

## General

## Pro electron type numbering

### PRO ELECTRON TYPE NUMBERING SYSTEM

#### Basic type number

This type designation code applies to **discrete semiconductor** devices (not integrated circuits), multiples of such devices, semiconductor chips and Darlington transistors.

#### FIRST LETTER

The first letter gives information about the material for the active part of the device.

- |   |   |
|---|---|
| A | Germanium or other material with a band gap of 0.6 to 1 eV                  |
| B | Silicon or other material with a band gap of 1 to 1.3 eV                    |
| C | Gallium arsenide (GaAs) or other material with a band gap of 1.3 eV or more |
| R | Compound materials, e.g. cadmium sulphide.                                  |

#### SECOND LETTER

The second letter indicates the function for which the device is primarily designed. The same letter can be used for multi-chip devices with similar elements.

In the following list low power types are defined by  $R_{th(j-mb)} > 15 \text{ K/W}$  and power types by  $R_{th(j-mb)} \leq 15 \text{ K/W}$ .

- |   |  |
|---|--|
| A | Diode; signal, low power   |
| B | Diode; variable capacitance  |
| C | Transistor; low power, audio frequency   |
| D | Transistor; power, audio frequency   |
| E | Diode; tunnel  |
| F | Transistor; low power, high frequency  |
| G | Multiple of dissimilar devices/miscellaneous devices; e.g. oscillators. Also with special third letter; see under Section "Serial number/special third letter" |
| H | Diode; magnetic sensitive  |
| L | Transistor; power, high frequency  |
| N | Photocoupler   |
| P | Radiation detector; e.g. high sensitivity photo-transistor; with special third letter  |
| Q | Radiation generator; e.g. LED, laser; with special third letter  |
| R | Control or switching device; e.g. thyristor, low power; with special third letter  |
| S | Transistor; low power, switching   |

- |   |   |
|---|---|
| T | Control or switching device; e.g. thyristor, low power; with special third letter             |
| U | Transistor; power, switching  |
| W | Surface acoustic wave device  |
| X | Diode; multiplier, e.g. varactor, step recovery   |
| Y | Diode; rectifying, booster  |
| Z | Diode; voltage reference or regulator, transient suppressor diode; with special third letter. |

#### SERIAL NUMBER/SPECIAL THIRD LETTER

The number comprises three figures running from 100 to 999 for devices primarily intended for consumer equipment, or one letter (Z, Y, X, etc.) and two figures running from 10 to 99 for devices primarily intended for industrial or professional equipment<sup>(1)</sup>. The letter has no fixed meaning, except in the following cases:

- |   |   |
|---|---|
| A | For triacs, after second letter 'R' or 'T'  |
| F | For emitters and receivers in fibre-optic communication, after second letter 'G', 'P' or 'Q'. When the second letter is 'G', the first letter should be defined in accordance with the material of the main optical device. |
| L | For lasers in non-fibre-optic applications, after second letter 'G' or 'Q'. When the second letter is 'G', the first letter should be defined in accordance with the material of the main optical device.                   |
| O | For opto-triacs, after second letter 'R'  |
| T | For 3-state bicolour LEDs, after second letter 'Q'  |
| W | For transient voltage suppressor diodes, after second letter 'Z'.   |

#### Version letter(s)

One or two letters may be added to the basic type number to indicate minor electrical or mechanical variants of the basic type. The letters never have a fixed meaning, except that the letter 'R' indicates reverse polarity and the letter 'W' indicates a surface mounted device (SMD).

(1) When the supply of these serial numbers is exhausted, the serial number may be expanded to three figures for industrial types and four figures for consumer types.

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### Suffix

Sub-classification can be used for devices supplied in a wide range of variants, called associated types. The following sub-coding suffixes are in use:

#### VOLTAGE REFERENCE AND VOLTAGE REGULATOR DIODES

One letter and one number, preceded by a hyphen (-). The letter, if required, indicates the nominal tolerance of the Zener voltage.

- A 1%
- B 2%
- C 5%
- D 10%
- E 20%.

In the case of a 3% tolerance, the letter 'F' is used.

The number denotes the typical operating (Zener) voltage, related to the nominal current rating for the entire range. The letter 'V' is used in place of the decimal point.

Example: BZY74-C6V3 or -C10.

#### TRANSIENT VOLTAGE SUPPRESSOR DIODES

One number, preceded by a hyphen (-). The number indicates the maximum recommended continuous reversed (stand-off) voltage,  $V_R$ . The letter 'V' is used in place of the decimal point.

Example: BZW70-9V1 or -39.

The letter 'B' may be used immediately after the last number, to indicate a bidirectional suppressor diode.

Example: BZW10-15B.

#### CONVENTIONAL AND CONTROLLED AVALANCHE RECTIFIER DIODES AND THYRISTORS

One number, preceded by a hyphen (-). The number indicates the rated maximum repetitive peak reverse voltage,  $V_{RRM}$ , or the rated repetitive peak off-state voltage,  $V_{DRM}$ , whichever is the lower. Reversed polarity with respect to the case is indicated by the letter 'R' immediately after the number.

Example: BYT-100 or -100R.

#### RADIATION DETECTORS

One number, preceded by a hyphen (-). The number indicates the depletion layer in micrometres ( $\mu\text{m}$ ). The resolution is indicated by a version letter.

Example: BPX10-2A.

#### ARRAY OF RADIATION DETECTORS AND GENERATORS

One number, preceded by a hyphen (-). The number indicates the number of basic devices assembled into the array.

Examples: BPW50-6, BPW50-9, BPW50-12.

#### HIGH FREQUENCY POWER TRANSISTORS

One number, preceded by a hyphen (-). The number indicates the supply voltage.

Example: BLU80-24.