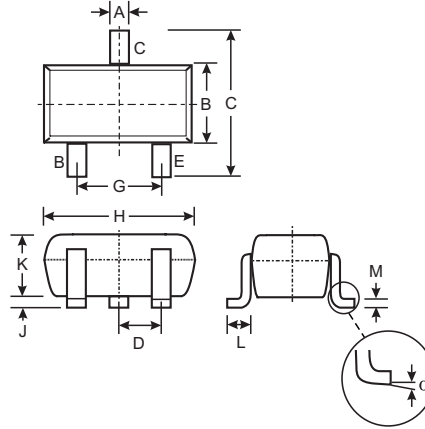


Features

- Ultra Miniature Surface Mount Package
- Complementary NPN Type Available (2DC4617Q,R,S)
- Lead Free/RoHS Compliant (Note 3)

Mechanical Data

- Case: SOT-523
- Case Material: Molded Plastic. UL Flammability Classification Rating 94V-0
- Moisture sensitivity: Level 1 per J-STD-020C
- Terminal Connections: See Diagram
- Lead Free Plating (Matte Tin annealed over Alloy 42 leadframe).
- Marking & Type Code Information (See Last Page):
2DA1774Q: 8A
2DA1774R: 8B
2DA1774S: 8C
- Ordering Information: See Last Page
- 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_A = 25°C unless otherwise specified

| Characteristic | Symbol | 2DA1774Q/R/S | Unit |
|---|------------------|--------------|------|
| Collector-Base Voltage | V _{CB0} | -60 | V |
| Collector-Emitter Voltage | V _{CE0} | -50 | V |
| Emitter-Base Voltage | V _{EBO} | -6.0 | V |
| Collector Current - Continuous (Note 1) | I _C | 150 | mA |
| Power Dissipation (Note 1) | P _d | 150 | mW |

Thermal Characteristics @ T_A = 25°C unless otherwise specified

| Characteristic | Symbol | 2DA1774Q/R/S | Unit |
|--|-----------------------------------|--------------|------|
| Thermal Resistance, Junction to Ambient (Note 1) | R _{θJA} | 833 | °C/W |
| Operating and Storage and Temperature Range | T _j , T _{STG} | -55 to +150 | °C |

Electrical Characteristics @ T_A = 25°C unless otherwise specified

| Characteristic | Symbol | Min | Max | Unit | Test Condition |
|--------------------------------------|---|-------------------|-------------------|------|--|
| OFF CHARACTERISTICS (Note 2) | | | | | |
| Collector-Base Breakdown Voltage | V _{(BR)CBO} | -60 | — | V | I _C = -50μA, I _E = 0 |
| Collector-Emitter Breakdown Voltage | V _{(BR)CEO} | -50 | — | V | I _C = 1.0μA, I _B = 0 |
| Emitter-Base Breakdown Voltage | V _{(BR)EBO} | -6.0 | — | V | I _E = -50μA, I _C = 0 |
| Collector Cutoff Current | I _{CB0} | — | -100 | nA | V _{CB} = -60V |
| Emitter Cutoff Current | I _{EBO} | — | -100 | nA | V _{EB} = -6.0V |
| ON CHARACTERISTICS (Note 2) | | | | | |
| DC Current Gain | 2DA1774Q 2DA1774R 2DA1774S h _{FE} | 120 180 270 | 270 390 560 | — | V _{CE} = -6.0V, I _C = -1.0mA |
| Collector-Emitter Saturation Voltage | V _{CE(SAT)} | — | -0.5 | V | I _C = -50mA, I _B = -5.0mA |
| SMALL SIGNAL CHARACTERISTICS | | | | | |
| Output Capacitance | C _{obo} | 4.0 Typ. | 5.0 | pF | V _{CB} = -12V, f = 1.0MHz, I _E = 0 |
| Current Gain-Bandwidth Product | f _T | 140 Typ. | — | MHz | V _{CE} = -12V, I _C = -2.0mA, f = 30MHz |

- 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.
 3. No purposefully added lead.

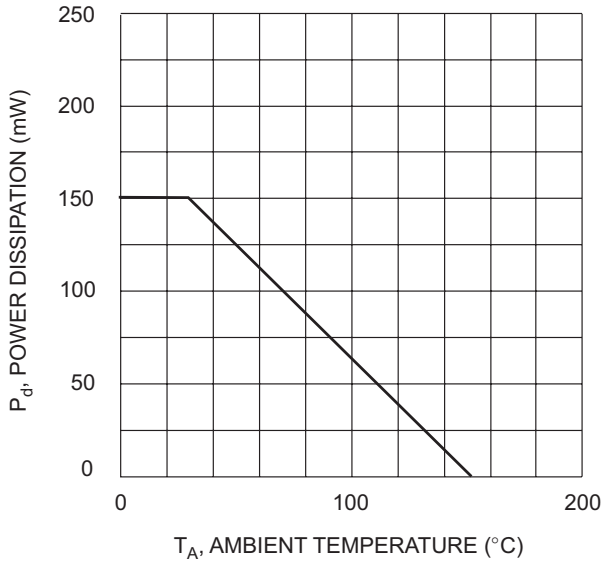


Fig. 1 Power Derating Curve, Total Package

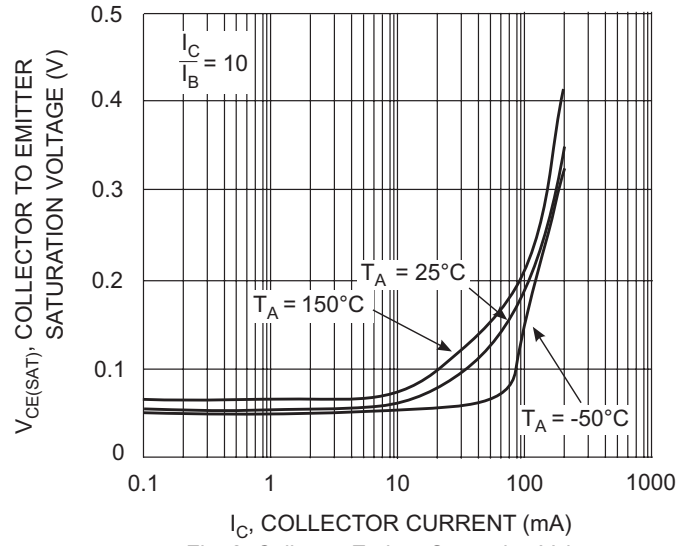


Fig. 2 Collector Emitter Saturation Voltage vs. Collector Current

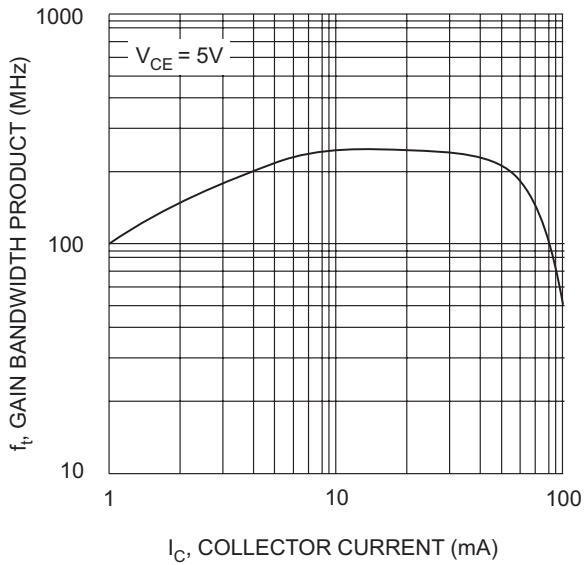
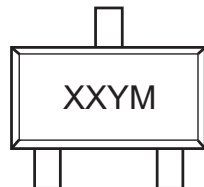


Fig. 3, Gain Bandwidth Product vs Collector Current

Ordering Information (Note 4)

| Device | Packaging | Shipping |
|--------------|-----------|------------------|
| 2DA1774Q-7-F | SOT-523 | 3000/Tape & Reel |
| 2DA1774R-7-F | SOT-523 | 3000/Tape & Reel |
| 2DA1774S-7-F | SOT-523 | 3000/Tape & Reel |

Notes: 4. 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. 8A = 2DA1774Q)
 YM = Date Code Marking
 Y = Year (ex: N = 2002)
 M = Month (ex: 9 = September)

Date Code Key

| Year | 2002 | | 2003 | | 2004 | 2005 | 2006 | 2007 | 2008 | 2009 | | |
|-------|------|-----|-------|-----|------|------|------|------|------|------|-----|-----|
| Code | N | | P | | R | S | T | U | V | W | | |
| 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 |

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