

| ELECTRO-OPTICAL CHARACTERISTICS $T_A=25^{\circ}\text{C}$ $I_f=1000\text{mA}$ |                  |      |      |      |                    |                     |
|--|------------------|------|------|------|--------------------|---------------------|
| PARAMETER  | SYMBOL           | MIN  | TYP  | MAX  | UNITS              | TEST COND           |
| FORWARD VOLTAGE  | $V_f$            | 9.3  | 10.4 | 11.5 | V                  | $I_f=1000\text{mA}$ |
| REVERSE VOLTAGE  | $V_r$            | 15   |      |      | V                  | $I_r=10\mu\text{A}$ |
| LUMINOUS FLUX  | $I_v$            | 490  | 600  |      | lm                 | $I_f=1000\text{mA}$ |
| COLOR TEMPERATURE  |                  | 5310 | 6000 | 7040 | $^{\circ}\text{K}$ |                     |
| VIEWING ANGLE  |                  |      | 120  |      | $2x$ theta         |                     |
| EMITTED COLOR:   | COOL WHITE       |      |      |      |                    |                     |
| EPOXY LENS FINISH:   | WATER CLEAR LENS |      |      |      |                    |                     |

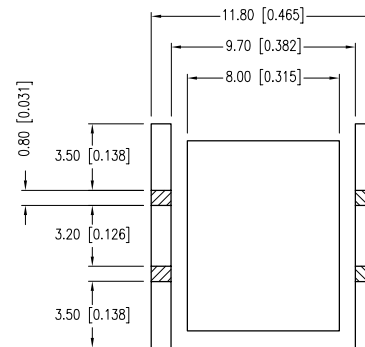
| LIMITS OF SAFE OPERATION AT $25^{\circ}\text{C}$ |             |                    |
|--|-------------|--------------------|
| PARAMETER  | MAX         | UNITS              |
| PEAK FORWARD CURRENT                             | 1200        | mA                 |
| STEADY CURRENT                                   | 1000        | mA                 |
| POWER DISSIPATION                                | 11.5        | mW                 |
| OPERATING TEMP.                                  | -40 TO +90  | $^{\circ}\text{C}$ |
| STORAGE TEMP.                                    | -40 TO +100 | $^{\circ}\text{C}$ |

| THERMAL PARAMETERS                   |      |                             |
|--------------------------------------|------|-----------------------------|
| PARAMETER                            | MAX  | UNITS                       |
| JUNCTION TEMPERATURE                 | 110  | $^{\circ}\text{C}$          |
| THERMAL RESISTANCE (JUNCTION/SOLDER) | 3.5  | $^{\circ}\text{C}/\text{W}$ |
| TEMPERATURE COEFFICIENT OF $V_f$     | -5.6 | mV/ $^{\circ}\text{C}$      |

CAUTION: MOISTURE SENSITIVE DEVICE  
PER JEDEC LEVEL 2 STANDARDS

CAUTION: STATIC SENSITIVE DEVICE  
FOLLOW PROPER E.S.D. HANDLING PROCEDURES  
WHEN WORKING WITH THIS PART.

RECOMMENDED SOLDER PAD LAYOUT



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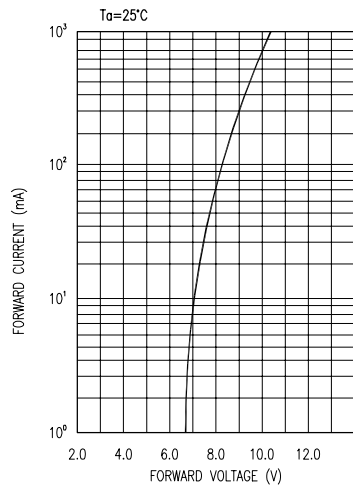
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12mm x 12mm SURFACE MOUNT LED, COOL WHITE.

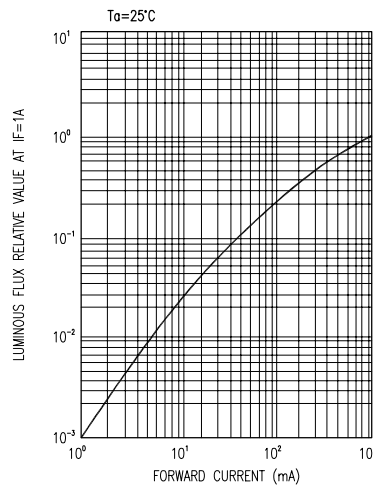
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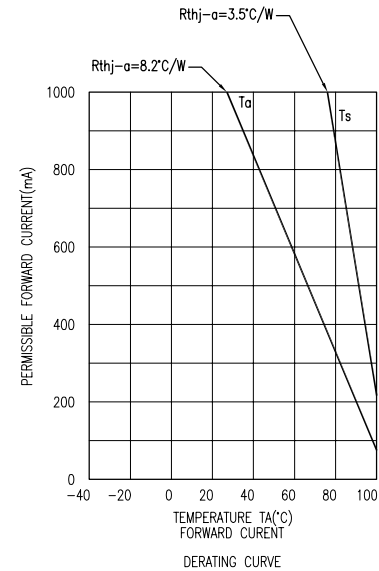
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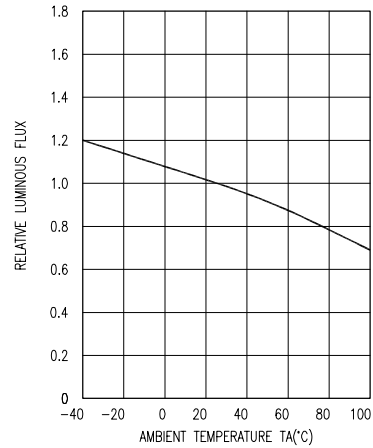
FORWARD CURRENT VS FORWARD VOLTAGE



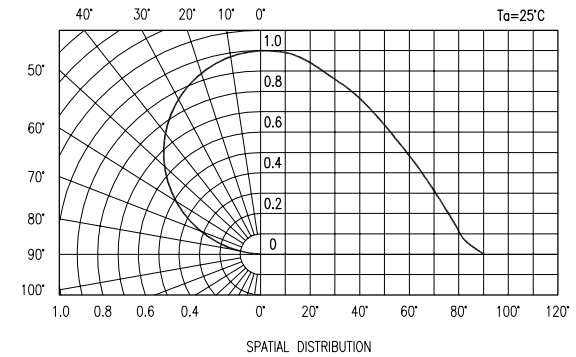
LUMINOUS FLUX VS FORWARD CURRENT



DERATING CURVE



LUMINOUS FLUX VS AMBIENT TEMPERATURE



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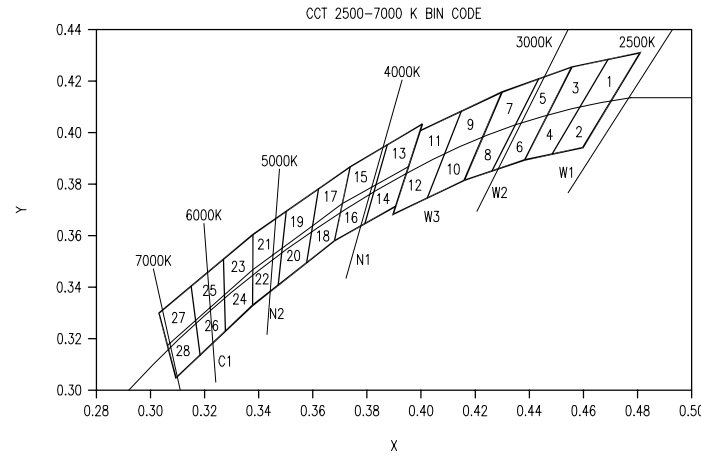
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12mm x 12mm SURFACE MOUNT LED, COOL WHITE.

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| COLOR      | GROUP | CHROMATICITY REGIONS | MIN. | TYP. | MAX. |
|------------|-------|----------------------|------|------|------|
| WARM WHITE | W1    | 1,2,3,4              | 2580 | 2700 | 2870 |
|            | W2    | 5,6,7,8              | 2870 | 3000 | 3220 |
|            | W3    | 9,10,11,12           | 3220 | 3500 | 3710 |
| WARM WHITE | N1    | 13,14,15,16          | 3710 | 4000 | 4260 |
|            | N2    | 17,18,19,20,21,22    | 4260 | 4700 | 5310 |
| COOL WHITE | C1    | 23,24,25,26,27,28    | 5310 | 6000 | 7040 |

|   | X      | Y      | X  | Y      | X      | Y  | X      | Y      | X  | Y      | X      | Y  |        |        |        |        |
|---|--------|--------|----|--------|--------|----|--------|--------|----|--------|--------|----|--------|--------|--------|--------|
| 1 | 0.4582 | 0.4099 | 6  | 0.4259 | 0.3853 | 11 | 0.3941 | 0.3848 | 16 | 0.3670 | 0.3578 | 21 | 0.3496 | 0.3702 |        |        |
|   | 0.4687 | 0.4289 |    | 0.4342 | 0.4028 |    | 0.3996 | 0.4015 |    | 0.3702 | 0.3722 |    | 0.3376 | 0.3616 | 0.3160 | 0.3274 |
|   | 0.4813 | 0.4319 |    | 0.4465 | 0.4071 |    | 0.4146 | 0.4089 |    | 0.3825 | 0.3798 |    | 0.3370 | 0.3472 | 0.3175 | 0.3139 |
| 2 | 0.4700 | 0.4126 | 7  | 0.4373 | 0.3893 | 12 | 0.4080 | 0.3916 | 17 | 0.3783 | 0.3646 | 22 | 0.3481 | 0.3557 |        |        |
|   | 0.4483 | 0.3919 |    | 0.4221 | 0.3984 |    | 0.3889 | 0.3690 |    | 0.3736 | 0.3874 |    | 0.3481 | 0.3557 | 0.3144 | 0.3408 |
|   | 0.4582 | 0.4099 |    | 0.4299 | 0.4165 |    | 0.3941 | 0.3848 |    | 0.3616 | 0.3788 |    | 0.3370 | 0.3472 | 0.3028 | 0.3304 |
| 3 | 0.4700 | 0.4126 | 8  | 0.4430 | 0.4212 | 13 | 0.4080 | 0.3916 | 18 | 0.3592 | 0.3641 | 23 | 0.3364 | 0.3328 |        |        |
|   | 0.4593 | 0.3944 |    | 0.4342 | 0.4028 |    | 0.4017 | 0.3751 |    | 0.3703 | 0.3726 |    | 0.3466 | 0.3411 | 0.3160 | 0.3274 |
|   | 0.4465 | 0.4071 |    | 0.4147 | 0.3814 |    | 0.3825 | 0.3798 |    | 0.3703 | 0.3726 |    | 0.3376 | 0.3616 | 0.3160 | 0.3274 |
| 4 | 0.4562 | 0.4260 | 9  | 0.4687 | 0.4289 | 14 | 0.4342 | 0.4028 | 19 | 0.3592 | 0.3641 | 24 | 0.3260 | 0.3512 |        |        |
|   | 0.4582 | 0.4099 |    | 0.4221 | 0.3984 |    | 0.3869 | 0.3959 |    | 0.3592 | 0.3641 |    | 0.3260 | 0.3512 | 0.3055 | 0.3177 |
|   | 0.4483 | 0.3919 |    | 0.4299 | 0.4165 |    | 0.4006 | 0.4044 |    | 0.3568 | 0.3495 |    | 0.3265 | 0.3371 | 0.3081 | 0.3049 |
| 5 | 0.4582 | 0.4099 | 10 | 0.4259 | 0.3853 | 15 | 0.3950 | 0.3875 | 20 | 0.3670 | 0.3578 | 25 | 0.3370 | 0.3472 |        |        |
|   | 0.4465 | 0.4071 |    | 0.4080 | 0.3916 |    | 0.3825 | 0.3798 |    | 0.3616 | 0.3788 |    | 0.3370 | 0.3472 | 0.3160 | 0.3274 |
|   | 0.4430 | 0.4212 |    | 0.4221 | 0.3984 |    | 0.3702 | 0.3722 |    | 0.3592 | 0.3641 |    | 0.3260 | 0.3512 | 0.3144 | 0.3408 |
|   | 0.4562 | 0.4260 |    | 0.4147 | 0.3814 |    | 0.3736 | 0.3874 |    | 0.3481 | 0.3557 |    | 0.3144 | 0.3408 |        |        |
|   | 0.4465 | 0.4071 |    | 0.4221 | 0.3984 |    | 0.3869 | 0.3958 |    | 0.3466 | 0.3411 |    | 0.3160 | 0.3274 |        |        |
|   |        |        |    | 0.3825 | 0.3798 |    | 0.3568 | 0.3495 |    | 0.3265 | 0.3371 |    |        |        |        |        |

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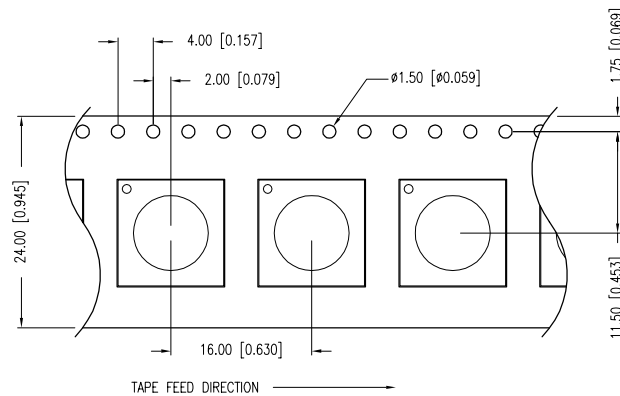
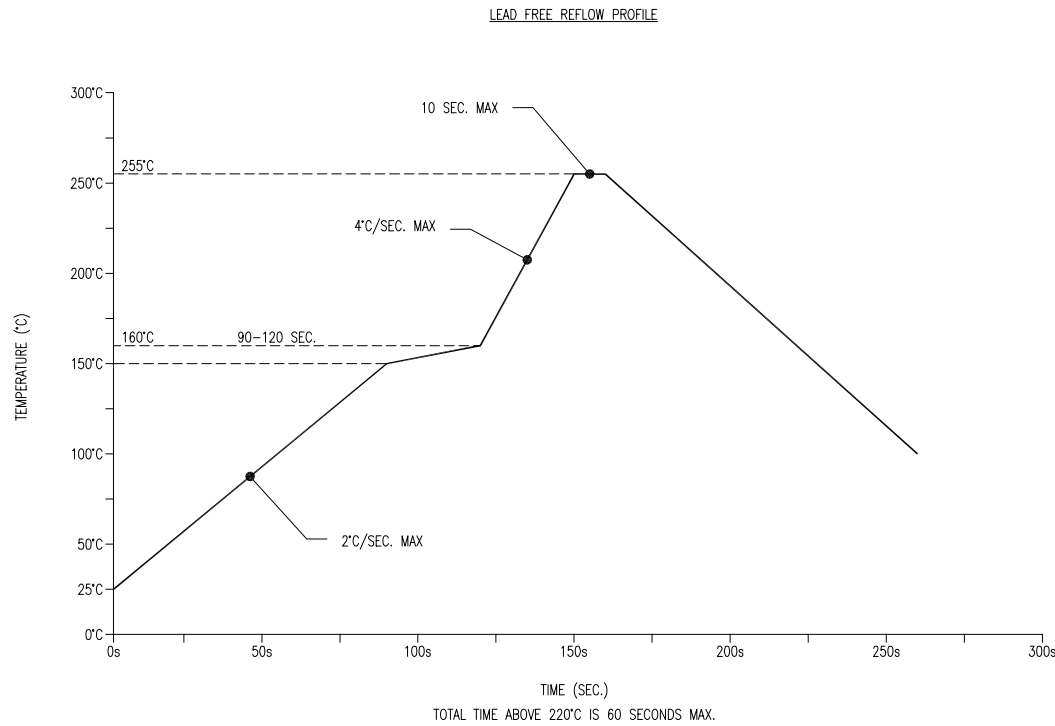
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