

Series 400 - Ceramics

thin film technology

preliminary

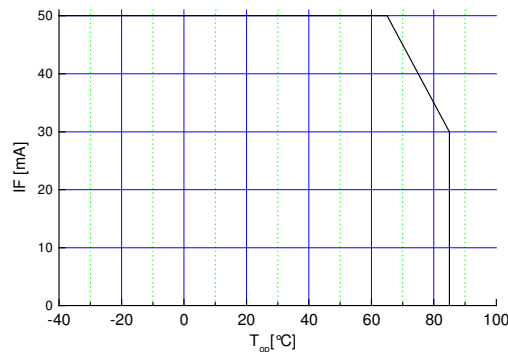
Features

- size 3,0(L) x 2,0(W) x 1,0(H) mm
- circuit substrate: Al₂O₃ Ceramics
- devices are ROHS conform
- lead free solderable, soldering pads: gold plated
- taped in 8 mm blister tape, cathode to transporting perforation
- all devices sorted into luminous intensity classes
- taping: face-up (T)
- high luminous intensity types
- on request sorted in color classes



Absolute Maximum Ratings

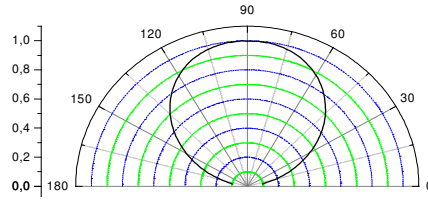
| $I_{F, max}$ [mA] | $I_{F, P}$ [mA] $t_p \leq 100 \mu s$ $\tau=1: 10$ | V_R [V] | I_R, max [μA] | Thermal resistance R_{thJA} [K / W] | T_{Op} [$^{\circ}C$] | T_{St} [$^{\circ}C$] |
|-------------------|---|-----------|------------------------|---------------------------------------|--------------------------|--------------------------|
| 50 | 70 | 5 | 100 | 60 | -40...85 | -40...85 |



Maximal forward current (DC) characteristic

Electro-Optical Characteristics

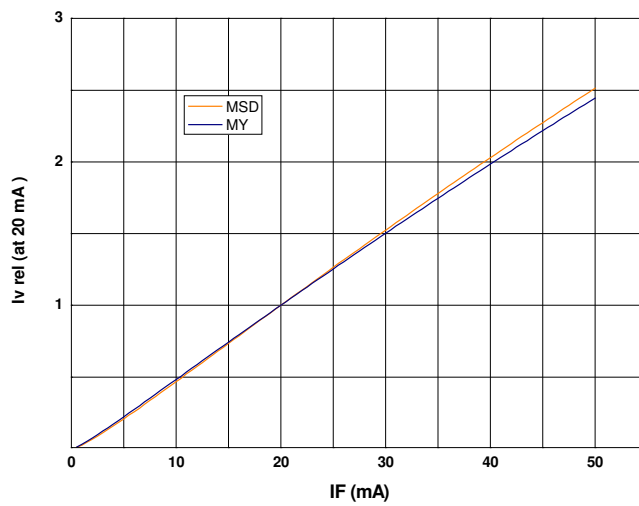
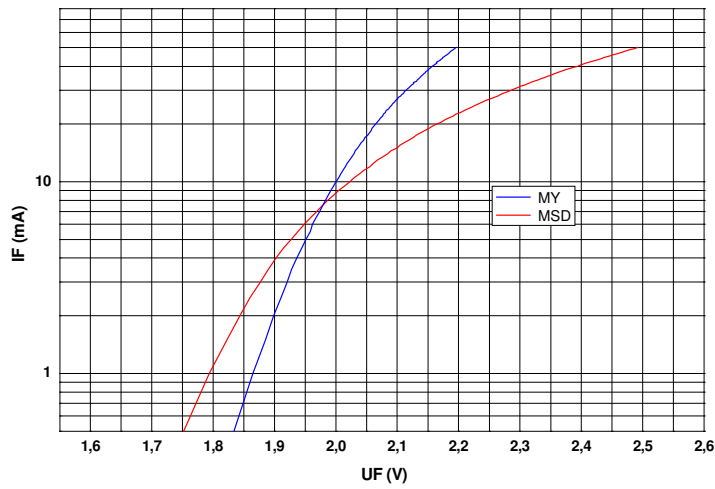
| Type | Emitting color | Marking at | Measurement I_F [mA] | V_F [V] | | λ_d / λ_p^* [nm] | I_v [mcd] | |
|-------------|----------------|------------|------------------------|-----------|-----|--------------------------------|-------------|-----|
| | | | | typ | max | | min | typ |
| OCL-400 MY | yellow | anode | 20 | 2,1 | 2,6 | 589 | 250 | 400 |
| OCL-400 MSD | red | anode | 20 | 2,1 | 2,6 | 624 | 250 | 400 |



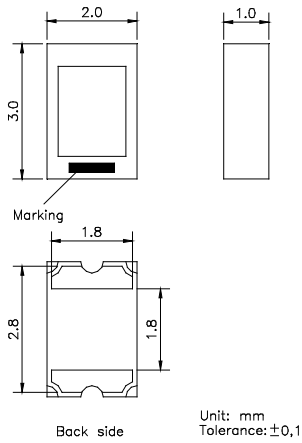
view angle

$U_F - I_F$ characteristic

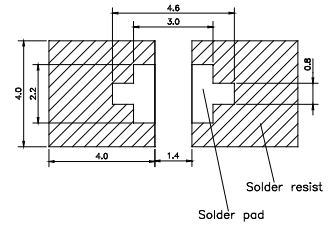
$I_F - I_{v, rel}$ characteristic



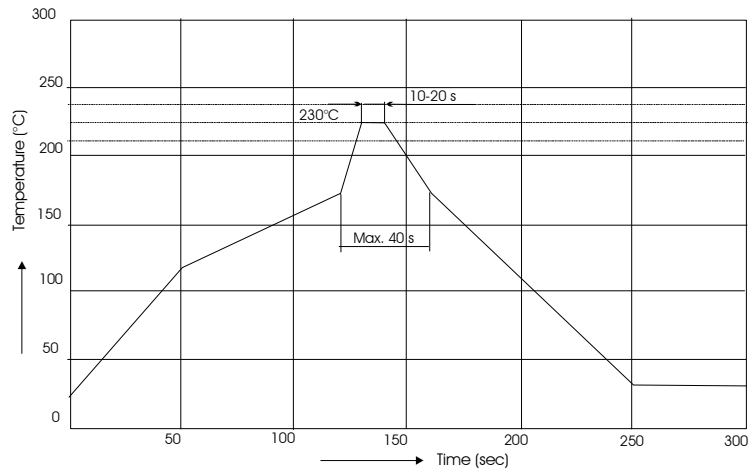
Outline Drawing



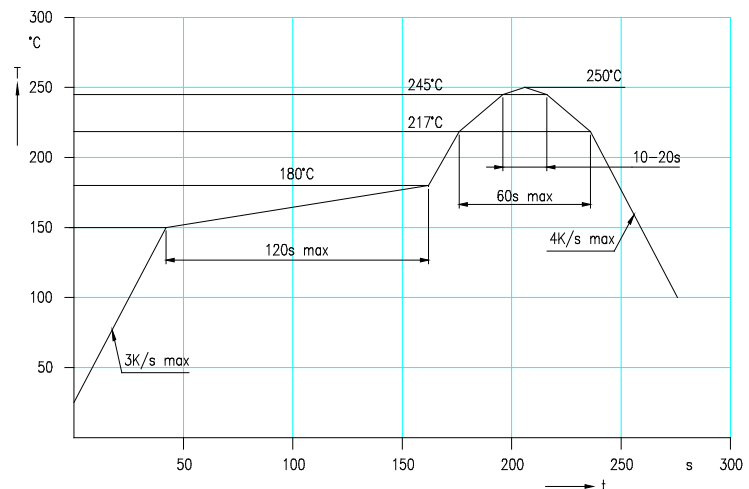
Recommended Soldering Patterns



Soldering Conditions



IR reflow soldering profile



IR reflow soldering profile for lead free soldering

Manual soldering: max power of iron 25W/ 3s/ 300°C

Ordering Code For Parts

| Series | Color | Encapsulation | Packaging |
|---------|---------|---------------------|-----------|
| OCL-400 | ??????? | X | T |
| | | | T - taped |
| | | X - uncolored clear | |

Type definition, e.g. OCL-400 MY-X -T

LED Luminous Intensity Groups And Subgroups [mcd]

(general information – not this device specific)

| | | | | | |
|----|---------------|-----|---------------|-----|-------------|
| C: | 0.28 - 0.45 | C1: | 0.28 - 0.36 | Q1: | 71 - 90 |
| D: | 0.45 - 0.71 | C2: | 0.36 - 0.45 | Q2: | 90 - 112 |
| E: | 0.71 - 1.12 | D1: | 0.45 - 0.56 | R1: | 112 - 140 |
| F: | 1.12 - 1.80 | D2: | 0.56 - 0.71 | R2: | 140 - 180 |
| G: | 1.80 - 2.80 | E1: | 0.71 - 0.90 | S1: | 180 - 224 |
| H: | 2.80 - 4.50 | E2: | 0.90 - 1.12 | S2: | 224 - 280 |
| J: | 4.50 - 7.10 | F1: | 1.12 - 1.40 | T1: | 280 - 355 |
| K: | 7.10 - 11.20 | F2: | 1.40 - 1.80 | T2: | 355 - 450 |
| L: | 11.20 - 18.00 | G1: | 1.80 - 2.24 | U1: | 450 - 560 |
| | | G2: | 2.24 - 2.80 | U2: | 560 - 710 |
| M: | 18 - 28 | H1: | 2.80 - 3.55 | V1: | 710 - 900 |
| N: | 28 - 45 | H2: | 3.55 - 4.50 | V2: | 900 - 1120 |
| P: | 45 - 71 | J1: | 4.50 - 5.60 | W1: | 1120 - 1420 |
| Q: | 71 - 112 | J2: | 5.60 - 7.10 | W2: | 1420 - 1800 |
| R: | 112 - 180 | K1: | 7.10 - 9.00 | X1: | 1800 - 2250 |
| S: | 180 - 280 | K2: | 9.00 - 11.20 | X2: | 2250 - 2800 |
| T: | 280 - 450 | L1: | 11.20 - 14.00 | Y1: | 2800 - 3550 |
| U: | 450 - 710 | L2: | 14.00 - 18.00 | Y2: | 3550 - 4500 |
| V: | 710 - 1120 | M1: | 18.00 - 22.40 | Z1: | 4500 - 5750 |
| W: | 1120 - 1800 | M2: | 22.40 - 28.00 | Z2: | 5750 - 7100 |
| X: | 1800 - 2800 | N1: | 28.00 - 35.50 | | |
| Y: | 2800 - 4500 | N2: | 35.50 - 45.00 | | |
| Z: | 4500 - 7100 | P1: | 45.00 - 56.00 | | |
| | | P2: | 56.00 - 71.00 | | |

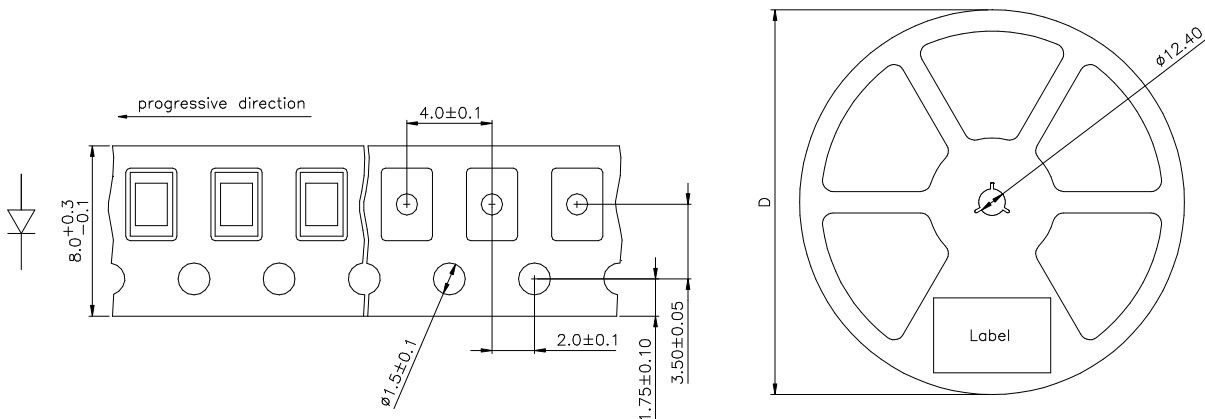
Measured according to CIE 127. All SMD-LEDs are 100% measured and selected on full automated equipment with an accuracy of $\pm 11\%$.

**Special service: Brightness selection in sub selections possible.
Color selection in sub selections possible (each subgroup per reel).**

Attention please:

The LED output is strong enough to injure human eyes. Precautions must be taken to prevent locking directly at the LED with unaided eyes for more than a few seconds. Flashing lights have been known to cause discomfort in people, you can prevent this by taking precautions during use. Also, people should be cautious when using equipment where these LED's are incorporated.

Tape And Reel Packing



| D | Parts/reel |
|--------|------------|
| 180 mm | 2000 |
| 330 mm | 8000 |

Packing: The reel is sealed in special plastic bag with integrate ESD protection (MIL - STD 81705) including a silica dry-pack

Label

| | | |
|-----------------|---|---|
| Order No. | XXXXXXXXXX | Customer order No. |
| Type | OCL-400 ?????-??-T | |
| Intensity group | ZZ Color class: CC | Color class - optional |
| Charge No. | 1122-AAAAAA | 11 Week – 22 year – A internal identification |
| Quantity | 9999 | |

Attention please:

The information describes the type of component and shall not considered as assured characteristics. Terms of delivery and rights to change reserved.

Due to technical requirements components may contain dangerous substances.

The data sheet may be changed without prior information; the valid issue will be on our webpage in internet.

Packaging:

Please use the recycling operators known to you.

Components used in life support devices or systems and safety systems must be expressly authorized for such purpose!