

Catalog: 1654001 Issue Date: 06.2011

### 3-phase Delta External Power Line Filter for Frequency Converters

# **FCD Series**



**UL Recognized** 

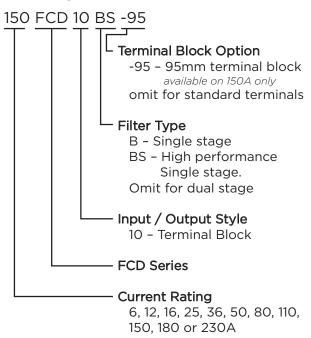
大豪电子 电话:0775-83233025 http://www.szdahao.com http://www.very-tec.com



#### **FCD Series**

- Suitable to meet the latest EMC standards
- · Insulated safety terminals
- Suitable for EMC troubleshooting in the field
- Very high attenuation
- High insertion loss
- BS models optimized for very high insertion loss
- BS models suitable for infeed/regenerative (ER) applications
- Touch safe terminals provide easy connections and prevent inadvertent contact for safety in the most demanding applications

# **Ordering Information**



# **Specifications**

# Maximum leakage current voltage drop to virtual N to PE/V:

| 6FCD10:           | .26 mA/V  |
|-------------------|-----------|
| 12 & 16FCD10:     | .45 mA/V  |
| 25, 36 & 50FCD10: | .52 mA/V  |
| 12 & 16FCD10B:    | .46 mA/V  |
| 25& 36FCD10B:     | .52 mA/V  |
| 50FCD10B:         | .57 mA/V  |
| 80 & 110FCD10B:   | .62 mA/V  |
| 150FCD10B:        | .63 mA/V  |
| 180 & 230FCD10B:  | .92 mA/V  |
| FCD10BS:          | 3.25 mA/V |

### Hipot rating (one minute):

Line to Ground: 2250 VDC Line to Line: 1450 VDC

#### Rated Voltage (max):

Phase to Phase: 480 VAC
Phase to Neutral / Ground: 277 VAC

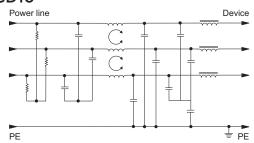
Operating Frequency: 50/60 Hz

Rated Current: 6 to 230A

#### **Operating Ambient Temperature Range**

(at rated current I<sub>r</sub>): -10°C to +40°C In an ambient temperature (T<sub>a</sub>) higher than +40°C the maximum operating current (I<sub>O</sub>) is calculated as follows: I<sub>O</sub> = I<sub>r</sub>  $\sqrt{(85-\text{Ta})/45}$ 

# **Electrical Schematics** 6FCD10



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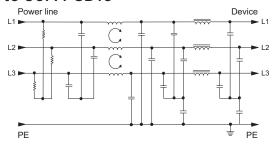


**3-phase Delta External Filter for Frequency Converters** (continued)

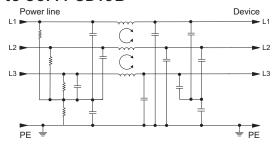
# **FCD Series**

# **Electrical Schematics** (continued)

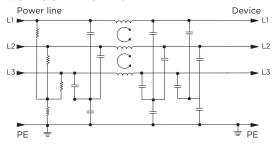
### 12 to 50A FCD10



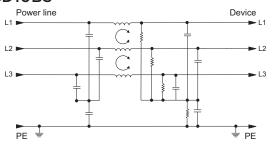
# 12 to 50A FCD10B



# 80 to 230A FCD10B



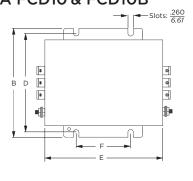
### FCD10BS



### **Available Part Numbers**

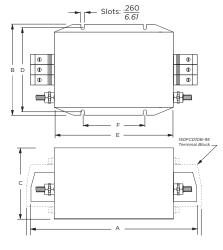
| 6FCD10  | 12FCD10B     | 50FCD10BS     |
|---------|--------------|---------------|
| 12FCD10 | 16FCD10B     | 80FCD10BS     |
| 16FCD10 | 25FCD10B     | 110FCD10BS    |
| 25FCD10 | 36FCD10B     | 150FCD10BS    |
| 36FCD10 | 50FCD10B     | 150FCD10BS-95 |
| 50FCD10 | 80FCD10B     | 180FCD10BS    |
|         | 110FCD10B    | 230FCD10BS    |
|         | 150FCD10B    |               |
|         | 150FCD10B-95 |               |
|         | 180FCD10B    |               |
|         | 230FCD10B    |               |

# Case Styles 6 to 50A FCD10 & FCD10B





# 80 to 150A FCD10B 50 to 150A FCD10BS



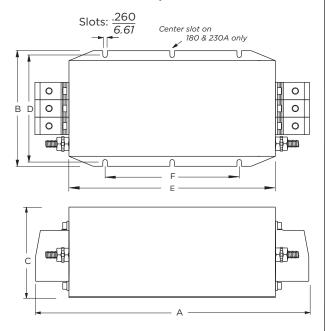


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# **3-phase Delta External Filter for Frequency Converters** (continued)

# **FCD Series**

# Case Styles (continued) 180 to 230FCD10B\BS



# **Terminals**

| Part No.                     | Terminal  | Size                    | Torque max.<br>lbf-in [N-m] |
|------------------------------|-----------|-------------------------|-----------------------------|
|                              | Ground    | 8-32                    | 20.7 [ <i>2.34</i> ]        |
| 6FCD10                       | Line/Load | 4mm²<br>terminal block  | 7.08 [0.8]                  |
| 12FCD10/10B                  | Ground    | M5                      | 26.58 [ <i>3.0</i> ]        |
| 16FCD10/10B                  | Line/Load | 4mm²<br>terminal block  | 7.08 [0.8]                  |
| 25FCD10/10B                  | Ground    | M5                      | 26.58 [ <i>3.0</i> ]        |
| 36FCD10/10B                  | Line/Load | 6mm²<br>terminal block  | 15.93 [ <i>1.8</i> ]        |
| 5050010/100                  | Ground    | M5                      | 26.58 [ <i>3.0</i> ]        |
| 50FCD10/10B                  | Line/Load | 10mm²<br>terminal block | 15.93 [ <i>1.8</i> ]        |
|                              | Ground    | M10                     | 88.5 [ <i>10.0</i> ]        |
| 50FCD10BS                    | Line/Load | 16mm²<br>terminal block | 20.36 [ <i>2.3</i> ]        |
| 80 to 150FCD10B              | Ground    | M10                     | 88.5 [ <i>10.0</i> ]        |
| 80 to 150FCD10BS             | Line/Load | 50mm²<br>terminal block | 70.80 [ <i>8.0</i> ]        |
| 150FCD10B/BS-95              | Ground    | M10                     | 88.5 [ <i>10.0</i> ]        |
| 180FCD10B/BS<br>230FCD10B/BS | Line/Load | 95mm²<br>terminal block | 177.0 [20.0]                |

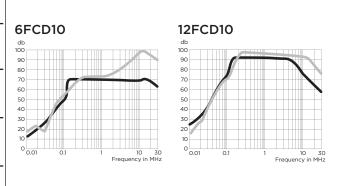
# **Case Dimensions**

| Part No.                     | Α      | В      | С      | D             | Е      | F             |  |
|------------------------------|--------|--------|--------|---------------|--------|---------------|--|
|                              | (max.) | (max.) | (max.) | ± .02<br>± .5 | (max.) | ± .02<br>± .5 |  |
| 6FCD10                       | 6.18   | 4.33   | 2.32   | 3.74          | 5.16   | 2.76          |  |
|                              | 157.0  | 110.0  | 59.0   | 95.0          | 131.0  | 70.0          |  |
| 12FCD10/10B                  | 6.97   | 5.51   | 2.56   | 4.92          | 5.94   | 2.76          |  |
| 16FCD10/10B                  | 177.0  | 140.0  | 65.0   | 125.0         | 151.0  | 70.0          |  |
| 25FCD10/10B                  | 9.69   | 6.26   | 2.52   | 5.71          | 8.43   | 4.53          |  |
| 36FCD10/10B<br>50FCD10/10B   | 246.0  | 159.0  | 64.0   | 145.0         | 214.0  | 115.0         |  |
|                              | 11.41  | 6.61   | 3.54   | 6.10          | 8.70   | 4.53          |  |
| 50FCD10BS                    | 290.0  | 168.0  | 90.0   | 155.0         | 221.0  | 115.0         |  |
| 80FCD10B/BS                  | 12.09  | 6.61   | 5.55   | 6.10          | 8.70   | 4.53          |  |
| 110FCD10B/BS<br>150FCD10B/BS | 307.0  | 168.0  | 141.0  | 155.0         | 221.0  | 115.0         |  |
| 150FCD10B-95                 | 12.6   | 6.61   | 5.55   | 6.10          | 8.70   | 4.53          |  |
| 150FCD10BS-95                | 320.0  | 168.0  | 141.0  | 155.0         | 221.0  | 115.0         |  |
| 180FCD10B/BS                 | 15.71  | 6.61   | 5.55   | 6.10          | 11.81  | 6.50          |  |
| 230FCD10B/BS                 | 399.0  | 168.0  | 141.0  | 155.0         | 300.0  | 165.0         |  |
|                              |        |        |        |               |        |               |  |

# **Performance Data**

# **Typical Insertion Loss**

Measured in closed 50 Ohm system



Common Mode / Asymmetrical (L-G)
Differential Mode / Symmetrical (L-L)

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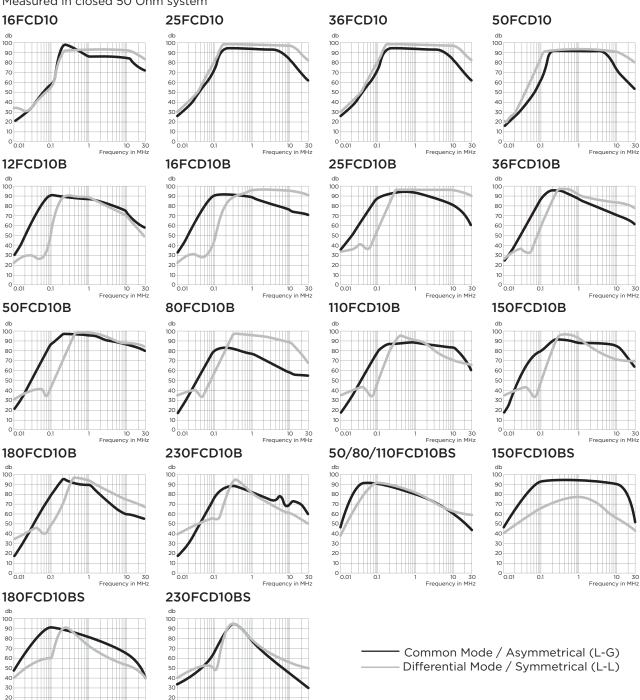
**3-phase Delta External Filter for Frequency Converters** (continued)

# **FCD Series**

## **Performance Data** (continued)

# Typical Insertion Loss (continued)

Measured in closed 50 Ohm system





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### **3-phase Delta External Filter for Frequency Converters** (continued)

# **FCD Series**

Performance Data (continued)

## **Minimum Insertion Loss**

Measured in closed 50 Ohm system



Common Mode / Asymmetrical (Line to Ground)

Differential Mode / Symmetrical (Line to Line)

| .05<br>23<br>36<br>36<br>32<br>32 | .1<br>39<br>45<br>45<br>40   | . <b>5</b> 56 75 75   | 52<br>75<br>75  | <b>5</b> 48 52  | 45<br>45  | <b>30</b>   | -   | Part No.<br>6FCD10  | .01  | .03   | .05  | .1   | .5   | 1   | 5  | 10   | 30  |
|-----------------------------------|--|---|---|---|---|---|---|---|--|---|--|--|--|---|--|--|---|
| 36<br>36<br>32                    | 45<br>45   | 75<br>75  | 75  |   |   | 33  | _   | SECD10  |  |   |  |  |  |   |  |  |   |
| 36<br>32                          | 45   | 75  |   | 52  | 15  |   |   | 000010  | 9  | 8   | 24   | 40   | 62   | 57  | 50   | 48   | 38  |
| 32                                |  |   | 75  |   | 70  | 35  |   | 12 & 16FCD10  | 9  | 13  | 24   | 55   | 75   | 75  | 75   | 65   | 60  |
|                                   | 40   |   | , 0   | 52  | 45  | 35  |   | 25FCD10   | 9  | 13  | 26   | 55   | 75   | 75  | 75   | 65   | 60  |
| 32                                |  | 75  | 75  | 52  | 45  | 35  |   | 36FCD10   | 9  | 13  | 26   | 46   | 75   | 75  | 75   | 65   | 60  |
| 02                                | 40   | 75  | 75  | 52  | 45  | 35  |   | 50FCD10   | 9  | 13  | 26   | 46   | 75   | 75  | 75   | 65   | 60  |
| 59                                | 75   | 73  | 65  | 49  | 47  | 26  |   | 12FCD10B  | 6  | 13  | 9  | 37   | 90   | 86  | 74   | 78   | 34  |
| 59                                | 75   | 73  | 65  | 49  | 47  | 26  |   | 16FCD10B  | 6  | 13  | 9  | 37   | 60   | 86  | 74   | 78   | 34  |
| 60                                | 49   | 83  | 75  | 58  | 56  | 28  |   | 25FCD10B  | 10   | 16  | 12   | 41   | 89   | 87  | 69   | 86   | 43  |
| 52                                | 70   | 77  | 70  | 54  | 50  | 47  |   | 36FCD10B  | 17   | 24  | 24   | 38   | 87   | 81  | 63   | 66   | 24  |
| 49                                | 67   | 76  | 70  | 59  | 58  | 37  |   | 50FCD10B  | 15   | 24  | 27   | 21   | 88   | 74  | 51   | 69   | 52  |
| 49                                | 67   | 74  | 67  | 59  | 58  | 27  |   | 80FCD10B  | 17   | 25  | 28   | 23   | 87   | 71  | 50   | 62   | 45  |
| 49                                | 66   | 72  | 65  | 59  | 58  | 18  |   | 110FCD10B   | 18   | 27  | 30   | 25   | 86   | 69  | 49   | 56   | 39  |
| 50                                | 66   | 69  | 63  | 59  | 58  | 9   |   | 150FCD10B   | 19   | 28  | 31   | 28   | 85   | 66  | 49   | 49   | 32  |
| 50                                | 66   | 67  | 60  | 59  | 58  | -   |   | 180FCD10B   | 21   | 29  | 33   | 30   | 84   | 63  | 48   | 43   | 26  |
| 40                                | 58   | 73  | 66  | 58  | 52  | 21  |   | 230FCD10B   | 22   | 31  | 35   | 36   | 78   | 60  | 46   | 41   | 26  |
| 70                                | 69   | 65  | 60  | 53  | 51  | 24  |   | 50FCD10BS   | 25   | 31  | 26   | 59   | 73   | 64  | 50   | 45   | 19  |
| 67                                | 66   | 63  | 58  | 52  | 49  | 23  |   | 80FCD10BS   | 25   | 31  | 26   | 59   | 73   | 64  | 50   | 45   | 19  |
| 69                                | 69   | 66  | 60  | 53  | 53  | 25  |   | 110FCD10BS  | 24   | 31  |  | 55   | 72   | 65  | 51   |  | 26  |
| 67                                | 67   | 62  | 56  | 48  |   | 16  |   |   |  | 33  |  | 51   |  |   |  |  | 22  |
| 65                                | 65   | 61  | 55  | 47  |   | 16  |   |   |  |   |  |  |  |   |  |  | 22  |
|                                   |  |   |   |   |   |   |   |   |  |   |  |  |  |   |  |  | 22  |
|                                   | 59<br>60<br>52<br>49<br>49<br>50<br>50<br>40<br>70<br>67<br>69<br>67 | 59 75<br>60 49<br>52 70<br>49 67<br>49 66<br>50 66<br>50 66<br>40 58<br>70 69<br>67 66<br>69 69<br>67 67<br>65 65 | 59       75       73         60       49       83         52       70       77         49       67       76         49       67       74         49       66       72         50       66       69         50       66       67         40       58       73         70       69       65         67       66       63         69       69       66         67       67       62         65       65       61 | 59         75         73         65           60         49         83         75           52         70         77         70           49         67         76         70           49         67         74         67           49         66         72         65           50         66         69         63           50         66         67         60           40         58         73         66           70         69         65         60           67         66         63         58           69         69         66         60           67         67         62         56           65         65         61         55 | 59         75         73         65         49           60         49         83         75         58           52         70         77         70         54           49         67         76         70         59           49         67         74         67         59           49         66         72         65         59           50         66         69         63         59           50         66         67         60         59           40         58         73         66         58           70         69         65         60         53           67         66         63         58         52           69         69         66         60         53           67         67         62         56         48           65         65         61         55         47 | 59         75         73         65         49         47           60         49         83         75         58         56           52         70         77         70         54         50           49         67         76         70         59         58           49         67         74         67         59         58           49         66         72         65         59         58           50         66         69         63         59         58           50         66         67         60         59         58           40         58         73         66         58         52           70         69         65         60         53         51           67         66         63         58         52         49           69         69         66         60         53         53           67         67         62         56         48         46           65         65         61         55         47         46 | 59         75         73         65         49         47         26           60         49         83         75         58         56         28           52         70         77         70         54         50         47           49         67         76         70         59         58         37           49         67         74         67         59         58         27           49         66         72         65         59         58         18           50         66         69         63         59         58         9           50         66         67         60         59         58         -           40         58         73         66         58         52         21           70         69         65         60         53         51         24           67         66         63         58         52         49         23           69         69         66         60         53         53         25           67         67         62         56         48         46         < | 59       75       73       65       49       47       26         60       49       83       75       58       56       28         52       70       77       70       54       50       47         49       67       76       70       59       58       37         49       67       74       67       59       58       27         49       66       72       65       59       58       18         50       66       69       63       59       58       9         50       66       67       60       59       58       -         40       58       73       66       58       52       21         70       69       65       60       53       51       24         67       66       63       58       52       49       23         69       69       66       60       53       53       25         67       67       62       56       48       46       16         65       65       61       55       47       46       16 <td>59         75         73         65         49         47         26         16FCD10B           60         49         83         75         58         56         28         25FCD10B           52         70         77         70         54         50         47         36FCD10B           49         67         76         70         59         58         37         50FCD10B           49         67         74         67         59         58         27         80FCD10B           49         66         72         65         59         58         18         110FCD10B           50         66         69         63         59         58         9         150FCD10B           50         66         67         60         59         58         -         180FCD10B           40         58         73         66         58         52         21         230FCD10B           70         69         65         60         53         51         24         50FCD10BS           67         66         63         58         52         49         23         80FCD10BS      &lt;</td> <td>59         75         73         65         49         47         26         16FCD10B         6           60         49         83         75         58         56         28         25FCD10B         10           52         70         77         70         54         50         47         36FCD10B         17           49         67         76         70         59         58         37         50FCD10B         15           49         67         74         67         59         58         27         80FCD10B         17           49         66         72         65         59         58         18         110FCD10B         18           50         66         69         63         59         58         9         150FCD10B         19           50         66         67         60         59         58         -         180FCD10B         21           40         58         73         66         58         52         21         230FCD10B         22           70         69         65         60         53         51         24         50FCD10BS         25</td> <td>59         75         73         65         49         47         26         16FCD10B         6         13           60         49         83         75         58         56         28         25FCD10B         10         16           52         70         77         70         54         50         47         36FCD10B         17         24           49         67         76         70         59         58         37         50FCD10B         15         24           49         67         74         67         59         58         27         80FCD10B         17         25           49         66         72         65         59         58         18         110FCD10B         18         27           50         66         69         63         59         58         9         150FCD10B         19         28           50         66         67         60         59         58         -         180FCD10B         21         29           40         58         73         66         58         52         21         230FCD10B         22         31           &lt;</td> <td>59         75         73         65         49         47         26         16FCD10B         6         13         9           60         49         83         75         58         56         28         25FCD10B         10         16         12           52         70         77         70         54         50         47         36FCD10B         17         24         24           49         67         76         70         59         58         37         50FCD10B         15         24         27           49         67         74         67         59         58         27         80FCD10B         17         25         28           49         66         72         65         59         58         18         110FCD10B         18         27         30           50         66         69         63         59         58         9         150FCD10B         19         28         31           50         66         67         60         59         58         -         180FCD10B         21         29         33           40         58         73         66<!--</td--><td>59         75         73         65         49         47         26         16FCD10B         6         13         9         37           60         49         83         75         58         56         28         25FCD10B         10         16         12         41           52         70         77         70         54         50         47         36FCD10B         17         24         24         38           49         67         76         70         59         58         37         50FCD10B         15         24         27         21           49         67         74         67         59         58         27         80FCD10B         17         25         28         23           49         66         72         65         59         58         18         110FCD10B         18         27         30         25           50         66         69         63         59         58         9         150FCD10B         19         28         31         28           50         66         67         60         59         58         -         180FCD10B         21&lt;</td><td>59         75         73         65         49         47         26         16FCD10B         6         13         9         37         60           60         49         83         75         58         56         28         25FCD10B         10         16         12         41         89           52         70         77         70         54         50         47         36FCD10B         17         24         24         38         87           49         67         76         70         59         58         37         50FCD10B         15         24         27         21         88           49         67         74         67         59         58         27         80FCD10B         17         25         28         23         87           49         66         72         65         59         58         18         110FCD10B         18         27         30         25         86           50         66         69         63         59         58         9         150FCD10B         19         28         31         28         85           50         66</td><td>59         75         73         65         49         47         26         16FCD10B         6         13         9         37         60         86           60         49         83         75         58         56         28         25FCD10B         10         16         12         41         89         87           52         70         77         70         54         50         47         36FCD10B         17         24         24         38         87         81           49         67         76         70         59         58         37         50FCD10B         15         24         27         21         88         74           49         67         74         67         59         58         27         80FCD10B         17         25         28         23         87         71           49         66         72         65         59         58         18         110FCD10B         18         27         30         25         86         69           50         66         67         60         59         58         -         180FCD10B         21         29</td><td>59         75         73         65         49         47         26         16FCD10B         6         13         9         37         60         86         74           60         49         83         75         58         56         28         25FCD10B         10         16         12         41         89         87         69           52         70         77         70         54         50         47         36FCD10B         17         24         24         38         87         81         63           49         67         76         70         59         58         37         50FCD10B         15         24         27         21         88         74         51           49         67         74         67         59         58         27         80FCD10B         17         25         28         23         87         71         50           49         66         72         65         59         58         18         110FCD10B         18         27         30         25         86         69         49           50         66         67         60</td><td>59         75         73         65         49         47         26         16FCD10B         6         13         9         37         60         86         74         78           60         49         83         75         58         56         28         25FCD10B         10         16         12         41         89         87         69         86           52         70         77         70         54         50         47         36FCD10B         17         24         24         38         87         81         63         66           49         67         76         70         59         58         37         50FCD10B         15         24         27         21         88         74         51         69           49         67         74         67         59         58         27         80FCD10B         17         25         28         23         87         71         50         62           49         66         72         65         59         58         18         110FCD10B         18         27         30         25         86         69         49</td></td> | 59         75         73         65         49         47         26         16FCD10B           60         49         83         75         58         56         28         25FCD10B           52         70         77         70         54         50         47         36FCD10B           49         67         76         70         59         58         37         50FCD10B           49         67         74         67         59         58         27         80FCD10B           49         66         72         65         59         58         18         110FCD10B           50         66         69         63         59         58         9         150FCD10B           50         66         67         60         59         58         -         180FCD10B           40         58         73         66         58         52         21         230FCD10B           70         69         65         60         53         51         24         50FCD10BS           67         66         63         58         52         49         23         80FCD10BS      < | 59         75         73         65         49         47         26         16FCD10B         6           60         49         83         75         58         56         28         25FCD10B         10           52         70         77         70         54         50         47         36FCD10B         17           49         67         76         70         59         58         37         50FCD10B         15           49         67         74         67         59         58         27         80FCD10B         17           49         66         72         65         59         58         18         110FCD10B         18           50         66         69         63         59         58         9         150FCD10B         19           50         66         67         60         59         58         - 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        180FCD10B         21         29         33           40         58         73         66 </td <td>59         75         73         65         49         47         26         16FCD10B         6         13         9         37           60         49         83         75         58         56         28         25FCD10B         10         16         12         41           52         70         77         70         54         50         47         36FCD10B         17         24         24         38           49         67         76         70         59         58         37         50FCD10B         15         24         27         21           49         67         74         67         59         58         27         80FCD10B         17         25         28         23           49         66         72         65         59         58         18         110FCD10B         18         27         30         25           50         66         69         63         59         58         9         150FCD10B         19         28         31         28           50         66         67         60         59         58         -         180FCD10B         21&lt;</td> <td>59         75         73         65         49         47         26         16FCD10B         6         13         9         37         60           60         49         83         75         58         56         28         25FCD10B         10         16         12         41         89           52         70         77         70         54         50         47         36FCD10B         17         24         24         38         87           49         67         76         70         59         58         37         50FCD10B         15         24         27         21         88           49         67         74         67         59         58         27         80FCD10B         17         25         28         23         87           49         66         72         65         59         58         18         110FCD10B         18         27         30         25         86           50         66         69         63         59         58         9         150FCD10B         19         28         31         28         85           50         66</td> <td>59         75         73         65         49         47         26         16FCD10B         6         13         9         37         60         86           60         49         83         75         58         56         28         25FCD10B         10         16         12         41         89         87           52         70         77         70         54         50         47         36FCD10B         17         24         24         38         87         81           49         67         76         70         59         58         37         50FCD10B         15         24         27         21         88         74           49         67         74         67         59         58         27         80FCD10B         17         25         28         23         87         71           49         66         72         65         59         58         18         110FCD10B         18         27         30         25         86         69           50         66         67         60         59         58         -         180FCD10B         21         29</td> <td>59         75         73         65         49         47         26         16FCD10B         6         13         9         37         60         86         74           60         49         83         75         58         56         28         25FCD10B         10         16         12         41         89         87         69           52         70         77         70         54         50         47         36FCD10B         17         24         24         38         87         81         63           49         67         76         70         59         58         37         50FCD10B         15         24         27         21         88         74         51           49         67         74         67         59         58         27         80FCD10B         17         25         28         23         87         71         50           49         66         72         65         59         58         18         110FCD10B         18         27         30         25         86         69         49           50         66         67         60</td> <td>59         75         73         65         49         47         26         16FCD10B         6         13         9         37         60         86         74         78           60         49         83         75         58         56         28         25FCD10B         10         16         12         41         89         87         69         86           52         70         77         70         54         50         47         36FCD10B         17         24         24         38         87         81         63         66           49         67         76         70         59         58         37         50FCD10B         15         24         27         21         88         74         51         69           49         67         74         67         59         58         27         80FCD10B         17         25         28         23         87         71         50         62           49         66         72         65         59         58         18         110FCD10B         18         27         30         25         86         69         49</td> | 59         75         73         65         49         47         26         16FCD10B         6         13         9         37           60         49         83         75         58         56         28         25FCD10B         10         16         12         41           52         70         77         70         54         50         47         36FCD10B         17         24         24         38           49         67         76         70         59         58         37         50FCD10B         15         24         27         21           49         67         74         67         59         58         27         80FCD10B         17         25         28         23           49         66         72         65         59         58         18         110FCD10B         18         27         30         25           50         66         69         63         59         58         9         150FCD10B         19         28         31         28           50         66         67         60         59         58         - 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        180FCD10B         21         29 | 59         75         73         65         49         47         26         16FCD10B         6         13         9         37         60         86         74           60         49         83         75         58         56         28         25FCD10B         10         16         12         41         89         87         69           52         70         77         70         54         50         47         36FCD10B         17         24         24         38         87         81         63           49         67         76         70         59         58         37         50FCD10B         15         24         27         21         88         74         51           49         67         74         67         59         58         27         80FCD10B         17         25         28         23         87         71         50           49         66         72         65         59         58         18         110FCD10B         18         27         30         25         86         69         49           50         66         67         60 | 59         75         73         65         49         47         26         16FCD10B         6         13         9         37         60         86         74         78           60         49         83         75         58         56         28         25FCD10B         10         16         12         41         89         87         69         86           52         70         77         70         54         50         47         36FCD10B         17         24         24         38         87         81         63         66           49         67         76         70         59         58         37         50FCD10B         15         24         27         21         88         74         51         69           49         67         74         67         59         58         27         80FCD10B         17         25         28         23         87         71         50         62           49         66         72         65         59         58         18         110FCD10B         18         27         30         25         86         69         49 |