



# Single Digit LED Displays BS-A/C, BF-U Series

7-segment,  $\pm 1$  overflow

| Digit Size                 | Part No.     |                      | Chip                   |                                   | Absolute Maximum Ratings |         |         |          | Electro-optical Data(At 10mA) |      |                         | Drawing No. |
|----------------------------|--------------|----------------------|------------------------|-----------------------------------|--------------------------|---------|---------|----------|-------------------------------|------|-------------------------|-------------|
|                            | Common Anode | Common Cathode       | Material/Emitted Color | Peak Wave Length $\lambda_p$ (nm) | $\Delta \lambda$ (nm)    | Pd (mw) | If (mA) | Ifp (mA) | Vf (v)                        |      | Iv. Typ. Per.Seg. (mcd) |             |
|                            |              |                      |                        |                                   |                          |         |         |          | Typ.                          | Max. |                         |             |
| 0.28" Single Digit         | BS-A281ND    | BS-C281ND            | GaAsP/Red              | 655                               | 40                       | 80      | 40      | 200      | 1.7                           | 2.0  | 0.6                     | SD-01       |
|                            | BS-A285ND    | BS-C285ND            | GaP/ Bright Red        | 700                               | 90                       | 40      | 15      | 50       | 2.2                           | 2.5  | 1.2                     |             |
|                            | BS-A285NE    | BS-C285NE            |                        |                                   |                          |         |         |          |                               |      |                         |             |
|                            | BS-A282ND    | BS-C282ND            | GaP/ Green             | 568                               | 30                       | 80      | 30      | 150      | 2.2                           | 2.5  | 2.8                     |             |
|                            | BS-A283ND    | BS-C283ND            | GaAsP/GaP/ Yellow      | 585                               | 35                       | 80      | 30      | 150      | 2.1                           | 2.5  | 2.2                     |             |
|                            | BS-A284ND    | BS-C284ND            | GaAsP/GaP/ Hi-Eff.Red  | 635                               | 45                       | 80      | 30      | 150      | 2.0                           | 2.5  | 2.8                     |             |
|                            |              | GaAsP/GaP/ Orange    |                        |                                   |                          |         |         |          |                               |      |                         |             |
|                            | BS-A286ND    | BS-C286ND            | GaAlAs/ SH Super Red   | 660                               | 20                       | 80      | 30      | 150      | 1.7                           | 2.5  | 5.0                     |             |
|                            | BS-A28DND    | BS-C28DND            | GaAlAs/ DH Super Red   | 660                               | 20                       | 80      | 30      | 150      | 1.7                           | 2.5  | 6.0                     |             |
|                            | BS-A281RD-A  | BS-C281RD-A          | GaAsP/Red              | 655                               | 40                       | 80      | 40      | 200      | 1.7                           | 2.0  | 0.6                     | SD-02       |
|                            | BS-A285RD-A  | BS-C285RD-A          | GaP/ Bright Red        | 700                               | 90                       | 40      | 15      | 50       | 2.2                           | 2.5  | 1.2                     |             |
|                            | BS-A285RE-A  | BS-C285RE-A          |                        |                                   |                          |         |         |          |                               |      |                         |             |
|                            | BS-A282RD-A  | BS-C282RD-A          | GaP/ Green             | 568                               | 30                       | 80      | 30      | 150      | 2.2                           | 2.5  | 2.8                     |             |
|                            | BS-A283RD-A  | BS-C283RD-A          | GaAsP/GaP/ Yellow      | 585                               | 35                       | 80      | 30      | 150      | 2.1                           | 2.5  | 2.2                     |             |
|                            | BS-A284RD-A  | BS-C284RD-A          | GaAsP/GaP/ Hi-Eff.Red  | 635                               | 45                       | 80      | 30      | 150      | 2.0                           | 2.5  | 2.8                     |             |
|                            |              | GaAsP/GaP/ Orange    |                        |                                   |                          |         |         |          |                               |      |                         |             |
|                            | BS-A286RD-A  | BS-C286RD-A          | GaAlAs/ SH Super Red   | 660                               | 20                       | 80      | 30      | 150      | 1.7                           | 2.5  | 5.0                     |             |
|                            | BS-A28DRD-A  | BS-C28DRD-A          | GaAlAs/ DH Super Red   | 660                               | 20                       | 80      | 30      | 150      | 1.7                           | 2.5  | 6.0                     |             |
|                            | BS-A281RD-B  | BS-C281RD-B          | GaAsP/Red              | 655                               | 40                       | 80      | 40      | 200      | 1.7                           | 2.0  | 0.6                     | SD-03       |
|                            | BS-A285RD-B  | BS-C285RD-B          | GaP/ Bright Red        | 700                               | 90                       | 40      | 15      | 50       | 2.2                           | 2.5  | 1.2                     |             |
|                            | BS-A285RE-B  | BS-C285RE-B          |                        |                                   |                          |         |         |          |                               |      |                         |             |
|                            | BS-A282RD-B  | BS-C282RD-B          | GaP/ Green             | 568                               | 30                       | 80      | 30      | 150      | 2.2                           | 2.5  | 2.8                     |             |
|                            | BS-A283RD-B  | BS-C283RD-B          | GaAsP/GaP/ Yellow      | 585                               | 35                       | 80      | 30      | 150      | 2.1                           | 2.5  | 2.2                     |             |
|                            | BS-A284RD-B  | BS-C284RD-B          | GaAsP/GaP/ Hi-Eff.Red  | 635                               | 45                       | 80      | 30      | 150      | 2.0                           | 2.5  | 2.8                     |             |
|                            |              | GaAsP/GaP/ Orange    |                        |                                   |                          |         |         |          |                               |      |                         |             |
|                            | BS-A286RD-B  | BS-C286RD-B          | GaAlAs/ SH Super Red   | 660                               | 20                       | 80      | 30      | 150      | 1.7                           | 2.5  | 5.0                     |             |
|                            | BS-A28DRD-B  | BS-C28DRD-B          | GaAlAs/ DH Super Red   | 660                               | 20                       | 80      | 30      | 150      | 1.7                           | 2.5  | 6.0                     |             |
| 0.3" Single- Digit         | BS-A301RD    | BS-C301RD            | GaAsP/Red              | 655                               | 40                       | 80      | 40      | 200      | 1.7                           | 2.0  | 0.6                     | SD-04       |
|                            | BS-A305RD    | BS-C305RD            | GaP/ Bright Red        | 700                               | 90                       | 40      | 15      | 50       | 2.2                           | 2.5  | 1.2                     |             |
|                            | BS-A305RE    | BS-C305RE            |                        |                                   |                          |         |         |          |                               |      |                         |             |
|                            | BS-A302RD    | BS-C302RD            | GaP/ Green             | 568                               | 30                       | 80      | 30      | 150      | 2.2                           | 2.5  | 3.0                     |             |
|                            | BS-A303RD    | BS-C303RD            | GaAsP/GaP/ Yellow      | 585                               | 35                       | 80      | 30      | 150      | 2.1                           | 2.5  | 2.0                     |             |
|                            | BS-A304RD    | BS-C304RD            | GaAsP/GaP/ Hi-Eff.Red  | 635                               | 45                       | 80      | 30      | 150      | 2.0                           | 2.5  | 3.0                     |             |
|                            |              | GaAsP/GaP/ Orange    |                        |                                   |                          |         |         |          |                               |      |                         |             |
|                            | BS-A306RD    | BS-C306RD            | GaAlAs/ SH Super Red   | 660                               | 20                       | 80      | 30      | 150      | 1.7                           | 2.5  | 6.0                     |             |
|                            | BS-A30DRD    | BS-C30DRD            | GaAlAs/ DH Super Red   | 660                               | 20                       | 80      | 30      | 150      | 1.7                           | 2.5  | 7.0                     |             |
|                            | BS-A301RD-A  | BS-C301RD-A          | GaAsP/Red              | 655                               | 40                       | 80      | 40      | 200      | 1.7                           | 2.0  | 0.6                     | SD-05       |
|                            | BS-A305RD-A  | BS-C305RD-A          | GaP/ Bright Red        | 700                               | 90                       | 40      | 15      | 50       | 2.2                           | 2.5  | 1.2                     |             |
|                            | BS-A305RE-A  | BS-C305RE-A          |                        |                                   |                          |         |         |          |                               |      |                         |             |
|                            | BS-A302RD-A  | BS-C302RD-A          | GaP/ Green             | 568                               | 30                       | 80      | 30      | 150      | 2.2                           | 2.5  | 3.0                     |             |
|                            | BS-A303RD-A  | BS-C303RD-A          | GaAsP/GaP/ Yellow      | 585                               | 35                       | 80      | 30      | 150      | 2.1                           | 2.5  | 2.0                     |             |
|                            | BS-A304RD-A  | BS-C304RD-A          | GaAsP/GaP/ Hi-Eff.Red  | 635                               | 45                       | 80      | 30      | 150      | 2.0                           | 2.5  | 3.0                     |             |
|                            |              | GaAsP/GaP/ Orange    |                        |                                   |                          |         |         |          |                               |      |                         |             |
|                            | BS-A306RD-A  | BS-C306RD-A          | GaAlAs/ SH Super Red   | 660                               | 20                       | 80      | 30      | 150      | 1.7                           | 2.5  | 6.0                     |             |
|                            | BS-A30DRD-A  | BS-C30DRD-A          | GaAlAs/ DH Super Red   | 660                               | 20                       | 80      | 30      | 150      | 1.7                           | 2.5  | 7.0                     |             |
| 0.3" Overflow Single-Digit | BF-U301RD    |                      | GaAsP/Red              | 655                               | 40                       | 80      | 40      | 200      | 1.7                           | 2.0  | 0.6                     | SD-06       |
|                            | BF-U305RD    |                      | GaP/ Bright Red        | 700                               | 90                       | 40      | 15      | 50       | 2.2                           | 2.5  | 1.2                     |             |
|                            | BF-U305RE    |                      |                        |                                   |                          |         |         |          |                               |      |                         |             |
|                            | BF-U302RD    |                      | GaP/ Green             | 568                               | 30                       | 80      | 30      | 150      | 2.2                           | 2.5  | 3.0                     |             |
|                            | BF-U303RD    |                      | GaAsP/GaP/ Yellow      | 585                               | 35                       | 80      | 30      | 150      | 2.1                           | 2.5  | 2.0                     |             |
|                            | BF-U304RD    |                      | GaAsP/GaP/ Hi-Eff.Red  | 635                               | 45                       | 80      | 30      | 150      | 2.0                           | 2.5  | 3.0                     |             |
|                            |              | GaAsP/GaP/ Orange    |                        |                                   |                          |         |         |          |                               |      |                         |             |
|                            | BF-U306RD    |                      | GaAlAs/ SH Super Red   | 660                               | 20                       | 80      | 30      | 150      | 1.7                           | 2.5  | 6.0                     |             |
| BF-U30DRD                  |              | GaAlAs/ DH Super Red | 660                    | 20                                | 80                       | 30      | 150     | 1.7      | 2.5                           | 7.0  |                         |             |



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7-segment,  $\pm 1$  overflow

|                                                                                                                                                                                                                                                                                                                                                                                                                                                          |                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <p><b>SD-01</b> <b>BS-A<sub>C</sub>28xND</b></p> <p>Top view dimensions: 4.00(.157) (pin pitch), 8.20(.323) (display width), 7.10(.280) (display height), 9.90(.390) (total height), 0.50(.020) (pin width), 0.25(.010) (pin spacing).</p> <p>Side view dimensions: 6.00(.236) (display height), 3.00(.118)MIN. (pin height), 5.40(.212) (pin pitch).</p> <p>Pinout: A, B, C, D, E, F, G, DP. Pin numbers: 8, 7, 6, 5, 4, 3, 2, 1.</p>                   | <p><b>SD-02</b> <b>BS-A<sub>C</sub>28xRD-A</b></p> <p>Top view dimensions: 4.00(.157) (pin pitch), 8.20(.323) (display width), 7.10(.280) (display height), 9.90(.390) (total height), 0.50(.020) (pin width), 0.25(.010) (pin spacing).</p> <p>Side view dimensions: 6.10(.240) (display height), 3.00(.118)MIN. (pin height), 1.27(.05)x4=5.08(.20) (pin pitch).</p> <p>Pinout: A, B, C, D, E, F, G, DP. Pin numbers: 7, 6, 4, 2, 1, 10, 9, 5.</p> |
| <p><b>SD-03</b> <b>BS-A<sub>C</sub>28xRD-B</b></p> <p>Top view dimensions: 4.85(.191) (pin pitch), 7.40(.291) (display width), 7.00(.276) (display height), 10.00(.394) (total height), 0.50(.0196) (pin width), 0.30(.012) (pin spacing).</p> <p>Side view dimensions: 6.10(.240) (display height), 3.5 ± 0.5(.1383.5 ± 0.2)MIN. (pin height), 5.08(.20) (pin pitch).</p> <p>Pinout: A, B, C, D, E, F, G, DP. Pin numbers: 7, 6, 4, 2, 1, 10, 9, 5.</p> | <p><b>SD-04</b> <b>BS-A<sub>C</sub>30xRD</b></p> <p>Top view dimensions: 5.20(.205) (pin pitch), 10.10(.394) (display width), 7.62(.300) (display height), 19.00(.748) (total height), 0.50(.020) (pin width), 0.30(.012) (pin spacing).</p> <p>Side view dimensions: 6.10(.240) (display height), 3.00(.118)MIN. (pin height), 7.62(.300) (pin pitch).</p> <p>Pinout: A, B, C, D, E, F, G, DP. Pin numbers: 6, 1, 13, 10, 8, 7, 2, 11, 9.</p>       |
| <p><b>SD-05</b> <b>BS-A<sub>C</sub>30xRD-A</b></p> <p>Top view dimensions: 5.10(.201) (pin pitch), 10.10(.394) (display width), 7.62(.300) (display height), 19.00(.748) (total height), 0.50(.020) (pin width), 0.30(.012) (pin spacing).</p> <p>Side view dimensions: 6.10(.240) (display height), 3.00(.118)MIN. (pin height), 7.62(.300) (pin pitch).</p> <p>Pinout: A, B, C, D, E, F, G, DP. Pin numbers: 6, 1, 13, 10, 8, 7, 2, 11, 9.</p>         | <p><b>SD-06</b> <b>BF-U30xRD</b></p> <p>Top view dimensions: 5.10(.201) (pin pitch), 10.10(.394) (display width), 7.62(.300) (display height), 19.00(.748) (total height), 0.50(.020) (pin width), 0.30(.012) (pin spacing).</p> <p>Side view dimensions: 6.10(.240) (display height), 3.00(.118)MIN. (pin height), 7.62(.300) (pin pitch).</p> <p>Pinout: A, B, C, D, E, F, G, DP. Pin numbers: 13, 14, 7, 1, 6, 8, 12, 11, 4, 3, 5, 10.</p>        |

NOTES: 1.All Dimensions are in millimeters(inches).  
3.Specifications are subject to change without notice.

2.Tolerance is  $\pm 0.25\text{mm}(.010")$ .  
4.NP:No Pin. 5.NC:No Connect.

**AMERICAN BRIGHT**