

# Qstar-6T

## UHF Sensor Chip

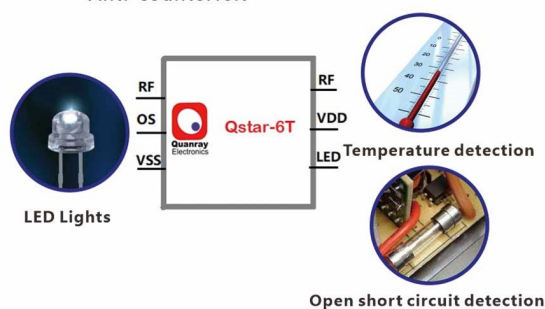
Qstar-6T is an Internet of things (IOT) RFID chip that conforms to EPC global Gen2 protocol and has sensor function. The chip has led driving signal output, which can select and light external LED as required. The built-in temperature sensor has the characteristics of high accuracy and low power consumption, and realizes the real-time temperature reading without decreasing the sensitivity. The chip can also convert the energy of RF field into DC voltage output, drive other external devices, and build RFID IOT system which can work without battery. The unique open and short-circuit detection sensor can monitor the on/off state of external devices.

## Features

- Read sensitivity up to -18dBm
- Write sensitivity up to -12dBm
- Storage temperature range:-55°C ~ +125 °C
- Operating temperature (Toper): -40°C to +125 °C
- EPC global Gen 2(V1.2.0)
- Select TAG LED light drive sensor
- Open short detect sensor
- Authentication function
- Temperature detection function
- EPC Bank: 528 bit(Include 16 bit CRC)
- TID Bank: 128 bit
- Reserved Bank: 208bit
- User: 2K bit
- Block write/erase function
- Block permalock function ( Qstar-6T' s block size is 8 word)
- Area read/write lock

## Key Applications

- Item Level Tagging (Apparel tagging)
- Logistics/supply chain management
- Warehouse management
- Asset management
- Identification
- Air baggage tagging
- Pallet / Case tracking
- Anti-counterfeit



## Operating Conditions & Electrical Characteristics

Parameters	Conditions	Min	Typ	Max	Unit
<b>Air Interface Characteristics</b>					
<b>Operating Frequency</b>	Supported Frequency Range	840	-	960	MHz
<b>Read Sensitivity</b>	Normal Read	-	-19 <sup>[1]</sup>	-	dBm
<b>Write Sensitivity</b>	Normal Write, Block Write	-	-13 <sup>[1]</sup>	-	dBm
<b>Maximum operating power</b>	-	-	-	20	dBm
<b>Equivalent input parallel resistance</b>	At minimum input power	-	800 <sup>[3][4][5]</sup>	-	Ω
<b>Equivalent input parallel capacitance</b>	At minimum input power	-	1.4 <sup>[3][4][5]</sup>	-	pF
<b>Memory Characteristics</b>					
<b>Test Temperature Range</b>	Temperature	-40	-	125	°C
<b>Temperature Fluctuation Error</b>	Temperature	0.4	-	-	°C
<b>Data retention</b>	Temperature 55°C	-	15	-	year
<b>Data retention</b>	Temperature 85°C	-	30	-	year
<b>Endurance</b>	Temperature 85°C	-	100,000	-	cycle

[1] Sensitivity on a dipole antenna. [3] At minimum operating power. [4] Both intrinsic capacitance and antenna mount parasitic capacitance are included.  
[5] Measured by Network Analyzer on straps.



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