

## Photodiode array chip FM054P

### Description

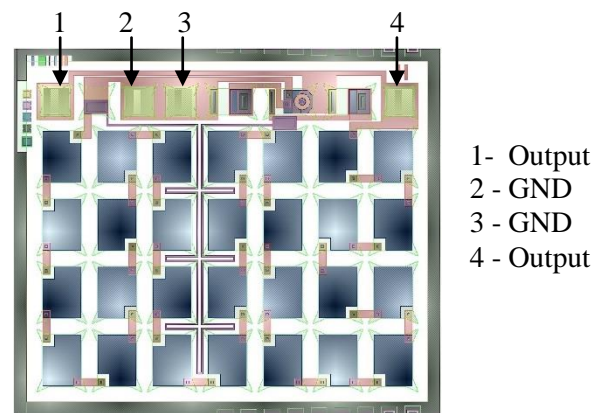
FM054P is designed to drive MOSFETs, including SiC MOSFETs, with threshold voltage 3-7 V and can be used in MOS-relay within one package or as a separate device. The spectral response range is 850 – 940 nm. The chip should be used for face-to-face coupling design together with one IR-LED.

### Features

- Contact pad’s material – Aluminium
- Contact pad’s size 0.10 x 0.10 mm
- Module size 1.4 x 1.2 mm (including scribe line)
- Scribe line width 80  $\mu\text{m}$
- 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



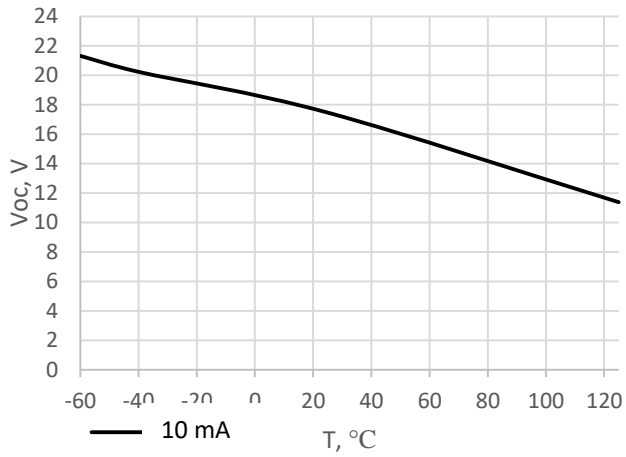
### Electrical characteristics (T = 25 °C)

Parameter	Symbol	Unit	Min.	Typ.	Max.	Condition
Open Circuit Voltage	V <sub>OC</sub>	V	14.0	15.5	-	1
Open Circuit Voltage	V <sub>OC</sub>	V	-	17	-	2
Short Circuit Current	I <sub>SC</sub>	$\mu\text{A}$	2.0	2.2	-	1
Short Circuit Current	I <sub>SC</sub>	$\mu\text{A}$	-	8.1	-	2
Output Voltage	V <sub>O</sub>	V	-	-	0.9	3
Turn-On Time	T <sub>ON</sub>	ms	-	0.4	1	4
Turn-Off Time	T <sub>OFF</sub>	ms	-	0.05	0.3	4

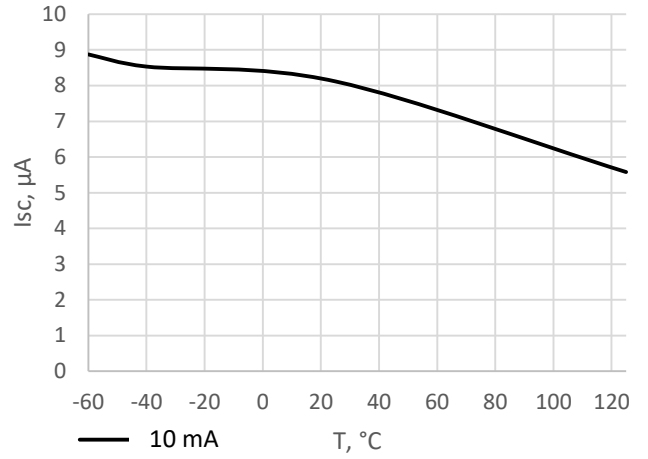
- 1 – Light source with peak wavelength  $\lambda = 850 \pm 20$  nm that provides surface irradiance  $E = 20 \text{ mW/cm}^2$  is used.
- 2 – Testing condition:  $I_F = 10 \text{ mA}$ . The PDA is assembled with IR-LED of  $P = 1500 \mu\text{W}$  (at 10 mA) with peak wavelength  $\lambda = 850 \pm 20$  nm.
- 3 – No light.  $I_o = 100 \mu\text{A}$
- 4 – Typical value at  $I_F = 10 \text{ mA}$ ,  $C_L = 330 \text{ pF}$ . The PDA is assembled with IR-LED of  $P = 1500 \mu\text{W}$  (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

