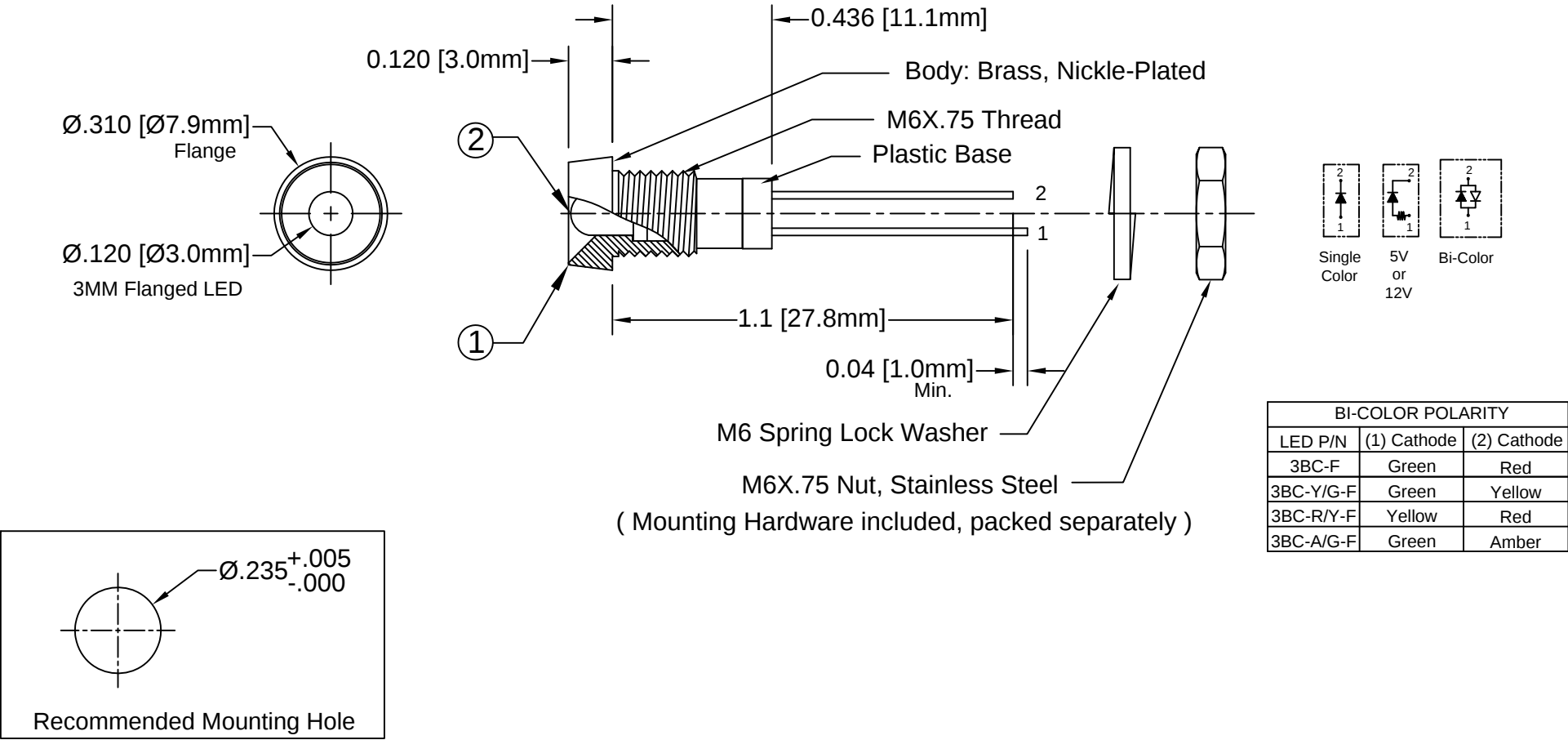


| ITEM | Q'TY | PART NUMBER | PART DESCRIPTION                           |
|------|------|-------------|--------------------------------------------|
| 1    | 1    | MPR3        | Chrome Panel Mount Holder, 3mm             |
| 2    | 1    | 3XX-F       | T-1 (3mm) Flanged LED, See Following Pages |

| REV. | DESCRIPTION                         | DATE     | APPROVED |
|------|-------------------------------------|----------|----------|
| A    | Engineering Release.                | 10/31/03 | M. C.    |
| B    | Engineering Update w/o Changes.     | 04/07/05 | M. C.    |
| C    | Dimension Update                    | 07/10/06 | M. C.    |
| D    | Updated Specs                       | 04/03/09 | T. Y.    |
| E    | Updated Specs                       | 04/26/12 | T. Y.    |
| F    | Updated LED offering                | 05/03/12 | T. Y.    |
| G    | Updated Bi-Color Polarity Table     | 12/18/12 | T. Y.    |
| H    | Updated LED Optical Characteristics | 09/15/15 | J. C.    |



# ABSOLUTE MAXIMUM RATINGS (Ta = 25°C)

|                                              |                     |
|----------------------------------------------|---------------------|
| REVERSE VOLTAGE                              | 5V                  |
| REVERSE CURRENT ( VR=5V)                     | 100µA               |
| OPERATING TEMPERATURE RANGE                  | -25°C ~ 85°C        |
| STORAGE TEMPERATURE                          | -30°C ~ 100°C       |
| LEAD SOLDERING TEMPERATURE (1/16" FROM BODY) | 260°C for 5 Seconds |

|                                                      |                          |                                                                                                                                                                 |                       |
|------------------------------------------------------|--------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------|
| STANDARD TOLERANCE<br>( UNLESS OTHERWISE SPECIFIED ) |                          | <br>4 THOMAS, IRVINE, CA. 92618<br>TEL: (949) 951-8808 FAX: (949) 951-3974 |                       |
| DECIMALS                                             | ANGULAR                  |                                                                                                                                                                 |                       |
| .X ± .1                                              | X° ± 1°                  |                                                                                                                                                                 |                       |
| .XX ± .02                                            |                          |                                                                                                                                                                 |                       |
| .XXX ± .010                                          |                          |                                                                                                                                                                 |                       |
| DESIGNED:<br><b>David Green</b>                      | DATE:<br><b>02/14/03</b> | <b>TITLE: STD METAL PANEL MOUNT INDICATORS</b>                                                                                                                  |                       |
| CHECKED:<br><b>M. Chen</b>                           | DATE:<br><b>02/14/03</b> | <b>PART NO: MPR3XX</b>                                                                                                                                          | <b>REVISION: H</b>    |
|                                                      |                          | <b>CAGE CODE : 32559</b>                                                                                                                                        | <b>SHEET # 1 OF 4</b> |
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| REV. | DESCRIPTION   | DATE | APPROVED |
|------|---------------|------|----------|
|      | SEE SHEET #1. |      |          |
|      |               |      |          |

| LED Assy. No. | Chip      |                  |               | Lens Appearance | Electro-Optical Data @ 20mA |        |     |          | Viewing Angle<br>2 θ ½<br>(Deg) | LED P/N   |
|---------------|-----------|------------------|---------------|-----------------|-----------------------------|--------|-----|----------|---------------------------------|-----------|
|               | Material  | Peak Wave Length | Emitted Color |                 | If (mA)                     | Vf (V) |     | Iv (mcd) |                                 |           |
|               |           |                  |               |                 |                             | MAX    | TYP | MAX      | TYP                             |           |
| MPR3BWC       | GaN/SiC   | 430              | BLUE          | WATER CLEAR     | 25                          | 4      | 4.5 | 15       | 20                              | 3BWC-F    |
| MPR3BWD       | GaN/SiC   | 430              | BLUE          | DIFFUSED        | 25                          | 4      | 4.5 | 10       | 35                              | 3BWD-F    |
| MPR3BWT       | GaN/SiC   | 430              | BLUE          | TINTED          | 25                          | 4      | 4.5 | 15       | 20                              | 3BWT-F    |
| MPR3GC        | GaP/GaP   | 568              | GREEN         | WATER CLEAR     | 30                          | 2.1    | 2.8 | 40       | 20                              | 3GC-F     |
| MPR3GD        | GaP/GaP   | 568              | GREEN         | DIFFUSED        | 30                          | 2.1    | 2.8 | 25       | 35                              | 3GD-F     |
| MPR3GT        | GaP/GaP   | 568              | GREEN         | TINTED          | 30                          | 2.1    | 2.8 | 40       | 20                              | 3GT-F     |
| MPR3PGC       | GaP/GaP   | 555              | PURE GREEN    | WATER CLEAR     | 30                          | 2.2    | 2.8 | 10       | 20                              | 3PGC-F    |
| MPR3PGD       | GaP/GaP   | 555              | PURE GREEN    | DIFFUSED        | 30                          | 2.2    | 2.8 | 5        | 35                              | 3PGD-F    |
| MPR3PGT       | GaP/GaP   | 555              | PURE GREEN    | TINTED          | 30                          | 2.2    | 2.8 | 10       | 20                              | 3PGT-F    |
| MPR3YC        | GaAsP/GaP | 590              | YELLOW        | WATER CLEAR     | 30                          | 2      | 2.8 | 40       | 20                              | 3YC-F     |
| MPR3YD        | GaAsP/GaP | 590              | YELLOW        | DIFFUSED        | 30                          | 2      | 2.8 | 20       | 35                              | 3YD-F     |
| MPR3YT        | GaAsP/GaP | 590              | YELLOW        | TINTED          | 30                          | 2      | 2.8 | 40       | 20                              | 3YT-F     |
| MPR3AC        | GaAsP/GaP | 605              | AMBER         | WATER CLEAR     | 30                          | 2      | 2.8 | 40       | 20                              | 3AC-F     |
| MPR3AD        | GaAsP/GaP | 605              | AMBER         | DIFFUSED        | 30                          | 2      | 2.8 | 25       | 35                              | 3AD-F     |
| MPR3AT        | GaAsP/GaP | 605              | AMBER         | TINTED          | 30                          | 2      | 2.8 | 40       | 20                              | 3AT-F     |
| MPR3HC        | GaAsP/GaP | 625              | HE RED        | WATER CLEAR     | 30                          | 2      | 2.8 | 50       | 20                              | 3HC-F     |
| MPR3HD        | GaAsP/GaP | 625              | HE RED        | DIFFUSED        | 30                          | 2      | 2.8 | 30       | 35                              | 3HD-F     |
| MPR3HT        | GaAsP/GaP | 625              | HE RED        | TINTED          | 30                          | 2      | 2.8 | 50       | 20                              | 3HT-F     |
| MPR3RC        | GaP/GaP   | 700              | RED           | WATER CLEAR     | 20                          | 2.1    | 2.8 | 2.5      | 35                              | 3RC-F     |
| MPR3RD        | GaP/GaP   | 700              | RED           | DIFFUSED        | 20                          | 2.1    | 2.8 | 2        | 20                              | 3RD-F     |
| MPR3RT        | GaP/GaP   | 700              | RED           | TINTED          | 20                          | 2.1    | 2.8 | 2.5      | 20                              | 3RT-F     |
| MPR3BC-A/G    | GaAsP/GaP | 605              | AMBER         | DIFFUSED        | 30                          | 2.0    | 2.8 | 6        | 45                              | 3BC-A/G-F |
|               | GaP/GaP   | 568              | GREEN         |                 | 30                          | 2.1    | 2.8 | 6        |                                 |           |
| MPR3BC        | GaAsP/GaP | 625              | RED           | DIFFUSED        | 30                          | 2.0    | 2.8 | 6        | 45                              | 3BC-F     |
|               | GaP/GaP   | 568              | GREEN         |                 | 30                          | 2.1    | 2.8 | 6        |                                 |           |
| MPR3BC-R/Y    | GaAsP/GaP | 625              | RED           | DIFFUSED        | 30                          | 2.0    | 2.8 | 6        | 45                              | 3BC-R/Y-F |
|               | GaAsP/GaP | 590              | YELLOW        |                 | 30                          | 2.0    | 2.8 | 4        |                                 |           |
| MPR3BC-Y/G    | GaAsP/GaP | 590              | YELLOW        | DIFFUSED        | 30                          | 2.0    | 2.8 | 4        | 45                              | 3BC-Y/G-F |
|               | GaP/GaP   | 568              | GREEN         |                 | 30                          | 2.1    | 2.8 | 6        |                                 |           |

|                                                                                                            |          |                                                                                                                                                                     |                |
|------------------------------------------------------------------------------------------------------------|----------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------|
| STANDARD TOLERANCE<br>( UNLESS OTHERWISE SPECIFIED )<br><u>±10% ALL VALUES</u> <u>ANGULAR</u><br>X°   ± 5° |          | <br>4 THOMAS, IRVINE, CA. 92618<br>TEL.: (949) 951-8808    FAX: (949) 951-3974 |                |
|                                                                                                            |          |                                                                                |                |
| DESIGNED:                                                                                                  | DATE:    | PART NO:                                                                                                                                                            | REVISION:      |
| David Green                                                                                                | 02/14/03 | MPR3XX                                                                                                                                                              | H              |
| CHECKED:                                                                                                   | DATE:    | CAGE CODE : 32559                                                                                                                                                   | SHEET # 2 OF 4 |
| M. Chen                                                                                                    | 02/14/03 | CAD GENERATED DOCUMENT, DO NOT MEASURE DRAWING.                                                                                                                     |                |

| REV. | DESCRIPTION   | DATE | APPROVED |
|------|---------------|------|----------|
|      | SEE SHEET #1. |      |          |
|      |               |      |          |

| LED Assy. No. | Chip          |                  |               | Lens Appearance | Electro-Optical Data @ 20mA |        |     |          | Viewing Angle<br>2 θ ½<br>(Deg) | LED P/N      |
|---------------|---------------|------------------|---------------|-----------------|-----------------------------|--------|-----|----------|---------------------------------|--------------|
|               | Material      | Peak Wave Length | Emitted Color |                 | If (mA)                     | Vf (V) |     | Iv (mcd) |                                 |              |
|               |               |                  |               |                 |                             | MAX    | TYP | MAX      |                                 |              |
| MPR3UBWC      | GaN/SiC       | 470              | BLUE          | WATER CLEAR     | 30                          | 4      | 4.5 | 400      | 30                              | 3UBWC-0.6K-F |
| MPR3SGC       | GaP/GaP       | 568              | GREEN         | WATER CLEAR     | 30                          | 2.1    | 2.8 | 50       | 20                              | 3SGC-F       |
| MPR3SGD       | GaP/GaP       | 568              | GREEN         | DIFFUSED        | 30                          | 2.1    | 2.8 | 30       | 35                              | 3SGD-F       |
| MPR3SGT       | GaP/GaP       | 568              | GREEN         | TINTED          | 30                          | 2.1    | 2.8 | 50       | 20                              | 3SGT-F       |
| MPR3SYC       | GaAsP/GaP     | 590              | YELLOW        | WATER CLEAR     | 30                          | 2.0    | 2.8 | 50       | 20                              | 3SYC-F       |
| MPR3SYD       | GaAsP/GaP     | 590              | YELLOW        | DIFFUSED        | 30                          | 2.0    | 2.8 | 30       | 35                              | 3SYD-F       |
| MPR3SYT       | GaAsP/GaP     | 590              | YELLOW        | TINTED          | 30                          | 2.0    | 2.8 | 50       | 20                              | 3SYT-F       |
| MPR3SAC       | AlGaInP       | 605              | AMBER         | WATER CLEAR     | 30                          | 1.8    | 2.4 | 300      | 20                              | 3SAC-F       |
| MPR3SAD       | AlGaInP       | 605              | AMBER         | DIFFUSED        | 30                          | 1.8    | 2.4 | 100      | 35                              | 3SAD-F       |
| MPR3SAT       | AlGaInP       | 605              | AMBER         | TINTED          | 30                          | 1.8    | 2.4 | 300      | 20                              | 3SAT-F       |
| MPR3SRC       | GaAlAs/GaAs   | 645              | SUPER RED     | WATER CLEAR     | 30                          | 1.7    | 2.4 | 60       | 20                              | 3SRC-F       |
| MPR3SRD       | GaAlAs/GaAs   | 645              | SUPER RED     | DIFFUSED        | 30                          | 1.7    | 2.4 | 40       | 35                              | 3SRD-F       |
| MPR3SRT       | GaAlAs/GaAs   | 645              | SUPER RED     | TINTED          | 30                          | 1.7    | 2.4 | 60       | 20                              | 3SRT-F       |
| MPR3UGC       | AlGaInP       | 570              | GREEN         | WATER CLEAR     | 30                          | 2.1    | 2.4 | 200      | 20                              | 3UGC-F       |
| MPR3SUGC      | AlGaInP       | 570              | GREEN         | WATER CLEAR     | 30                          | 2.1    | 2.4 | 300      | 35                              | 3SUGC-F      |
| MPR3UYC       | AlGaInP       | 590              | YELLOW        | WATER CLEAR     | 30                          | 2.0    | 2.4 | 300      | 20                              | 3UYC-F       |
| MPR3SUYC      | AlGaInP       | 590              | YELLOW        | WATER CLEAR     | 30                          | 2.0    | 2.4 | 400      | 20                              | 3SUYC-F      |
| MPR3UUYC      | AlGaInP       | 590              | YELLOW        | WATER CLEAR     | 30                          | 2.0    | 2.4 | 600      | 35                              | 3UUYC-F      |
| MPR3UOC       | AlGaInP       | 625              | ORANGE        | WATER CLEAR     | 30                          | 1.8    | 2.4 | 300      | 20                              | 3UOC-F       |
| MPR3SUOC      | AlGaInP       | 625              | ORANGE        | WATER CLEAR     | 30                          | 1.8    | 2.4 | 400      | 20                              | 3SUOC-F      |
| MPR3URC       | GaAlAs/GaAs   | 645              | RED           | WATER CLEAR     | 30                          | 1.7    | 2.4 | 200      | 35                              | 3URC-F       |
| MPR3SURC      | AlGaInP       | 640              | RED           | WATER CLEAR     | 30                          | 1.8    | 2.4 | 200      | 20                              | 3SURC-F      |
| MPR3UWC       | InGaN/Sappire | 6500K            | WHITE         | WATER CLEAR     | 30                          | 3.2    | 3.6 | 6000     | 35                              | 3UWC1.035C-F |

|                                                                         |                          |                                                                                                                                                                  |                              |
|-------------------------------------------------------------------------|--------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------|
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|                                                                         |                          | ANGULAR<br>X° ± 5°                                                                                                                                               |                              |
| DESIGNED:<br><b>David Green</b>                                         | DATE:<br><b>02/14/03</b> | <br><b>TITLE: STD METAL PANEL MOUNT INDICATORS</b>                          |                              |
|                                                                         |                          |                                                                                                                                                                  |                              |
| CHECKED:<br><b>M. Chen</b>                                              | DATE:<br><b>02/14/03</b> | <b>PART NO:</b><br><b>MPR3XX</b>                                                                                                                                 | <b>REVISION:</b><br><b>H</b> |
|                                                                         |                          | <b>CAGE CODE : 32559</b>                                                                                                                                         | <b>SHEET # 3 OF 4</b>        |
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| REV. | DESCRIPTION   | DATE | APPROVED |
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|      | SEE SHEET #1. |      |          |
|      |               |      |          |

| LED Assy.<br>No. | Chip        |                                  |               | Lens<br>Appearance | Absolute Max. Ratings |            |                | Electro-Optical Data @ 2mA |     |             | Viewing<br>Angle<br>2 θ ½<br>(Deg) | LED P/N |
|------------------|-------------|----------------------------------|---------------|--------------------|-----------------------|------------|----------------|----------------------------|-----|-------------|------------------------------------|---------|
|                  | Material    | Peak<br>Wave<br>Length<br>λp(nm) | Emitted Color |                    | Pd<br>(mW)            | If<br>(mA) | Peak<br>If(mA) | Vf<br>(V)                  |     | Iv<br>(mcd) |                                    |         |
|                  |             |                                  |               |                    |                       |            |                | TYP                        | MAX | TYP         |                                    |         |
| MPR3BWDL         | GaN/siC     | 430                              | BLUE          | DIFFUSED           | 20                    | 7          | -              | 3.8                        | 4.2 | 2.5         | 35                                 | 3BWDL-F |
| MPR3GDL          | GaP/GaP     | 568                              | GREEN         | DIFFUSED           | 10                    | 7          | -              | 2.1                        | 2.6 | 4.0         | 35                                 | 3GDL-F  |
| MPR3PGDL         | GaP/GaP     | 555                              | PURE GREEN    | DIFFUSED           | 10                    | 7          | -              | 2.1                        | 2.6 | 0.2         | 35                                 | 3PGDL-F |
| MPR3YDL          | GaAsP/GaP   | 590                              | YELLOW        | DIFFUSED           | 10                    | 7          | -              | 2.0                        | 2.6 | 2.0         | 35                                 | 3YDL-F  |
| MPR3ADL          | GaAsP/GaP   | 605                              | AMBER         | DIFFUSED           | 10                    | 7          | -              | 2.0                        | 2.6 | 4.0         | 35                                 | 3ADL-F  |
| MPR3HDL          | GaAsP/GaP   | 625                              | HE RED        | DIFFUSED           | 10                    | 7          | -              | 2.0                        | 2.6 | 2.5         | 35                                 | 3HDL-F  |
| MPR3RDL          | GaP/GaP     | 700                              | RED           | DIFFUSED           | 10                    | 7          | -              | 2.1                        | 2.6 | 0.5         | 35                                 | 3RDL-F  |
| MPR3SRDL         | GaAlAs/GaAs | 645                              | RED           | DIFFUSED           | 10                    | 7          | -              | 2.0                        | -   | 8.0         | 35                                 | 3SRDL-F |

| LED Assy. No. | Peak Wave Length<br>λp(nm) | Emitted Color | Lens Appearance | Electro-Optical Data |           |     |             | Viewing Angle<br>2 θ½<br>(Deg) | LED P/N  |
|---------------|----------------------------|---------------|-----------------|----------------------|-----------|-----|-------------|--------------------------------|----------|
|               |                            |               |                 | If<br>(mA)           | Vf<br>(V) |     | Iv<br>(mcd) |                                |          |
|               |                            |               |                 | MAX                  | TYP       | MAX | TYP         |                                |          |
| 5 Volt        |                            |               |                 | Data @ 5V            |           |     |             |                                |          |
| MPR3BWD5V     | BLUE                       | 430           | DIFFUSED        | -                    | -         | 5   | 10          | 35                             | 3BWD5V-F |
| MPR3GC5V      | GREEN                      | 568           | WATER CLEAR     | -                    | -         | 5   | 40          | 20                             | 3GC5V-F  |
| MPR3GD5V      | GREEN                      | 568           | DIFFUSED        | -                    | -         | 5   | 25          | 35                             | 3GD5V-F  |
| MPR3GT5V      | GREEN                      | 568           | TINTED          | -                    | -         | 5   | 40          | 20                             | 3GT5V-F  |
| MPR3AD5V      | AMBER                      | 605           | DIFFUSED        | -                    | -         | 5   | 25          | 35                             | 3AD5V-F  |
| MPR3HD5V      | HE RED                     | 625           | DIFFUSED        | -                    | -         | 5   | 30          | 35                             | 3HD5V-F  |
| MPR3RD5V      | RED                        | 700           | DIFFUSED        | -                    | -         | 5   | 2           | 35                             | 3RD5V-F  |
| MPR3YD5V      | YELLOW                     | 590           | DIFFUSED        | -                    | -         | 5   | 20          | 35                             | 3YD5V-F  |
| 12 Volt       |                            |               |                 | Data @ 12V           |           |     |             |                                |          |
| MPR3GC12V     | GREEN                      | 568           | WATER CLEAR     | -                    | -         | 12  | 40          | 20                             | 3GC12V-F |
| MPR3GD12V     | GREEN                      | 568           | DIFFUSED        | -                    | -         | 12  | 25          | 35                             | 3GD12V-F |
| MPR3HC12V     | HE RED                     | 625           | WATER CLEAR     | -                    | -         | 12  | 50          | 20                             | 3HC12V-F |
| MPR3HD12V     | HE RED                     | 625           | DIFFUSED        | -                    | -         | 12  | 30          | 35                             | 3HD12V-F |
| MPR3RC12V     | RED                        | 700           | WATER CLEAR     | -                    | -         | 12  | 6           | 20                             | 3RC12V-F |
| MPR3RD12V     | RED                        | 700           | DIFFUSED        | -                    | -         | 12  | 2           | 35                             | 3RD12V-F |
| MPR3YC12V     | YELLOW                     | 590           | WATER CLEAR     | -                    | -         | 12  | 40          | 20                             | 3YC12V-F |
| MPR3YD12V     | YELLOW                     | 590           | DIFFUSED        | -                    | -         | 12  | 25          | 35                             | 3YD12V-F |

|                                                                                                             |                   |                                                                                                                                                                  |  |
|-------------------------------------------------------------------------------------------------------------|-------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------|--|
| STANDARD TOLERANCE<br>( UNLESS OTHERWISE SPECIFIED )<br><u>±10% ALL VALUES</u><br><u>ANGULAR</u><br>X° ± 5° |                   | <br>4 THOMAS, IRVINE, CA. 92618<br>TEL.: (949) 951-8808 FAX: (949) 951-3974 |  |
|                        |                   | TITLE: STD METAL PANEL MOUNT<br>INDICATORS                                                                                                                       |  |
| DESIGNED:<br>David Green                                                                                    | DATE:<br>02/14/03 | PART NO:<br>MPR3XX                                                                                                                                               |  |
| CHECKED:<br>M. Chen                                                                                         | DATE:<br>02/14/03 | REVISION:<br>H                                                                                                                                                   |  |
|                                                                                                             |                   | CAGE CODE : 32559                                                                                                                                                |  |
|                                                                                                             |                   | SHEET # 4 OF 4                                                                                                                                                   |  |
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## JONHON

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«FORSTAR» (основан в 1998 г.)

ВЧ соединители, коаксиальные кабели,  
кабельные сборки и микроволновые компоненты:

(Применяются в телекоммуникациях гражданского и специального назначения, в средствах связи, РЛС, а так же военной, авиационной и аэрокосмической отраслях промышленности).



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