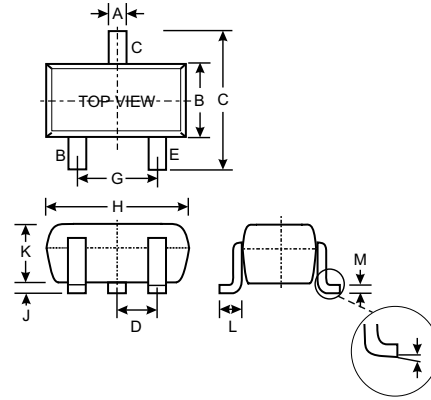


**Features**

- Ultra Miniature Surface Mount Package
- Complementary PNP Type Available (2DA1774Q,R,S)

**Mechanical Data**

- Case: SOT-523, Molded Plastic
- Case material - UL Flammability Rating Classification 94V-0
- Moisture sensitivity: Level 1 per J-STD-020A
- Terminals: Solderable per MIL-STD-202, Method 208
- Terminal Connections: See diagram
- Marking (See Page 2): 2DC4617Q: 8D  
2DC4617R: 8E  
2DC4617S: 8F
- Ordering & Date Code Information: See Page 2
- Weight: 0.002 grams (approx.)



| SOT-523              |      |      |      |
|----------------------|------|------|------|
| Dim                  | Min  | Max  | Typ  |
| A                    | 0.15 | 0.30 | 0.22 |
| B                    | 0.75 | 0.85 | 0.80 |
| C                    | 1.45 | 1.75 | 1.60 |
| D                    | —    | —    | 0.50 |
| G                    | 0.90 | 1.10 | 1.00 |
| H                    | 1.50 | 1.70 | 1.60 |
| J                    | 0.00 | 0.10 | 0.05 |
| K                    | 0.60 | 0.80 | 0.75 |
| L                    | 0.10 | 0.30 | 0.22 |
| M                    | 0.10 | 0.20 | 0.12 |
| N                    | 0.45 | 0.65 | 0.50 |
| α                    | 0°   | 8°   | —    |
| All Dimensions in mm |      |      |      |

**Maximum Ratings** @ T<sub>A</sub> = 25°C unless otherwise specified

| Characteristic                                   | Symbol                            | 2DC4617Q/R/S | Unit |
|--------------------------------------------------|-----------------------------------|--------------|------|
| Collector-Base Voltage                           | V <sub>CBO</sub>                  | 60           | V    |
| Collector-Emitter Voltage                        | V <sub>CEO</sub>                  | 50           | V    |
| Emitter-Base Voltage                             | V <sub>EBO</sub>                  | 7.0          | V    |
| Collector Current - Continuous (Note 1)          | I <sub>C</sub>                    | 150          | mA   |
| Power Dissipation (Note 1)                       | P <sub>d</sub>                    | 150          | mW   |
| Thermal Resistance, Junction to Ambient (Note 1) | R <sub>θJA</sub>                  | 833          | °C/W |
| Operating and Storage and Temperature Range      | T <sub>J</sub> , T <sub>STG</sub> | -55 to +150  | °C   |

**Electrical Characteristics** @ T<sub>A</sub> = 25°C unless otherwise specified

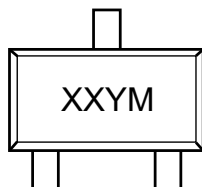
| Characteristic                       | Symbol               | Min               | Max               | Unit | Test Condition                                         |
|--------------------------------------|----------------------|-------------------|-------------------|------|--------------------------------------------------------|
| <b>OFF CHARACTERISTICS (Note 2)</b>  |                      |                   |                   |      |                                                        |
| Collector-Base Breakdown Voltage     | V <sub>(BR)CBO</sub> | 60                | —                 | V    | I <sub>C</sub> = 50μA, I <sub>E</sub> = 0              |
| Collector-Emitter Breakdown Voltage  | V <sub>(BR)CEO</sub> | 50                | —                 | V    | I <sub>C</sub> = 1.0mA, I <sub>B</sub> = 0             |
| Emitter-Base Breakdown Voltage       | V <sub>(BR)EBO</sub> | 7.0               | —                 | V    | I <sub>E</sub> = 50μA, I <sub>C</sub> = 0              |
| Collector Cutoff Current             | I <sub>CBO</sub>     | —                 | 100               | nA   | V <sub>CB</sub> = 60V                                  |
| Emitter Cutoff Current               | I <sub>EBO</sub>     | —                 | 100               | nA   | V <sub>EB</sub> = 7.0V                                 |
| <b>ON CHARACTERISTICS (Note 2)</b>   |                      |                   |                   |      |                                                        |
| DC Current Gain                      | h <sub>FE</sub>      | 120<br>180<br>270 | 270<br>390<br>560 | —    | V <sub>CE</sub> = 6.0V, I <sub>C</sub> = 1.0mA         |
| Collector-Emitter Saturation Voltage | V <sub>CE(SAT)</sub> | —                 | 0.4               | V    | I <sub>C</sub> = 50mA, I <sub>B</sub> = 5.0mA          |
| <b>SMALL SIGNAL CHARACTERISTICS</b>  |                      |                   |                   |      |                                                        |
| Output Capacitance                   | C <sub>obo</sub>     | 2.0 Typ.          | 3.5               | pF   | V <sub>CB</sub> = 12V, f = 1.0MHz, I <sub>E</sub> = 0  |
| Current Gain-Bandwidth Product       | f <sub>T</sub>       | 180 Typ.          | —                 | MHz  | V <sub>CE</sub> = 12V, I <sub>E</sub> = -2mA, f = 1MHz |

- Notes:
1. Part mounted on FR-4 board with recommended pad layout, which can be found on our website at <http://www.diodes.com/datasheets/ap02001.pdf>.
  2. Short duration pulse test used to minimize self-heating effect.

**Ordering Information** (Note 3)

| Device     | Packaging | Shipping         |
|------------|-----------|------------------|
| 2DC4617Q-7 | SOT-523   | 3000/Tape & Reel |
| 2DC4617R-7 | SOT-523   | 3000/Tape & Reel |
| 2DC4617S-7 | SOT-523   | 3000/Tape & Reel |

Notes: 3. For Packaging Details, go to our website at <http://www.diodes.com/datasheets/ap02007.pdf>.

**Marking Information**

XX = Product Type Marking Code (See Page 1, e.g. 8D = 2DC4617Q)  
 YM = Date Code Marking  
 Y = Year (ex: N = 2002)  
 M = Month (ex: 9 = September)

Date Code Key

| Year | 1998 | 1999 | 2000 | 2001 | 2002 | 2003 | 2004 |
|------|------|------|------|------|------|------|------|
| Code | J    | K    | L    | M    | N    | P    | R    |

| Month | Jan | Feb | March | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |
|-------|-----|-----|-------|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Code  | 1   | 2   | 3     | 4   | 5   | 6   | 7   | 8   | 9   | O   | N   | D   |