

Photodiode array chip FM055P

Description

FM055P is designed to drive MOSFETs, including SiC MOSFETs, with threshold voltage 3-7 V and can be used in MOS-relay within one package or as a separate device. The spectral response range is 850 – 940 nm. The chip should be used for face-to-face coupling design together with one IR-LED.

Features

- Contact pad’s material – Aluminium
- Contact pad’s size 0.10 x 0.10 mm
- Module size 1.5 x 2.22 mm (including scribe line)
- Scribe line width 80 μm
- Chip thickness 0.32 mm \pm 0.02 mm

Absolute maximum ratings

| | |
|--------------------------------|----------------|
| Storage Temperature | -65°C to 150°C |
| Operating Junction Temperature | -55°C to 125°C |



- 1- Output
- 2 - GND
- 3 - GND
- 4 - Output

Electrical characteristics (T = 25 °C)

| Parameter | Symbol | Unit | Min. | Typ. | Max. | Condition |
|-----------------------|-----------|---------------|------|------|------|-----------|
| Open Circuit Voltage | V_{OC} | V | 18.0 | 20.0 | - | 1 |
| Open Circuit Voltage | V_{OC} | V | - | 21.7 | - | 2 |
| Short Circuit Current | I_{SC} | μA | 1.6 | 3.2 | - | 1 |
| Short Circuit Current | I_{SC} | μA | - | 10.0 | - | 2 |
| Output Voltage | V_O | V | - | - | 0.9 | 3 |
| Turn-On Time | T_{ON} | ms | - | 0.3 | 1.0 | 4 |
| Turn-Off Time | T_{OFF} | ms | - | 0.1 | 0.3 | 4 |

1 – Light source with peak wavelength $\lambda = 850 \pm 20$ nm that provides surface irradiance $E = 20$ mW/cm² is used.

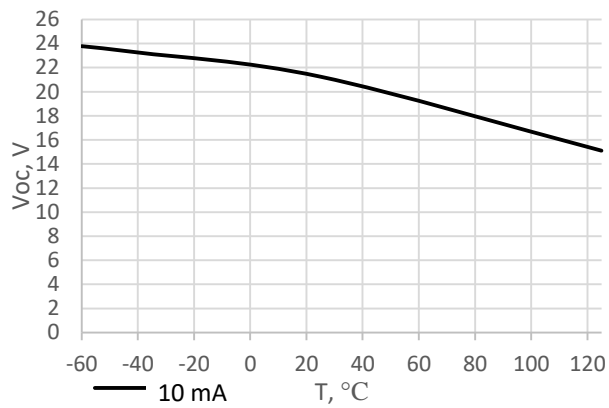
2 – Testing condition: $I_F = 10$ mA. The PDA is assembled with IR-LED of $P = 1500$ μW (at 10 mA) with peak wavelength $\lambda = 850 \pm 20$ nm.

3 – No light. $I_o = 100$ μA

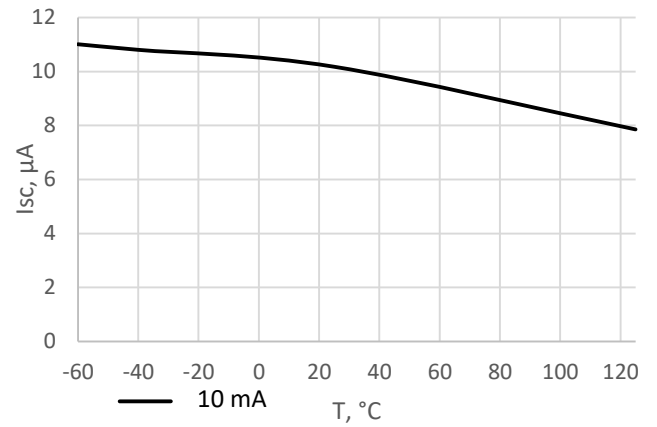
4 – Typical value at $I_F = 30$ mA, $C_L = 250$ pF. The PDA is assembled with IR-LED of $P > 1500$ μW (at 10 mA) with peak wavelength $\lambda = 850 \pm 20$ nm. The measurement was performed in accordance with the specified testing circuit and diagram.

Typical characteristics

Typical characteristics` measurement is performed on PDA chip assembled with IR-LED chip of $P = 1500 \mu\text{W}$ (at 10 mA) with peak wavelength $\lambda = 850 \pm 20 \text{ nm}$.



Picture 1 – typical characteristics $V_{OC}(T)$



Picture 2 – typical characteristics $I_{SC}(T)$

Dynamic parameters testing circuit and diagram

