

# 12 Recommended operating conditions

The operating conditions are the physical parameters that the device can operate within.

Symbol	Parameter	Min.	Nom.	Max.	Units
VDD	VDD supply voltage	1.7		3.6	V
VDD <sub>EXT</sub>	VDD supply voltage under extended operating temperature	1.7		3.4	V
VDD <sub>POR</sub>	VDD supply voltage needed during power-on reset	1.75			V
TA	Operating temperature	-40	25	85	°C
TA <sub>EXT</sub>	Extended operating temperature	85		105	°C
T <sub>RST</sub>	Recommended storage temperature			40	°C
RH <sub>RST</sub>	Recommended storage relative humidity			90	%

Table 92: Recommended operating conditions

## 12.1 Extended operating temperature

The operating temperature range for the device is defined in [Recommended operating conditions](#) on page 923. The range extends from TA minimum to TA<sub>EXT</sub> maximum.

Some electrical parameters are valid only for the TA operating temperature conditions. When this is the case, an additional parameter for the TA<sub>EXT</sub> extended operating temperature condition is provided.

## 12.2 CSP light sensitivity

All CSP package variants are sensitive to visible and close-range infrared light. This means that a final product design must shield the chip properly, either by final product encapsulation or by shielding/coating of the CSP device.

All CSP package variants have a backside coating, where the marking side of the device is covered with a light absorbing film, while the side edges and the ball side of the device are still exposed and need to be protected.