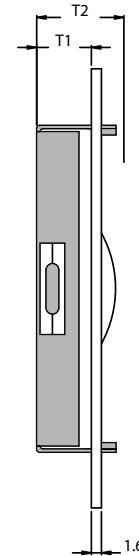
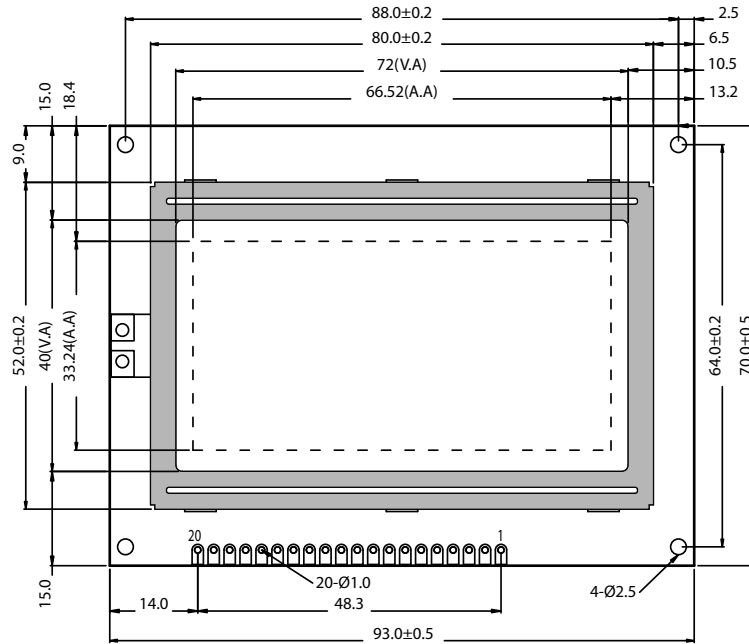
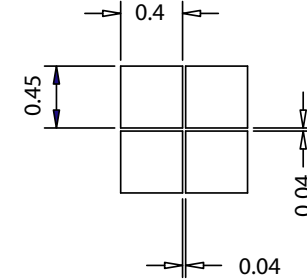


| PIN NO | Symbol |
|--------|--------|
| 1      | FGND   |
| 2      | VSS    |
| 3      | VDD    |
| 4      | V0     |
| 5      | /WR    |
| 6      | /RD    |
| 7      | /CE    |
| 8      | C/D    |
| 9      | VEE    |
| 10     | /RET   |
| 11     | DB0    |
| 18     | DB7    |
| 19     | FS     |
| 20     | NC     |
| A      | LED+   |
| K      | LED-   |



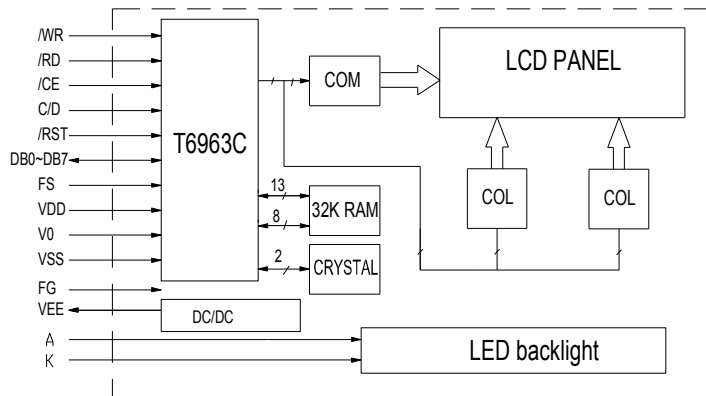
DOTS DETAIL



### Feature

- 128x64dots display
- Built-in controller (T6963C)
- +5V power supply
- 1/64 duty cycle; 1/9 bias;
- STN or FSTN mode
- With LED backlight or EL backlight

### Block diagram:



### Mechanical thickness

| LCD module thickness      | T1  | T2   | UNIT |
|---------------------------|-----|------|------|
| Without or EL backlight   | 4.6 | 9.0  | mm   |
| With edge LED backlight   | --- | ---  | mm   |
| With LED bottom backlight | 8.7 | 13.0 | mm   |

### Mechanical data

| Item             | Standard  | Unit |
|------------------|-----------|------|
| Module dimension | 93.0x70.0 | mm   |
| Viewing area     | 72.0x40.0 | mm   |
| Dot size         | 0.48x0.48 | mm   |
| Dot pitch        | 0.52x0.52 | mm   |

### Absolute Maximum Rating

| Item          | Symbol  | Standard |       |     | Unit |
|---------------|---------|----------|-------|-----|------|
|               |         | Min      | Typ   | Max |      |
| Input voltage | VI      | -0.3     | ----- | 5.5 | V    |
| Power supply  | VDD-VSS | -0.3     | ----- | VDD |      |

### Electronical characteristics

| Item                                                           | Symbol | Condition            | Standard |     |     | Unit |
|----------------------------------------------------------------|--------|----------------------|----------|-----|-----|------|
|                                                                |        |                      | Min      | Typ | Max |      |
| Input voltage                                                  | VDD    | +5V                  | 4.7      | 5.0 | 5.5 | V    |
|                                                                |        | +3.3V                | ---      | --- | --- | V    |
| Supply current                                                 | IDD    | VDD=5V               | ---      | 7.2 | 8   | mA   |
| Recommended LCD driving voltage for normal temp version module | VDD-V0 | -20°C                | ---      | --- | --- | V    |
|                                                                |        | 0 °C                 | ---      | 9.8 | --- |      |
|                                                                |        | 25°C                 | ---      | 9.5 | --- |      |
|                                                                |        | 50°C                 | ---      | 9.3 | --- |      |
| LED forward voltage                                            | VF     | 25°C                 | ---      | 4.2 | 5.0 | V    |
| LED forward current                                            | IF     | 25°C                 | ---      | 360 | --- | mA   |
| EL power supply current                                        | IEL    | VEL=110V<br>AC 400Hz | ---      | --- | --- | mA   |