PROTON

JSC “Proton”

Photodiode array chip FM053P

Description

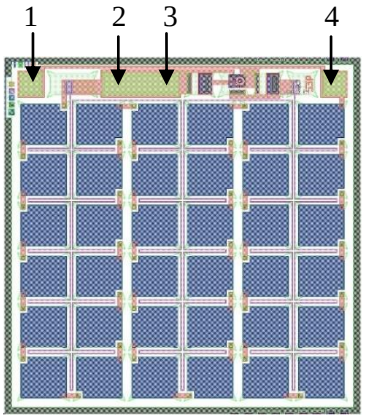
FM053P is designed to drive MOSFETs, including SiC MOSFETs, with threshold voltage 3-7 V and can be used in MOS-relay within one package or as a separate device. The spectral response range is 850 – 940 nm. The chip should be used for face-to-face coupling design together with two IR-LEDs in accordance with the PDA surface illumination scheme.

Features

- Contact pad’s material – Aluminium
- Contact pad’s size 0.13 x 0.13 mm
- Module size 2.0 x 2.0 mm (including scribe line)
- Scribe line width 80 µm
- Chip thickness 0.32 mm ± 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

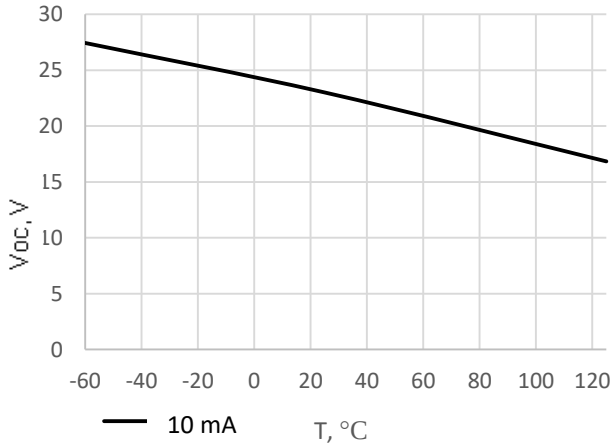
Electrical characteristics (T = 25 °C)

Parameter	Symbol	Unit	Min.	Typ.	Max.	Condition
Open Circuit Voltage	V_{OC}	V	18.0	20.0	-	1
Open Circuit Voltage	V_{OC}	V	-	22	-	2
Short Circuit Current	I_{SC}	µA	1.6	2.2	-	1
Short Circuit Current	I_{SC}	µA	-	23		2
Output Voltage	V_O	V	-	-	0.9	3
Turn-On Time	T_{ON}	ms	-	0.6	1	4
Turn-Off Time	T_{OFF}	ms	-	0.05	0.3	4

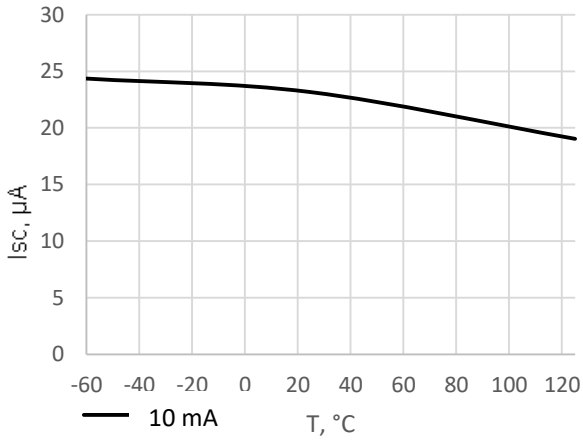
1 – Light source with peak wavelength λ = 850 ±20 nm that provides surface irradiance E = 20 mW/cm^2 is used.
2 – Testing condition: I_F = 10 mA. The PDA is assembled with two IR-LEDs of P = 2000 µW (at 10 mA) each with peak wavelength λ = 850 ±20 nm.
3 – No light. I_O=100 µA
4 – Typical value at I_F = 10 mA, C_L = 1000 pF. The PDA is assembled with two LEDs of P = 2000 µW (at 10 mA) each with peak wavelength λ = 850 ±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 = 2000 μW (at 10 mA) with peak wavelength λ = 850 ±20 nm. The recommended IR-LED chips` location is specified at PDA surface illumination scheme.

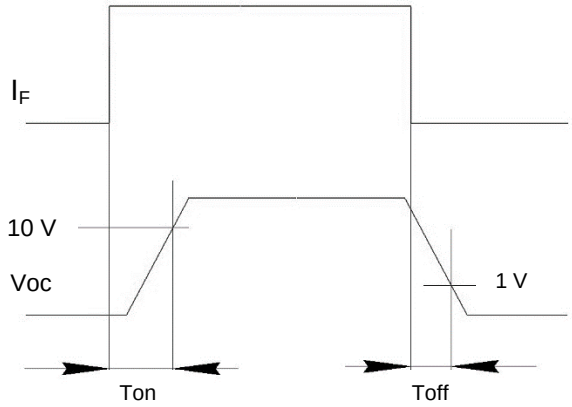


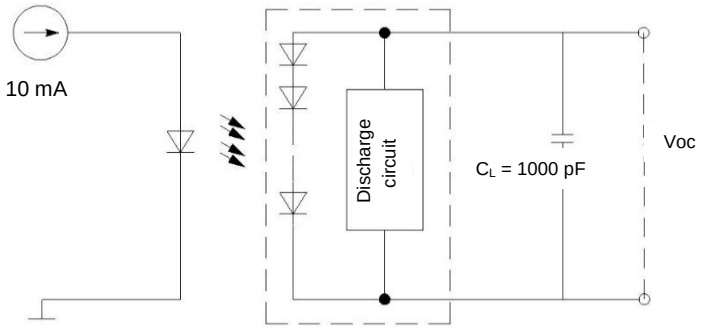
Picture 1 – typical characteristics V_{OC} (T)



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

Dynamic parameters testing circuit and diagram





PDA surface illumination scheme