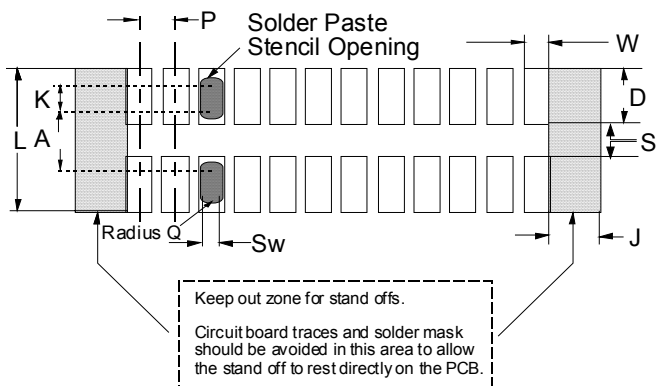
### Single Row Termination



| Recommended Land Pattern |      |       |      |       |       |      |
|--------------------------|------|-------|------|-------|-------|------|
| mm/in.                   | D    | P     | L    | W     | J     | S    |
| 753                      | 1.27 | 0.64  | 3.05 | 0.43  | 0.89  | 0.51 |
|                          | 0.05 | 0.025 | 0.12 | 0.017 | 0.035 | 0.02 |

| SRT Solder Paste Stencil Opening |       |       |    |       |
|----------------------------------|-------|-------|----|-------|
| mm/in.                           | K     | Sw    | A  | Q     |
| 4 mil 753                        | 2.75  | 0.3   | NA | 0.15  |
|                                  | 0.108 | 0.012 |    | 0.006 |
| 6 mil 753                        | 1.72  | 0.3   | NA | 0.15  |
|                                  | 0.068 | 0.012 |    | 0.006 |

### Dual Row Termination



| DRT Solder Paste Stencil Opening |       |       |       |       |
|----------------------------------|-------|-------|-------|-------|
| mm/in.                           | K     | Sw    | A     | Q     |
| 4 mil 753                        | 0.51  | 0.3   | 1.32  | 0.15  |
|                                  | 0.02  | 0.012 | 0.052 | 0.006 |
| 6 mil 753                        | 0.28  | 0.3   | 1.47  | 0.15  |
|                                  | 0.011 | 0.012 | 0.058 | 0.006 |