

| PART NUMBER | LED COLOR |
|--------------|---------------------|
| 591-2001-002 | HI.EFF. RED |
| 591-2001-007 | |
| 591-2001-013 | |
| 591-2101-002 | AlGaAs RED |
| 591-2101-007 | |
| 591-2101-013 | |
| 591-2201-002 | HI. INTENSITY GREEN |
| 591-2201-007 | |
| 591-2201-013 | |
| 591-2301-002 | GREEN |
| 591-2301-007 | |
| 591-2301-013 | |
| 591-2401-002 | YELLOW |
| 591-2401-007 | |
| 591-2401-013 | |
| 591-2601-002 | BLUE |
| 591-2601-007 | |
| 591-2601-013 | |
| 591-2701-002 | AlInGaP YELLOW |
| 591-2701-007 | |
| 591-2701-013 | |

| LED COLOR = HI.EFF. / RED - GREEN - YELLOW | | | | | | |
|--------------------------------------------|--------|-----|------|------|-------|------------------------|
| OPERATING CHARACTERISTICS AT 25°C AMBIENT | | | | | | |
| CHARACTERISTICS | | MIN | TYP | MAX | UNITS | TEST CONDITIONS |
| LUMINOUS INTENSITY | RED | 5.6 | 9.8 | 14.0 | mcd | I _f = 10 mA |
| | GREEN | 7.1 | 10.6 | 14.0 | | |
| | YELLOW | 7.1 | 12.6 | 18.0 | | |
| FORWARD VOLTAGE | RED | 2.0 | 2.5 | | V | I _f = 10 mA |
| | GREEN | 2.0 | 2.5 | | | |
| | YELLOW | 2.0 | 2.5 | | | |
| REVERSE VOLTAGE | RED | 5 | | | V | I _r = 10 μA |
| | GREEN | 5 | | | | |
| | YELLOW | 5 | | | | |
| PEAK WAVELENGTH | RED | 635 | | | nm | I _f = 10 mA |
| | GREEN | 572 | | | | |
| | YELLOW | 586 | | | | |
| DOMINANT WAVELENGTH | RED | 622 | 628 | 634 | nm | I _f = 10 mA |
| | GREEN | 564 | 570 | 576 | | |
| | YELLOW | 580 | 587 | 595 | | |

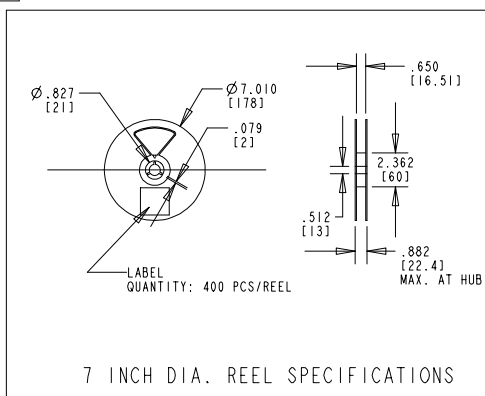
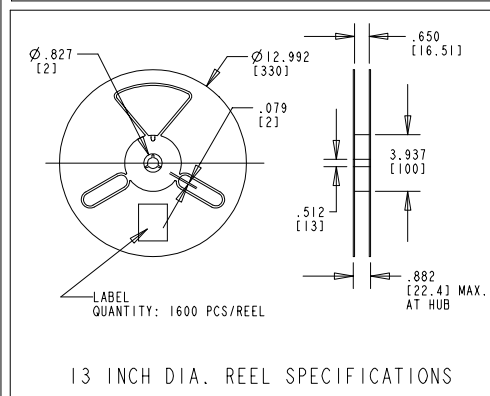
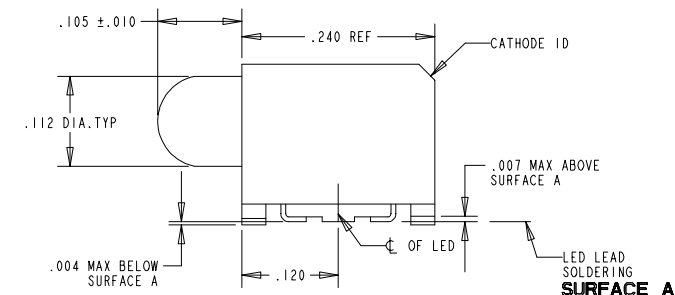
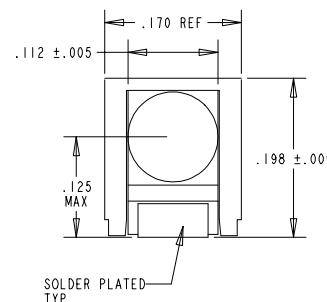
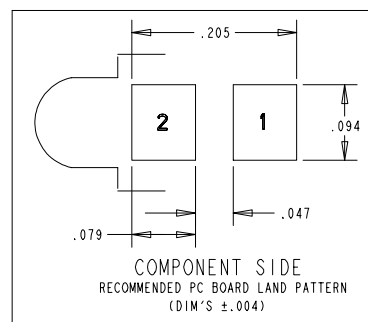
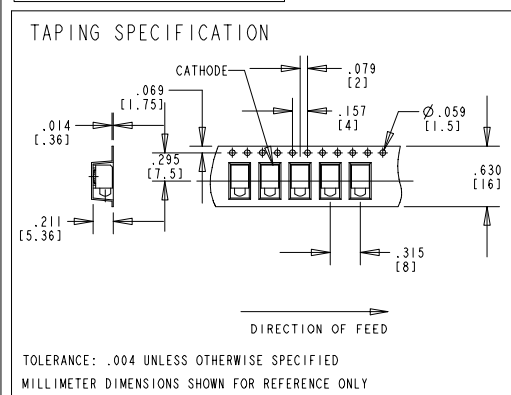
| LED COLOR = RED (AlGaAs) GREEN (HI.INT.) YELLOW (AlInGaP) | | | | | | |
|-----------------------------------------------------------|----------------|-----|------|-----|-------|------------------------|
| OPERATING CHARACTERISTICS AT 25°C AMBIENT | | | | | | |
| CHARACTERISTICS | | MIN | TYP | MAX | UNITS | TEST CONDITIONS |
| LUMINOUS INTENSITY | AlGaAs RED | | 23.9 | | mcd | I _f = 10 mA |
| | HI.INT. GREEN | | 9.1 | | | |
| | AlInGaP YELLOW | | 33.6 | | | |
| FORWARD VOLTAGE | AlGaAs RED | 1.8 | 2.4 | | V | I _f = 20 mA |
| | HI.INT. GREEN | 2.1 | 2.6 | | | |
| | AlInGaP YELLOW | 2.0 | 2.4 | | | |
| REVERSE VOLTAGE | AlGaAs RED | 5 | | | V | I _f = 10 mA |
| | HI.INT. GREEN | 5 | | | | |
| | AlInGaP YELLOW | 5 | | | | |
| DOMINANT WAVELENGTH | AlGaAs RED | | 638 | | nm | |
| | HI.INT. GREEN | | 569 | | | |
| | AlInGaP YELLOW | | 595 | | | |

| LED COLOR = RED (AlGaAs) GREEN (HI.INT.) YELLOW (AlInGaP) | | | |
|------------------------------------------------------------|----------------|-----------------|-------|
| ABSOLUTE MAXIMUM RATING AT 25°C AMBIENT | | | |
| PARAMETER | VALUE | UNITS | |
| POWER DISSIPATION | R-G-Y | 100 | mW |
| DERATE LINEARLY FROM 25°C | AlGaAs RED | 0.8 | mA/°C |
| | HI.INT. GREEN | 0.6 | |
| | AlInGaP YELLOW | 0.6 | |
| CONTINUOUS FORWARD CURRENT | AlGaAs RED | 40 | mA |
| | HI.INT. GREEN | 30 | |
| | AlInGaP YELLOW | 50 | |
| PEAK FORWARD CURRENT (1/10 DUTY CYCLE, 0.1 ms PULSE WIDTH) | AlGaAs RED | 200 | mA |
| | HI.INT. GREEN | 120 | |
| | AlInGaP YELLOW | 160 | |
| OPERATING TEMPERATURE | R-G-Y | -55 TO 100 | °C |
| STORAGE TEMPERATURE | R-G-Y | -55 TO 100 | °C |
| INFRARED REFLOW SOLDERING | R-G-Y | 260°C FOR 5 SEC | |
| VAPOR PHASE SOLDERING | R-G-Y | 215°C FOR 3 MIN | |

| LED COLOR = BLUE | | | | | | |
|-------------------------------------------|-----|------|-----|-------|------------------------|--|
| OPERATING CHARACTERISTICS AT 25°C AMBIENT | | | | | | |
| CHARACTERISTICS | MIN | TYP | MAX | UNITS | TEST CONDITIONS | |
| LUMINOUS INTENSITY | | 6.0 | | mcd | I _f = 10 mA | |
| FORWARD VOLTAGE | | 3.5 | 4.2 | V | I _f = 10 mA | |
| REVERSE CURRENT | | 0.01 | 10 | μA | V _R = 5 V | |

| LED COLOR = BLUE | | | |
|-----------------------------------------|------------|-------|--|
| ABSOLUTE MAXIMUM RATING AT 25°C AMBIENT | | | |
| PARAMETER | VALUE | UNITS | |
| POWER DISSIPATION | 100 | mW | |
| DERATE LINEARLY FROM 55°C | 0.44 | mA/°C | |
| CONTINUOUS FORWARD CURRENT | 20 | mA | |
| OPERATING TEMPERATURE | -40 TO 100 | °C | |
| STORAGE TEMPERATURE | -40 TO 100 | °C | |

SOLDER PROFILE: IR 235°C PEAK FOR 15 sec / 185°C FOR 90 sec MAX



- NOTES :
- 1- MILLIMETER DIMENSIONS SHOWN FOR REFERENCE ONLY
 - 2- PAD NUMBERS ARE FOR REFERENCE ONLY, DESIGNATION NON-EXISTENT ON PART
 - 3- STORAGE CONDITIONS FOR TAPED PRODUCT: RE-TAPING MAY BE NECESSARY FOR PRODUCTS STORED MORE THAN TWELVE MONTHS
 - 4- ORDER QUANTITY IS LED ASSEMBLIES, NOT REELS
 - 5- ...-002 SUFFIX MEANS PARTS ARE PACKED ON A 20 pc SAMPLE STRIP
...-007 SUFFIX MEANS PARTS ARE PACKED ON A 7 INCH REEL, 400 pcs/REEL
...-013 SUFFIX MEANS PARTS ARE PACKED ON A 13 INCH REEL, 1600 pcs/REEL
 - 6- LENS MOVEMENT IN RELATIONSHIP TO THE HOUSING IS:
.009" T.I.R. VERTICALLY
.007" T.I.R. HORIZONTALLY
 - 7- FRONT AND REAR TERMINALS OF THE ASSEMBLY TO BE WITHIN .005 COPLANARITY
 - 8- LED LEAD FRAME MATERIAL:
CORE MATERIAL = COPPER
1st PLATING = Ag-100%, THICKNESS ABOUT 90 MICRO-INCH
2nd PLATING = 90% Sn - 10% Pb, THICKNESS RANGE 200 TO 800 MICRO-INCH
 - 9- DIALIGHT PART NUMBERS =
591-2401-002, 591-2401-007, 591-2401-013
 - 10- DEVICE HAS A MOISTURE SENSITIVITY LEVEL "2" CAUTION LABEL APPLIED AS PER JEDEC STD. 033

| REV. | ECN NO. | REVISIONS | DRN. | CKD. | APP. | DATE |
|------|---------|------------------------------------------------------------------------------------------|------|------|------|----------|
| A | | --- | --- | --- | --- | --- |
| B | | --- | --- | --- | --- | --- |
| C | | --- | --- | --- | --- | --- |
| D | | REDRAWN WITH CHANGES -NEW HSG AND LENS DESIGN -ADDED NOTE 6-8 -CHANGE LED CHARACTERISTIC | YY | --- | NO | 3-7-94 |
| E | | ADDED HI. GREEN AND AlInGaP YELLOW AND CHANGE TO ANOTHER AlGaAs RED CHANGE NOTE 8 | AV | DC | NO | 3-8-00 |
| F | | ADD ...2601... (BLUE) CORRECT HI.EFF. LED SPEC | AV | DC | NO | 10-10-00 |
| G | | ADDED NOTE 10 | YIS | JMC | NO | 2-14-03 |
| H | | UPDATED LED SPEC. FOR HI.EFF. RED, GREEN & YELLOW | YIS | | | |

| SCALE 8:1 | | |
|---------------------------------------------------------------------------------------------------------------|----------------|-------------------------------------------|
| ALL DIM'S IN: INCHES | DRAWING NUMBER | REV |
| | C-15636 | H |
| TOLERANCES: UNLESS OTHERWISE SPECIFIED | TITLE | SURFACE MOUNT CBI - ROUND LENS |
| FRACTIONS: ±1/64 DECIMALS (.XX): ±.020 DECIMALS (.XXX): ±.015 DECIMALS (.XXXX): ±.010 ANGLES: ±3° | MATERIAL | |
| FINISH: | Dialight | 1501 ROUTE 34 SOUTH FARMINGDALE, NJ 07727 |
| FSCM 83330 | SHEET OF | FAMILY TABLES: |