

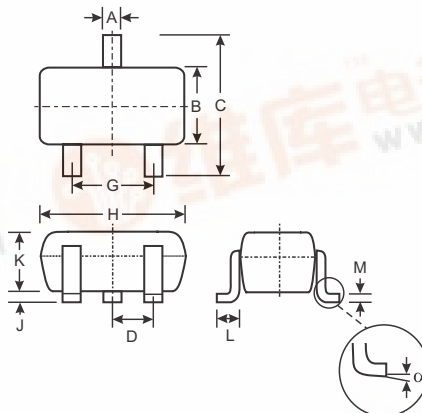
### Features

- Epitaxial Planar Die Construction
- Complementary NPN Types Available (DDTC)
- Built-In Biasing Resistor, R1 only
- **Lead Free/RoHS Compliant (Note 2)**
- "Green" Device (Note 3 and 4)

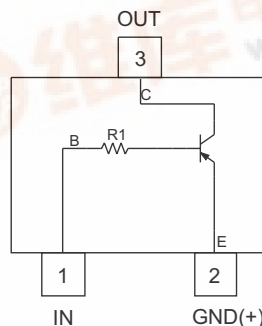
### Mechanical Data

- Case: SC-59
- Case Material: Molded Plastic, "Green" Molding Compound, Note 4. UL Flammability Classification Rating 94V-0
- Moisture Sensitivity: Level 1 per J-STD-020C
- Terminals: Solderable per MIL-STD-202, Method 208
- Lead Free Plating (Matte Tin Finish annealed over Copper leadframe).
- Terminal Connections: See Diagram
- Marking: Date Code and Type Code (See Table Below & Page 2)
- Ordering Information (See Page 2)
- Weight: 0.008 grams (approximate)

| P/N        | R1 (NOM)      | Type Code |
|------------|---------------|-----------|
| DDTA113TKA | 1K $\Omega$   | P01       |
| DDTA123TKA | 2.2K $\Omega$ | P03       |
| DDTA143TKA | 4.7K $\Omega$ | P07       |
| DDTA114TKA | 10K $\Omega$  | P12       |
| DDTA124TKA | 22K $\Omega$  | P16       |
| DDTA144TKA | 47K $\Omega$  | P19       |
| DDTA115TKA | 100K $\Omega$ | P23       |
| DDTA125TKA | 200K $\Omega$ | P25       |



| SC-59                |       |      |
|----------------------|-------|------|
| Dim                  | Min   | Max  |
| A                    | 0.35  | 0.50 |
| B                    | 1.50  | 1.70 |
| C                    | 2.70  | 3.00 |
| D                    | 0.95  |      |
| G                    | 1.90  |      |
| H                    | 2.90  | 3.10 |
| J                    | 0.013 | 0.10 |
| K                    | 1.00  | 1.30 |
| L                    | 0.35  | 0.55 |
| M                    | 0.10  | 0.20 |
| $\alpha$             | 0°    | 8°   |
| All Dimensions in mm |       |      |



Schematic and Pin Configuration

### Maximum Ratings @ $T_A = 25^\circ\text{C}$ unless otherwise specified

| Characteristic                                       | Symbol          | Value       | Unit               |
|------------------------------------------------------|-----------------|-------------|--------------------|
| Collector-Base Voltage                               | $V_{CBO}$       | -50         | V                  |
| Collector-Emitter Voltage                            | $V_{CEO}$       | -50         | V                  |
| Emitter-Base Voltage                                 | $V_{EBO}$       | -5          | V                  |
| Collector Current                                    | $I_C$ (Max)     | -100        | mA                 |
| Power Dissipation                                    | $P_d$           | 200         | mW                 |
| Thermal Resistance, Junction to Ambient Air (Note 1) | $R_{\theta JA}$ | 625         | $^\circ\text{C/W}$ |
| Operating and Storage and Temperature Range          | $T_j, T_{STG}$  | -55 to +150 | $^\circ\text{C}$   |

- Note:
1. Mounted on FR4 PC Board with recommended pad layout at <http://www.diodes.com/datasheets/ap02001.pdf>.
  2. No purposefully added lead.
  3. Diodes Inc.'s "Green" policy can be found on our website at [http://www.diodes.com/products/lead\\_free/index.php](http://www.diodes.com/products/lead_free/index.php).
  4. Product manufactured with Date Code 0609 (week 9, 2006) and newer are built with Green Molding Compound. Product manufactured prior to Date Code 0609 are built with Non-Green Molding Compound and may contain Halogens or Sb2O3 Fire Retardants.

**Electrical Characteristics** @  $T_A = 25^\circ\text{C}$  unless otherwise specified

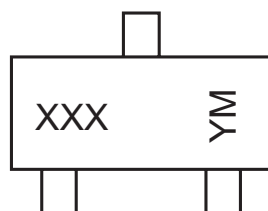
| Characteristic                       | Symbol        | Min | Typ | Max  | Unit          | Test Condition                                                                                                                                                                                                                                                                                                                                                                                                                  |
|--------------------------------------|---------------|-----|-----|------|---------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Collector-Base Breakdown Voltage     | $BV_{CBO}$    | -50 | —   | —    | V             | $I_C = -50\mu\text{A}$                                                                                                                                                                                                                                                                                                                                                                                                          |
| Collector-Emitter Breakdown Voltage  | $BV_{CEO}$    | -50 | —   | —    | V             | $I_C = -1\text{mA}$                                                                                                                                                                                                                                                                                                                                                                                                             |
| Emitter-Base Breakdown Voltage       | $BV_{EBO}$    | -5  | —   | —    | V             | $I_E = -50\mu\text{A}$                                                                                                                                                                                                                                                                                                                                                                                                          |
| Collector Cutoff Current             | $I_{CBO}$     | —   | —   | -0.5 | $\mu\text{A}$ | $V_{CB} = -50\text{V}$                                                                                                                                                                                                                                                                                                                                                                                                          |
| Emitter Cutoff Current               | $I_{EBO}$     | —   | —   | -0.5 | $\mu\text{A}$ | $V_{EB} = -4\text{V}$                                                                                                                                                                                                                                                                                                                                                                                                           |
| Collector-Emitter Saturation Voltage | $V_{CE(sat)}$ | —   | —   | -0.3 | V             | $I_C/I_B = -10\text{mA}/-1\text{mA}$ DDTA113TKA<br>$I_C/I_B = -5\text{mA}/-0.5\text{mA}$ DDTA123TKA<br>$I_C/I_B = -2.5\text{mA}/-.25\text{mA}$ DDTA143TKA<br>$I_C/I_B = -1\text{mA}/-.1\text{mA}$ DDTA114TKA<br>$I_C/I_B = -5\text{mA}/-0.5\text{mA}$ DDTA124TKA<br>$I_C/I_B = -2.5\text{mA}/-.25\text{mA}$ DDTA144TKA<br>$I_C/I_B = -1\text{mA}/-0.1\text{mA}$ DDTA115TKA<br>$I_C/I_B = -.5\text{mA}/-.05\text{mA}$ DDTA125TKA |
| DC Current Transfer Ratio            | $h_{FE}$      | 100 | 250 | 600  | —             | $I_C = -1\text{mA}$ , $V_{CE} = -5\text{V}$                                                                                                                                                                                                                                                                                                                                                                                     |
| Input Resistor ( $R_1$ ) Tolerance   | $\Delta R_1$  | -30 | —   | +30  | %             | —                                                                                                                                                                                                                                                                                                                                                                                                                               |
| Gain-Bandwidth Product*              | $f_T$         | —   | 250 | —    | MHz           | $V_{CE} = -10\text{V}$ , $I_E = 5\text{mA}$ ,<br>$f = 100\text{MHz}$                                                                                                                                                                                                                                                                                                                                                            |

\* Transistor - For Reference Only

**Ordering Information** (Note 4 and 5)

| Device         | Packaging | Shipping         |
|----------------|-----------|------------------|
| DDTA113TKA-7-F | SC-59     | 3000/Tape & Reel |
| DDTA123TKA-7-F | SC-59     | 3000/Tape & Reel |
| DDTA143TKA-7-F | SC-59     | 3000/Tape & Reel |
| DDTA114TKA-7-F | SC-59     | 3000/Tape & Reel |
| DDTA124TKA-7-F | SC-59     | 3000/Tape & Reel |
| DDTA144TKA-7-F | SC-59     | 3000/Tape & Reel |
| DDTA115TKA-7-F | SC-59     | 3000/Tape & Reel |
| DDTA125TKA-7-F | SC-59     | 3000/Tape & Reel |

- Notes: 4. Product manufactured with Date Code 0609 (week 9, 2006) and newer are built with Green Molding Compound. Product manufactured prior Date Code 0609 are built with Non-Green Molding Compound and may contain Halogens or Sb2O3 Fire Retardants.  
 5. For Packaging Details, go to our website at <http://www.diodes.com/datasheets/ap02007.pdf>.

**Marking Information**


XXX = Product Type Marking Code, See Table on Page 1  
 YM = Date Code Marking  
 Y = Year ex: T = 2006  
 M = Month ex: 9 = September

Date Code Key

| Year | 2006 | 2007 | 2008 | 2009 | 2010 | 2011 | 2012 |
|------|------|------|------|------|------|------|------|
| Code | T    | U    | V    | W    | X    | Y    | Z    |

| 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   |

# TYPICAL CURVES - DDTA114TKA

NEW PRODUCT

[查询"DDTA125TKA-7-F"供应商](#)

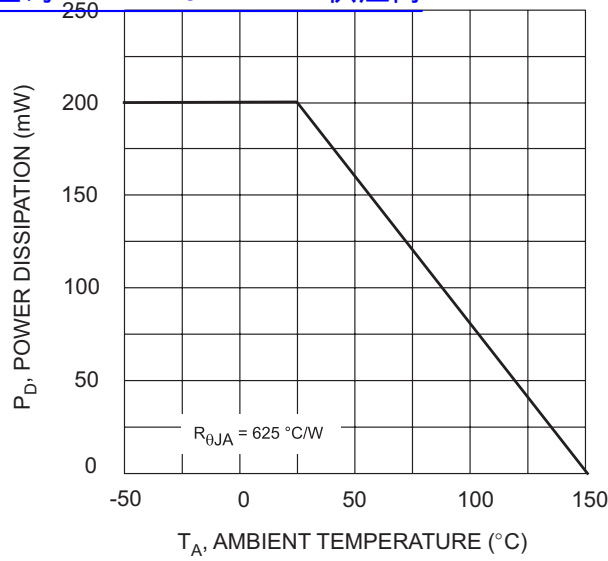


Fig. 1 Derating Curve

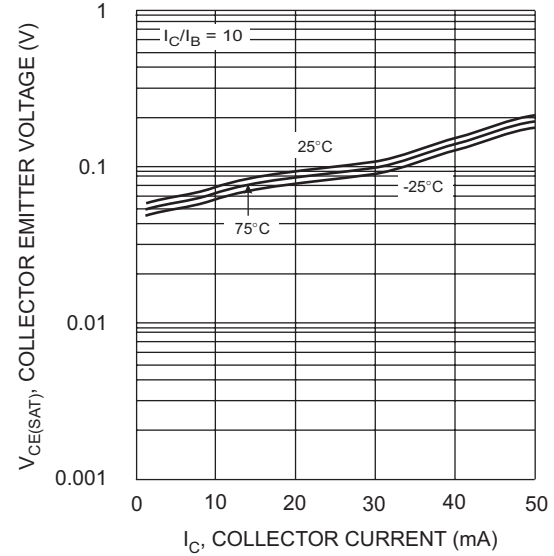


Fig. 2  $V_{CE(SAT)}$  vs.  $I_C$

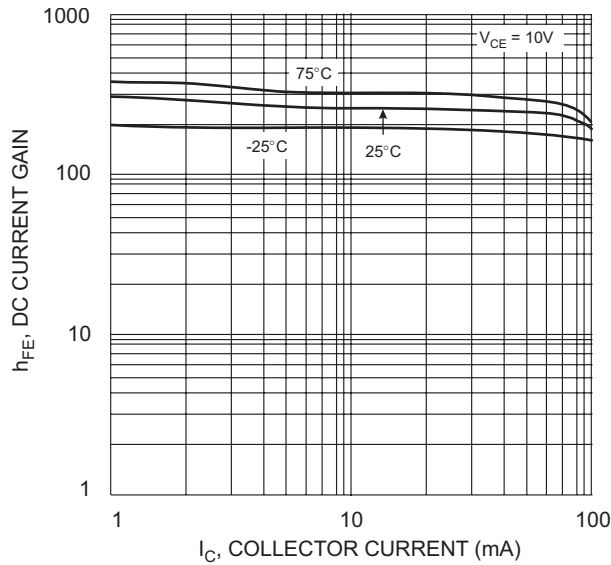


Fig. 3 DC Current Gain

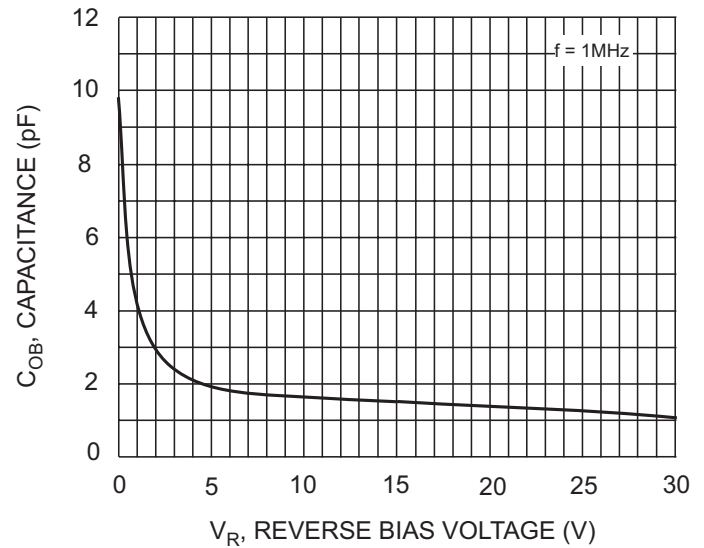


Fig. 4 Output Capacitance

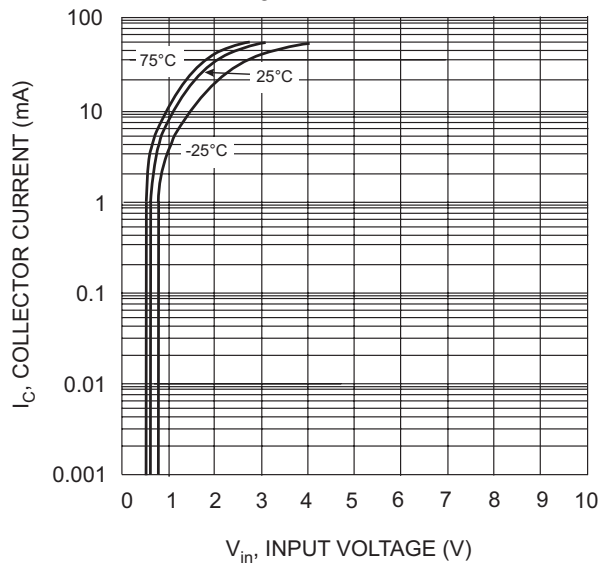


Fig. 5 Collector Current Vs. Input Voltage

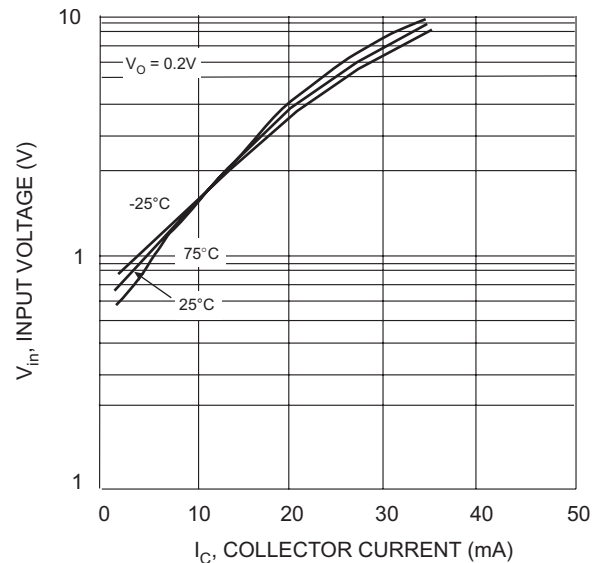


Fig. 6 Input Voltage vs. Collector Current

## IMPORTANT NOTICE

[查询"DDTA125TKA-7-F"供应商](#)

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