

# SMT & THROUGH-HOLE BOARD STACKERS

(2.00 mm) .0787" PITCH • TW SERIES

| CLT or MMS | SQT     |
|------------|---------|
| 8          | 4       |
| G b p s    | G b p s |



## TW

### Board Mates:

CLT, SQT, SQW, ESQT,  
TLE, SMM, MMS

### Cable Mates:

TCSD

## SPECIFICATIONS

### Insulator Material:

Black Liquid Crystal Polymer  
**Terminal Material:**  
Phosphor Bronze

### Plating:

Sn or Au over  
50  $\mu$ " (1.27  $\mu$ m) Ni

### Current Rating:

TW-SM = 4.9 A per pin  
(2 pins powered)  
TW-TH = 5.2 A per pin  
(2 pins powered)

### Operating Temp Range:

-55 °C to +105 °C with Tin;  
-55 °C to +125 °C with Gold

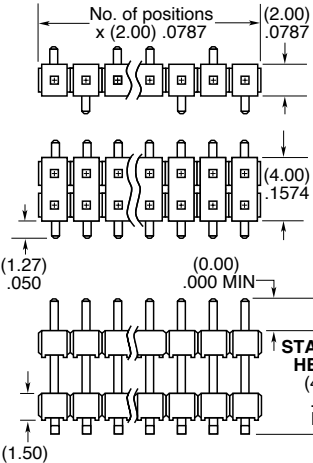
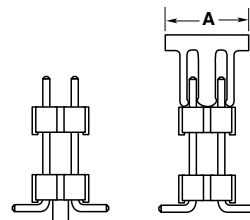
## PROCESSING

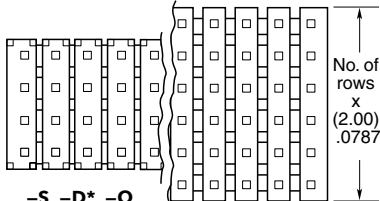
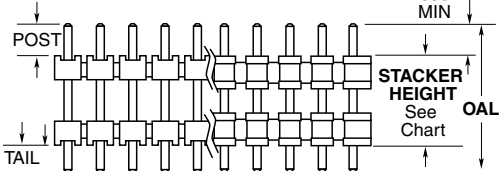
### Lead-Free Solderable:

Yes

### SMT Lead Coplanarity:

(0.15 mm) .006" max\*  
\*(.004" stencil solution  
may be available; contact  
ipg@samtec.com)

| TW                                                                                 | NO. PINS PER ROW | LEAD STYLE                                                                                                                                                                                                                                                                                                        | PLATING OPTION                                                                                                                        | ROW OPTION                                   | STACKER HEIGHT                                                                                          | SM  | OTHER OPTION                                                                                                                                                                                                                                                                                                                                                                                                                                                           |     |              |     |              |     |              |     |              |     |             |                                                                                                                                       |  |            |   |    |             |    |             |                                                                                      |  |
|------------------------------------------------------------------------------------|------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------|---------------------------------------------------------------------------------------------------------|-----|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----|--------------|-----|--------------|-----|--------------|-----|--------------|-----|-------------|---------------------------------------------------------------------------------------------------------------------------------------|--|------------|---|----|-------------|----|-------------|--------------------------------------------------------------------------------------|--|
|                                                                                    | 02 thru 36       | Specify LEAD STYLE from chart                                                                                                                                                                                                                                                                                     | -F<br>= Gold flash on post, Matte Tin on tail<br><br>-L<br>= 10 μ" (0.25 μm) Gold on post, Matte Tin on tail<br><br>-T<br>= Matte Tin | -S<br>= Single Row<br><br>-D<br>= Double Row | - "XXX"<br>= Stacker Height in inches (0.13 mm) .005" increments<br><br>Example: -250 = (6.35 mm) .250" |     | - "XXX"<br>= Polarized Position<br><br>-A<br>= Alignment Pin (Metal or plastic at Samtec discretion) (4.83 mm) .190" min. board space (-D only)<br><br>-P<br>= Pick & Place Pad (1.91 mm) .075" min. post height (04-36 only)<br><br>- "X"R<br>Specify "T" for Tape & Reel<br>Specify "F" for Full Reel Tape & Reel (must order max. quantity per reel; contact Samtec for quantity breaks)<br>(-07 lead style N/A)<br>(-06 lead style with -P option N/A as standard) |     |              |     |              |     |              |     |              |     |             |                                                                                                                                       |  |            |   |    |             |    |             |                                                                                      |  |
|  |                  | <table><tr><th>LEAD STYLE</th><th>OAL</th></tr><tr><td>-02</td><td>(7.85) .309</td></tr><tr><td>-03</td><td>(11.86) .467</td></tr><tr><td>-04</td><td>(12.37) .487</td></tr><tr><td>-06</td><td>(15.37) .605</td></tr><tr><td>-07</td><td>(17.35) .683</td></tr><tr><td>-09</td><td>(9.86) .388</td></tr></table> |                                                                                                                                       | LEAD STYLE                                   | OAL                                                                                                     | -02 | (7.85) .309                                                                                                                                                                                                                                                                                                                                                                                                                                                            | -03 | (11.86) .467 | -04 | (12.37) .487 | -06 | (15.37) .605 | -07 | (17.35) .683 | -09 | (9.86) .388 | <table><tr><th>ROW OPTION</th><th>A</th></tr><tr><td>-S</td><td>(5.08) .200</td></tr><tr><td>-D</td><td>(6.35) .250</td></tr></table> |  | ROW OPTION | A | -S | (5.08) .200 | -D | (6.35) .250 |  |  |
| LEAD STYLE                                                                         | OAL              |                                                                                                                                                                                                                                                                                                                   |                                                                                                                                       |                                              |                                                                                                         |     |                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |     |              |     |              |     |              |     |              |     |             |                                                                                                                                       |  |            |   |    |             |    |             |                                                                                      |  |
| -02                                                                                | (7.85) .309      |                                                                                                                                                                                                                                                                                                                   |                                                                                                                                       |                                              |                                                                                                         |     |                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |     |              |     |              |     |              |     |              |     |             |                                                                                                                                       |  |            |   |    |             |    |             |                                                                                      |  |
| -03                                                                                | (11.86) .467     |                                                                                                                                                                                                                                                                                                                   |                                                                                                                                       |                                              |                                                                                                         |     |                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |     |              |     |              |     |              |     |              |     |             |                                                                                                                                       |  |            |   |    |             |    |             |                                                                                      |  |
| -04                                                                                | (12.37) .487     |                                                                                                                                                                                                                                                                                                                   |                                                                                                                                       |                                              |                                                                                                         |     |                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |     |              |     |              |     |              |     |              |     |             |                                                                                                                                       |  |            |   |    |             |    |             |                                                                                      |  |
| -06                                                                                | (15.37) .605     |                                                                                                                                                                                                                                                                                                                   |                                                                                                                                       |                                              |                                                                                                         |     |                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |     |              |     |              |     |              |     |              |     |             |                                                                                                                                       |  |            |   |    |             |    |             |                                                                                      |  |
| -07                                                                                | (17.35) .683     |                                                                                                                                                                                                                                                                                                                   |                                                                                                                                       |                                              |                                                                                                         |     |                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |     |              |     |              |     |              |     |              |     |             |                                                                                                                                       |  |            |   |    |             |    |             |                                                                                      |  |
| -09                                                                                | (9.86) .388      |                                                                                                                                                                                                                                                                                                                   |                                                                                                                                       |                                              |                                                                                                         |     |                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |     |              |     |              |     |              |     |              |     |             |                                                                                                                                       |  |            |   |    |             |    |             |                                                                                      |  |
| ROW OPTION                                                                         | A                |                                                                                                                                                                                                                                                                                                                   |                                                                                                                                       |                                              |                                                                                                         |     |                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |     |              |     |              |     |              |     |              |     |             |                                                                                                                                       |  |            |   |    |             |    |             |                                                                                      |  |
| -S                                                                                 | (5.08) .200      |                                                                                                                                                                                                                                                                                                                   |                                                                                                                                       |                                              |                                                                                                         |     |                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |     |              |     |              |     |              |     |              |     |             |                                                                                                                                       |  |            |   |    |             |    |             |                                                                                      |  |
| -D                                                                                 | (6.35) .250      |                                                                                                                                                                                                                                                                                                                   |                                                                                                                                       |                                              |                                                                                                         |     |                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |     |              |     |              |     |              |     |              |     |             |                                                                                                                                       |  |            |   |    |             |    |             |                                                                                      |  |

| TW                                                                                  | NO. PINS PER ROW | LEAD STYLE                                                                                                                                                                                                | PLATING OPTION                                                                                                                                  | ROW OPTION                                                                                                                                                 | STACKER HEIGHT                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | TAIL SPEC   |                 |            |                 |                                                                                      |             |     |              |     |              |     |              |     |              |     |              |      |              |     |              |     |              |     |              |      |               |                                                                                                                                                                                           |
|-------------------------------------------------------------------------------------|------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------|-----------------|------------|-----------------|--------------------------------------------------------------------------------------|-------------|-----|--------------|-----|--------------|-----|--------------|-----|--------------|-----|--------------|------|--------------|-----|--------------|-----|--------------|-----|--------------|------|---------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|                                                                                     | 02 thru 50       | Specify LEAD STYLE from chart                                                                                                                                                                             | <p>-F<br/>= Gold flash on post, Matte Tin on tail</p> <p>-L<br/>= 10 μ" (0.25 μm) Gold on post, Matte Tin on tail</p> <p>-T<br/>= Matte Tin</p> | <p>-S<br/>= Single Row</p> <p>-D<br/>= Double Row</p> <p>-T<br/>= Triple Row</p> <p>-Q<br/>= Four Row</p> <p>-5<br/>= Five Row</p> <p>-6<br/>= Six Row</p> | <p>- "XXX"<br/>= Stacker Height in inches (0.13 mm) .005" increments</p> <p>Example: -250<br/>= (6.35 mm) .250"</p> <table><thead><tr><th>LEAD STYLE</th><th>OAL</th></tr></thead><tbody><tr><td>-01</td><td>(8.20) .323</td></tr><tr><td>-02</td><td>(9.60) .377</td></tr><tr><td>-03</td><td>(13.60) .535</td></tr><tr><td>-04</td><td>(14.10) .555</td></tr><tr><td>-05</td><td>(15.10) .594</td></tr><tr><td>-06</td><td>(17.10) .673</td></tr><tr><td>-07</td><td>(19.10) .751</td></tr><tr><td>-08*</td><td>(21.10) .830</td></tr><tr><td>-09</td><td>(11.60) .456</td></tr><tr><td>-10</td><td>(15.60) .614</td></tr><tr><td>-11</td><td>(10.08) .397</td></tr><tr><td>-12*</td><td>(28.19) 1.110</td></tr></tbody></table> | LEAD STYLE  | OAL             | -01        | (8.20) .323     | -02                                                                                  | (9.60) .377 | -03 | (13.60) .535 | -04 | (14.10) .555 | -05 | (15.10) .594 | -06 | (17.10) .673 | -07 | (19.10) .751 | -08* | (21.10) .830 | -09 | (11.60) .456 | -10 | (15.60) .614 | -11 | (10.08) .397 | -12* | (28.19) 1.110 | <p>- "XXX"<br/>= Tail Length in inches (0.13 mm) .005" increments</p> <p>Example: -150<br/>= (3.81 mm) .150"</p> <p>- "XXX"<br/>= Polarized Position (Specify position to be removed)</p> |
| LEAD STYLE                                                                          | OAL              |                                                                                                                                                                                                           |                                                                                                                                                 |                                                                                                                                                            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |             |                 |            |                 |                                                                                      |             |     |              |     |              |     |              |     |              |     |              |      |              |     |              |     |              |     |              |      |               |                                                                                                                                                                                           |
| -01                                                                                 | (8.20) .323      |                                                                                                                                                                                                           |                                                                                                                                                 |                                                                                                                                                            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |             |                 |            |                 |                                                                                      |             |     |              |     |              |     |              |     |              |     |              |      |              |     |              |     |              |     |              |      |               |                                                                                                                                                                                           |
| -02                                                                                 | (9.60) .377      |                                                                                                                                                                                                           |                                                                                                                                                 |                                                                                                                                                            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |             |                 |            |                 |                                                                                      |             |     |              |     |              |     |              |     |              |     |              |      |              |     |              |     |              |     |              |      |               |                                                                                                                                                                                           |
| -03                                                                                 | (13.60) .535     |                                                                                                                                                                                                           |                                                                                                                                                 |                                                                                                                                                            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |             |                 |            |                 |                                                                                      |             |     |              |     |              |     |              |     |              |     |              |      |              |     |              |     |              |     |              |      |               |                                                                                                                                                                                           |
| -04                                                                                 | (14.10) .555     |                                                                                                                                                                                                           |                                                                                                                                                 |                                                                                                                                                            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |             |                 |            |                 |                                                                                      |             |     |              |     |              |     |              |     |              |     |              |      |              |     |              |     |              |     |              |      |               |                                                                                                                                                                                           |
| -05                                                                                 | (15.10) .594     |                                                                                                                                                                                                           |                                                                                                                                                 |                                                                                                                                                            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |             |                 |            |                 |                                                                                      |             |     |              |     |              |     |              |     |              |     |              |      |              |     |              |     |              |     |              |      |               |                                                                                                                                                                                           |
| -06                                                                                 | (17.10) .673     |                                                                                                                                                                                                           |                                                                                                                                                 |                                                                                                                                                            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |             |                 |            |                 |                                                                                      |             |     |              |     |              |     |              |     |              |     |              |      |              |     |              |     |              |     |              |      |               |                                                                                                                                                                                           |
| -07                                                                                 | (19.10) .751     |                                                                                                                                                                                                           |                                                                                                                                                 |                                                                                                                                                            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |             |                 |            |                 |                                                                                      |             |     |              |     |              |     |              |     |              |     |              |      |              |     |              |     |              |     |              |      |               |                                                                                                                                                                                           |
| -08*                                                                                | (21.10) .830     |                                                                                                                                                                                                           |                                                                                                                                                 |                                                                                                                                                            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |             |                 |            |                 |                                                                                      |             |     |              |     |              |     |              |     |              |     |              |      |              |     |              |     |              |     |              |      |               |                                                                                                                                                                                           |
| -09                                                                                 | (11.60) .456     |                                                                                                                                                                                                           |                                                                                                                                                 |                                                                                                                                                            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |             |                 |            |                 |                                                                                      |             |     |              |     |              |     |              |     |              |     |              |      |              |     |              |     |              |     |              |      |               |                                                                                                                                                                                           |
| -10                                                                                 | (15.60) .614     |                                                                                                                                                                                                           |                                                                                                                                                 |                                                                                                                                                            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |             |                 |            |                 |                                                                                      |             |     |              |     |              |     |              |     |              |     |              |      |              |     |              |     |              |     |              |      |               |                                                                                                                                                                                           |
| -11                                                                                 | (10.08) .397     |                                                                                                                                                                                                           |                                                                                                                                                 |                                                                                                                                                            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |             |                 |            |                 |                                                                                      |             |     |              |     |              |     |              |     |              |     |              |      |              |     |              |     |              |     |              |      |               |                                                                                                                                                                                           |
| -12*                                                                                | (28.19) 1.110    |                                                                                                                                                                                                           |                                                                                                                                                 |                                                                                                                                                            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |             |                 |            |                 |                                                                                      |             |     |              |     |              |     |              |     |              |     |              |      |              |     |              |     |              |     |              |      |               |                                                                                                                                                                                           |
|  |                  | <p>-S, -D*, -Q</p> <p>-T, -5, -6</p>                                                                                                                                                                      |                                                                                                                                                 |                                                                                                                                                            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |             |                 |            |                 |                                                                                      |             |     |              |     |              |     |              |     |              |     |              |      |              |     |              |     |              |     |              |      |               |                                                                                                                                                                                           |
|  |                  | <p>-S, -D*, -Q</p> <p>-T, -5, -6</p>                                                                                                                                                                      |                                                                                                                                                 |                                                                                                                                                            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |             |                 |            |                 |                                                                                      |             |     |              |     |              |     |              |     |              |     |              |      |              |     |              |     |              |     |              |      |               |                                                                                                                                                                                           |
|                                                                                     |                  | <table><thead><tr><th>ROW OPTION</th><th>STACKER HEIGHT</th></tr></thead><tbody><tr><td>-S, -D*, -Q</td><td>(3.05) .120 MIN</td></tr><tr><td>-T, -5, -6</td><td>(4.06) .160 MIN</td></tr></tbody></table> |                                                                                                                                                 | ROW OPTION                                                                                                                                                 | STACKER HEIGHT                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | -S, -D*, -Q | (3.05) .120 MIN | -T, -5, -6 | (4.06) .160 MIN | <p>*-D with stacker height greater than (4.06 mm) .160" will not have standoffs.</p> |             |     |              |     |              |     |              |     |              |     |              |      |              |     |              |     |              |     |              |      |               |                                                                                                                                                                                           |
| ROW OPTION                                                                          | STACKER HEIGHT   |                                                                                                                                                                                                           |                                                                                                                                                 |                                                                                                                                                            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |             |                 |            |                 |                                                                                      |             |     |              |     |              |     |              |     |              |     |              |      |              |     |              |     |              |     |              |      |               |                                                                                                                                                                                           |
| -S, -D*, -Q                                                                         | (3.05) .120 MIN  |                                                                                                                                                                                                           |                                                                                                                                                 |                                                                                                                                                            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |             |                 |            |                 |                                                                                      |             |     |              |     |              |     |              |     |              |     |              |      |              |     |              |     |              |     |              |      |               |                                                                                                                                                                                           |
| -T, -5, -6                                                                          | (4.06) .160 MIN  |                                                                                                                                                                                                           |                                                                                                                                                 |                                                                                                                                                            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |             |                 |            |                 |                                                                                      |             |     |              |     |              |     |              |     |              |     |              |      |              |     |              |     |              |     |              |      |               |                                                                                                                                                                                           |
|                                                                                     |                  | <p>*Style -08 &amp; -12 = S &amp; D only</p>                                                                                                                                                              |                                                                                                                                                 |                                                                                                                                                            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |             |                 |            |                 |                                                                                      |             |     |              |     |              |     |              |     |              |     |              |      |              |     |              |     |              |     |              |      |               |                                                                                                                                                                                           |

## Notes:

For added mechanical stability, Samtec recommends mechanical board spacers be used in applications with gold or selective gold plated connectors. Contact ipg@samtec.com for more information.

This Series is non-standard, non-returnable.