

Features

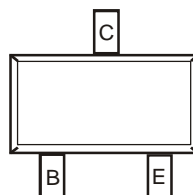
- Epitaxial Planar Die Construction
- Complementary NPN Type Available (2DC4617Q,R,S)
- **Lead Free/RoHS Compliant (Note 1)**
- **"Green" Device (Notes 2 & 3)**

Mechanical Data

- Case: SOT-523
- Case Material: Molded Plastic, "Green" Molding Compound, Note 5. UL Flammability Classification Rating 94V-0
- Moisture Sensitivity: Level 1 per J-STD-020
- Terminal Connections: See Diagram
- Lead Free Plating (Matte Tin annealed over Alloy 42 leadframe).
- Weight: 0.002 grams (approximate)



Top View



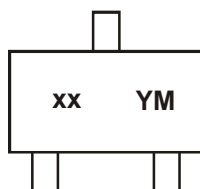
Pin-Out Configuration

Ordering Information (Note 4)

| Part Number | Case | Packaging |
|--------------|---------|------------------|
| 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:
2. No purposefully added lead.
 2. Diodes Inc.'s "Green" policy can be found on our website at <http://www.diodes.com>.
 3. Product manufactured with Date Code UO (week 40, 2007) and newer are built with Green Molding Compound. Product manufactured prior to Date Code UO are built with Non-Green Molding Compound and may contain Halogens or Sb2O3 Fire Retardants.
 4. For packaging details, go to our website at <http://www.diodes.com>.

Marking Information



xx = Product Type Marking Code:

2DA1774Q = 8A

2DA1774R = 8B

2DA1774S = 8C

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 | 2010 | 2011 | 2012 | 2013 | 2014 | 2015 |
|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|
| Code | N | P | R | S | T | U | V | W | X | Y | Z | A | B | C |

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

Maximum Ratings @T_A = 25°C unless otherwise specified

| Characteristic | Symbol | Value | Unit |
|---|------------------|-------|------|
| Collector-Base Voltage | V _{CBO} | -60 | V |
| Collector-Emitter Voltage | V _{CEO} | -50 | V |
| Emitter-Base Voltage | V _{EBO} | -6.0 | V |
| Collector Current - Continuous (Note 5) | I _C | 150 | mA |

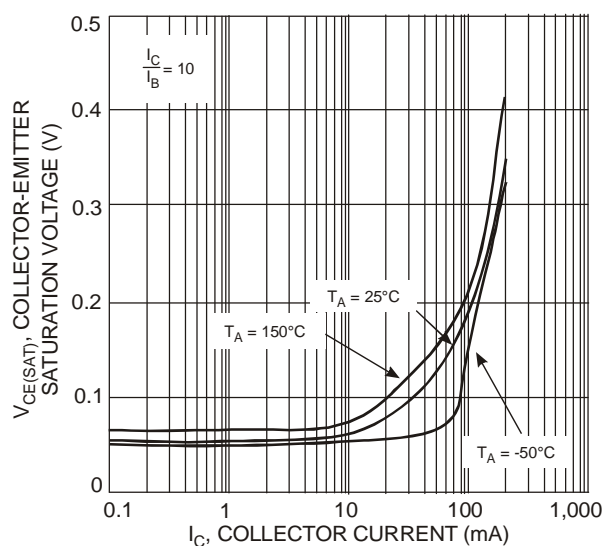
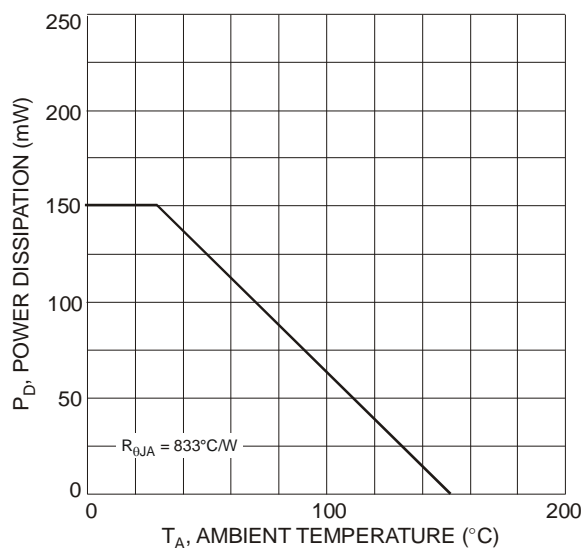
Thermal Characteristics

| Characteristic | Symbol | Value | Unit |
|--|-----------------------------------|-------------|------|
| Power Dissipation (Note 5) T _A = 25°C | P _D | 150 | mW |
| Thermal Resistance, Junction to Ambient (Note 5) | R _{θJA} | 833 | °C/W |
| Operating and Storage 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 6) | | | | | |
| 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 = -1.0mA, I _B = 0 |
| Emitter-Base Breakdown Voltage | V _{(BR)EBO} | -6.0 | — | V | I _E = -50μA, I _C = 0 |
| Collector Cutoff Current | I _{CBO} | — | -100 | nA | V _{CB} = -60V |
| Emitter Cutoff Current | I _{EBO} | — | -100 | nA | V _{EB} = -6.0V |
| ON CHARACTERISTICS (Note 6) | | | | | |
| DC Current Gain | 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: 5. Part mounted on FR-4 board with recommended pad layout, which can be found on our website at <http://www.diodes.com>.
 6. Short duration pulse test used to minimize self-heating effect.



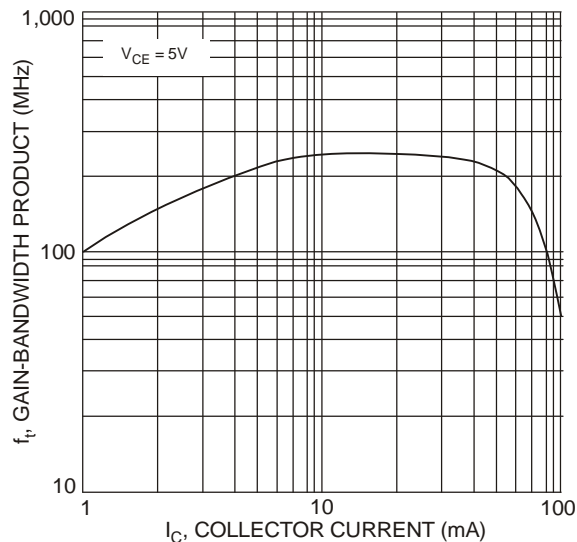
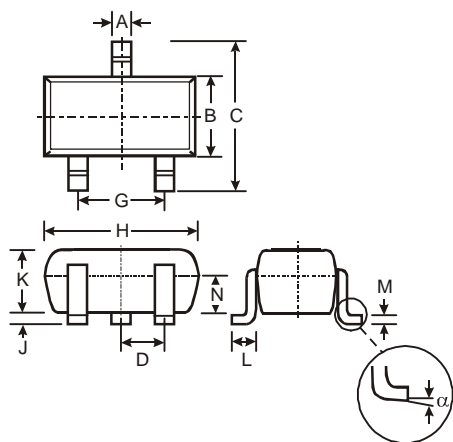


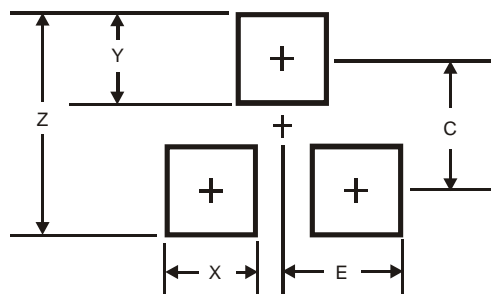
Fig. 3 Typical Gain-Bandwidth Product vs. Collector Current

Package Outline Dimensions



| 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 | | | |

Suggested Pad Layout



| Dimensions | Value (in mm) |
|------------|---------------|
| Z | 1.8 |
| X | 0.4 |
| Y | 0.51 |
| C | 1.3 |
| E | 0.7 |

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