

Other High Temp Parts on Protec GmbH Linecard:

- ARM M0 Processor
- SRAM 18Mb
- Flash Memory up to 1Gb
- OpAmps
- Analog Switch
- Multiplexer
- 8-bit Micro Controller
- Oscillators
- EEPROM
- FPGAs
- A/D Converter
- ASICs
- Magnetics / Transformers
- CAN Transceiver
- RS-422/485 Transceivers
- SiC Components
- Transistor Arrays
- Supervisory
- Real Time Clock
- Switch mode Controller
- Line Drivers and Receivers
- Analog Engine

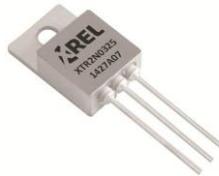


X-REL New MosFets for HighTemperature Applications

X-REL Semiconductor, the specialist in high-reliability and extreme-temperature Integrated Circuits, broadens its family XTR2N of high-temperature MOSFET transistors by introducing two new mid-power P-channel and two small-signal P- and N-channel transistors. Intended for high-reliability, extreme temperature and extended lifetime applications such as power conversion, power management, level translation and sensor interfaces, the new devices being released present excellent switching and linear characteristics, as well as very low leakage current.

Mid-power P-channel transistors introduced are divided into two families depending upon the maximum operating voltage.

Devices **XTR2N0325** and **XTR2N0350** are intended for a maximum operation drain-source voltage of -30V, whereas **XTR2N0525** and **XTR2N0550** can sustain drain-source voltages of up to -50V. In each sub-family, two different transistor sizes are available providing two possible maximum drain currents.



The small signal transistors released are the **XTR2N0307** 30V P-channel MOSFET, and the **XTR2N0807** 80V N-channel MOSFET. The **XTR2N0307** small signal 30V P-channel has an on-state resistance at 230°C of 7Ω, whereas that of the **XTR2N0807** small signal 80V N-channel is 9.1Ω, with respective continuous drain currents of 350mA (900mA peak) and 200mA (450mA peak).

| | Type | Power | Max V _{DS} | R _{ON} @230°C | I _D Peak @230°C |
|------------------|------|--------------|---------------------|------------------------|----------------------------|
| XTR2N0307 | P | Small Signal | 30V | 7Ω | 900mA |
| XTR2N0325 | P | Mid-power | 30V | 1.08Ω | 7.5A |
| XTR2N0350 | P | Mid-power | 30V | 0.49Ω | 16.5A |
| XTR2N0425 | N | Mid-power | 40V | 850mΩ | 5.2A |
| XTR2N0450 | N | Mid-power | 40V | 370mΩ | 12.2A |
| XTR2N0525 | P | Mid-power | 50V | 1.5A | 4.8Ω |
| XTR2N0550 | P | Mid-power | 50V | 3.2A | 2.1Ω |
| XTR2N0807 | N | Small Signal | 80V | 9.1Ω | 420mA |
| XTR2N0825 | N | Mid-power | 80V | 1800mΩ | 5A |
| XTR2N0850 | N | Mid-power | 80V | 790mΩ | 11.5A |

As all other X-REL Semiconductor products, parts from the XTR2N transistors family are able to reliably operate well below and above the -60°C +230°C (5 years at +230°C) temperature range. Being operational at high temperatures is mandatory not only in applications where the environment is at elevated temperature, but also where self-heating of a power device makes the temperature increase inside the application casing. Additionally, all X-REL Semiconductor products can be used in applications running at lower temperatures (e.g. from 100°C to 200°C) where extended lifetime is expected or where failing is not an option. For example, the expected lifetime of X-REL Semiconductor parts in a driver application operating at T_j=150°C is over 35 years.

The XTR2N devices are already available and can be immediately deployed on niche as well as on large-scale markets in high-reliability compact hermetic or plastic packages, as well as tested bare dies.