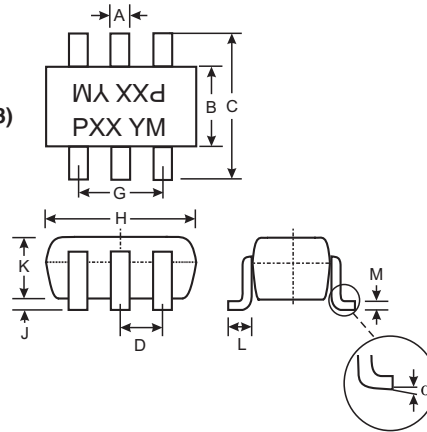


Features

- Epitaxial Planar Die Construction
- Complementary NPN Types Available (DDC)
- Built-In Biasing Resistors
- Available in Lead Free/RoHS Compliant Version (Note 3)

Mechanical Data

- Case: SOT-26
- Case Material: Molded Plastic. UL Flammability Classification Rating 94V-0
- Moisture Sensitivity: Level 1 per J-STD-020C
- Terminal Connections: See Diagram
- Terminals: Solderable per MIL-STD-202, Method 208
- Also Available in Lead Free Plating (Matte Tin Finish annealed over Copper leadframe). Please see Ordering Information, Note 5, on Page 2
- Marking: Date Code and Marking Code (See Diagrams & Page 2)
- Ordering Information (See Page 2)
- Weight: 0.015 grams (approximate)



| SOT-26 | | | |
|----------------------|-------|------|------|
| Dim | Min | Max | Typ |
| A | 0.35 | 0.50 | 0.38 |
| B | 1.50 | 1.70 | 1.60 |
| C | 2.70 | 3.00 | 2.80 |
| D | 0.95 | | |
| G | 1.90 | | |
| H | 2.90 | 3.10 | 3.00 |
| J | 0.013 | 0.10 | 0.05 |
| K | 1.00 | 1.30 | 1.10 |
| L | 0.35 | 0.55 | 0.40 |
| M | 0.10 | 0.20 | 0.15 |
| α | 0° | 8° | — |
| All Dimensions in mm | | | |

| P/N | R1 | R2 | MARKING |
|----------|---------------|--------------|---------|
| DDA124EK | 22K Ω | 22K Ω | P17 |
| DDA144EK | 47K Ω | 47K Ω | P20 |
| DDA114YK | 10K Ω | 47K Ω | P14 |
| DDA123JK | 2.2K Ω | 47K Ω | P06 |
| DDA114EK | 10K Ω | 10K Ω | P13 |
| DDA143TK | 4.7K Ω | - | P07 |
| DDA114TK | 10K Ω | - | P12 |



SCHEMATIC DIAGRAM

Maximum Ratings @ T_A = 25°C unless otherwise specified

| Characteristic | Symbol | Value | Unit |
|--|-----------------------------------|--|------|
| Supply Voltage, (1) to (6) and (4) to (3) | V _{CC} | 50 | V |
| Input Voltage, (2) to (1) and (5) to (4) | V _{IN} | +10 to -40 +10 to -40 +6 to -40 +5 to -12 +10 to -40 +5 V _{max} +5 V _{max} | V |
| Output Current | I _O | -30 -30 -70 -100 -50 -100 -100 | mA |
| Output Current | I _C (Max) | -100 | mA |
| Power Dissipation (Total) | P _d | 300 | mW |
| Thermal Resistance, Junction to Ambient Air (Note 1) | R _{θJA} | 416.7 | °C/W |
| Operating and Storage and Temperature Range | T _J , T _{STG} | -55 to +150 | °C |

- Note:
1. Mounted on FR4 PC Board with recommended pad layout at <http://www.diodes.com/datasheets/ap02001.pdf>.
 2. 200mW per element must not be exceeded.
 3. No purposefully added lead.

Electrical Characteristics @ T_A = 25°C unless otherwise specified

| Characteristic (DDA143TK & DDA114TK only) | Symbol | Min | Typ | Max | Unit | Test Condition |
|--|----------------------|-----|-----|------|------|---|
| Collector-Base Breakdown Voltage | BV _{CBO} | -50 | — | — | V | I _C = -50μA |
| Collector-Emitter Breakdown Voltage | BV _{CEO} | -50 | — | — | V | I _C = -1mA |
| Emitter-Base Breakdown Voltage | BV _{EBO} | -5 | — | — | V | I _E = -50μA |
| Collector Cutoff Current | I _{CBO} | — | — | -0.5 | μA | V _{CB} = -50V |
| Emitter Cutoff Current | I _{EBO} | — | — | -0.5 | μA | V _{EB} = -4V |
| Collector-Emitter Saturation Voltage | V _{CE(sat)} | — | — | -0.3 | V | I _C /I _B = -2.5mA / - 0.25mA DDA143TK I _C /I _B = -1mA / - 0.1mA DDA114TK |
| DC Current Transfer Ratio | h _{FE} | 100 | 250 | 600 | — | I _C = -1mA, V _{CE} = -5V |
| Input Resistor (R _I) Tolerance | ΔR _I | -30 | — | +30 | % | — |
| Gain-Bandwidth Product* | f _T | — | 250 | — | MHz | V _{CE} = -10V, I _E = 5mA, f = 100MHz |

| Characteristic | Symbol | Min | Typ | Max | Unit | Test Condition |
|--|--------------------------------|------|------|-------|------|--|
| Input Voltage | V _{I(off)} | -0.5 | -1.1 | — | V | V _{CC} = -5V, I _O = -100μA |
| | | -0.5 | -1.1 | — | | |
| Input Voltage | V _{I(on)} | -0.3 | — | — | V | V _O = -0.3, I _O = -5mA V _O = -0.3, I _O = -2mA V _O = -0.3, I _O = -1mA V _O = -0.3, I _O = -5mA V _O = -0.3, I _O = -10mA |
| | | -0.5 | — | — | | |
| Output Voltage | V _{O(on)} | -0.5 | -1.1 | — | V | I _O /I _I = -10mA / - 0.5mA I _O /I _I = -10mA / - 0.5mA I _O /I _I = -5mA / - 0.25mA I _O /I _I = -5mA / - 0.25mA I _O /I _I = -10mA / - 0.5mA |
| | | -0.5 | -1.1 | — | | |
| Input Current | I _I | — | — | -0.36 | mA | V _I = -5V |
| | | — | — | -0.18 | | |
| Output Current | I _{O(off)} | — | — | -0.88 | μA | V _{CC} = 50V, V _I = 0V |
| | | — | — | -3.6 | | |
| DC Current Gain | G _I | — | — | -0.88 | — | V _O = -5V, I _O = -5mA V _O = -5V, I _O = -5mA V _O = -5V, I _O = -10mA V _O = -5V, I _O = -10mA V _O = -5V, I _O = -5mA |
| | | 56 | — | — | | |
| DC Current Gain | G _I | 68 | — | — | — | V _O = -5V, I _O = -5mA V _O = -5V, I _O = -5mA V _O = -5V, I _O = -10mA V _O = -5V, I _O = -10mA V _O = -5V, I _O = -5mA |
| | | 68 | — | — | | |
| DC Current Gain | G _I | 80 | — | — | — | V _O = -5V, I _O = -5mA V _O = -5V, I _O = -5mA V _O = -5V, I _O = -10mA V _O = -5V, I _O = -10mA V _O = -5V, I _O = -5mA |
| | | 30 | — | — | | |
| Input Resistor (R _I) Tolerance | ΔR _I | -30 | — | +30 | % | — |
| Resistance Ratio Tolerance | R ₂ /R ₁ | -20 | — | +20 | % | — |
| Gain-Bandwidth Product* | f _T | — | 250 | — | MHz | V _{CE} = -10V, I _E = -5mA, f = 100MHz |

* Transistor - For Reference Only

Ordering Information (Note 4)

| Device | Packaging | Shipping |
|------------|-----------|------------------|
| DDA124EK-7 | SOT-26 | 3000/Tape & Reel |
| DDA144EK-7 | SOT-26 | 3000/Tape & Reel |
| DDA114YK-7 | SOT-26 | 3000/Tape & Reel |
| DDA123JK-7 | SOT-26 | 3000/Tape & Reel |
| DDA114EK-7 | SOT-26 | 3000/Tape & Reel |
| DDA143TK-7 | SOT-26 | 3000/Tape & Reel |
| DDA114TK-7 | SOT-26 | 3000/Tape & Reel |

- Notes: 4. For Packaging Details, go to our website at <http://www.diodes.com/datasheets/ap02007.pdf>.
5. For Lead Free/RoHS Compliant version part numbers, please add "-F" suffix to the part numbers above. Example: DDA114TK-7-F.

Marking Information



PXX = Product Type Marking Code
See Sheet 1 Diagrams
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 - DDA123JK
ONE SECTION

NEW PRODUCT

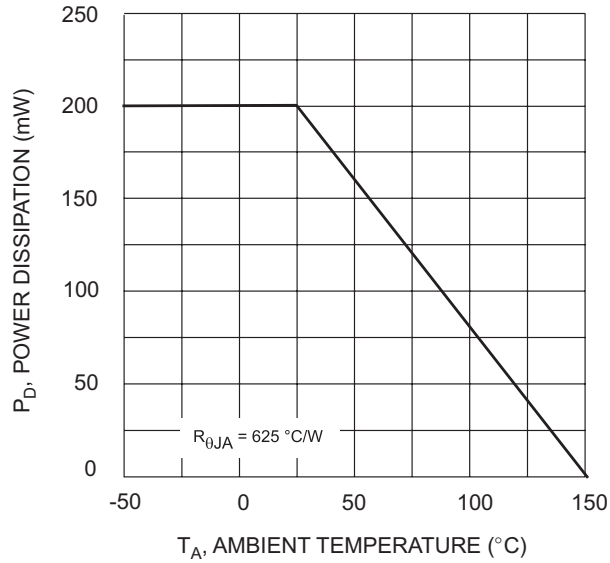


Fig. 1 Derating Curve

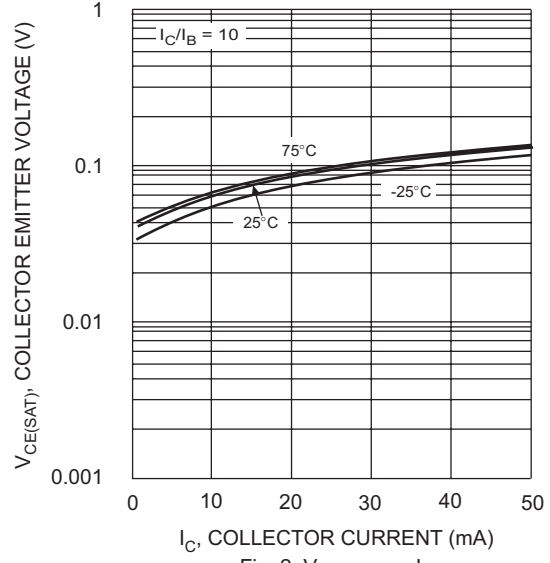


Fig. 2 $V_{CE(SAT)}$ vs. I_C

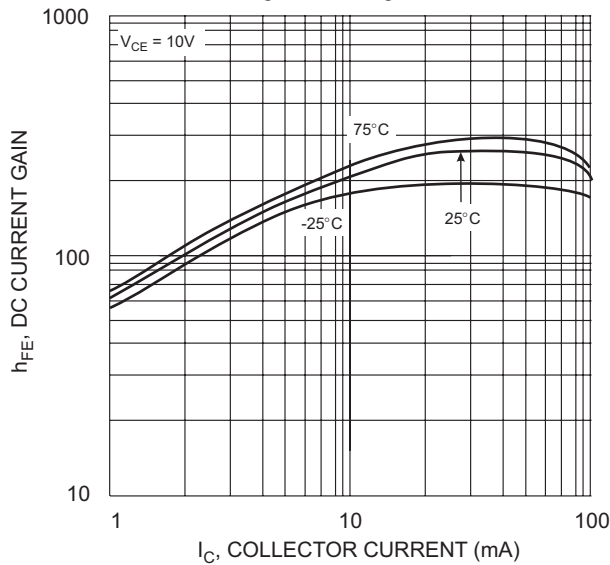


Fig. 3 DC Current Gain

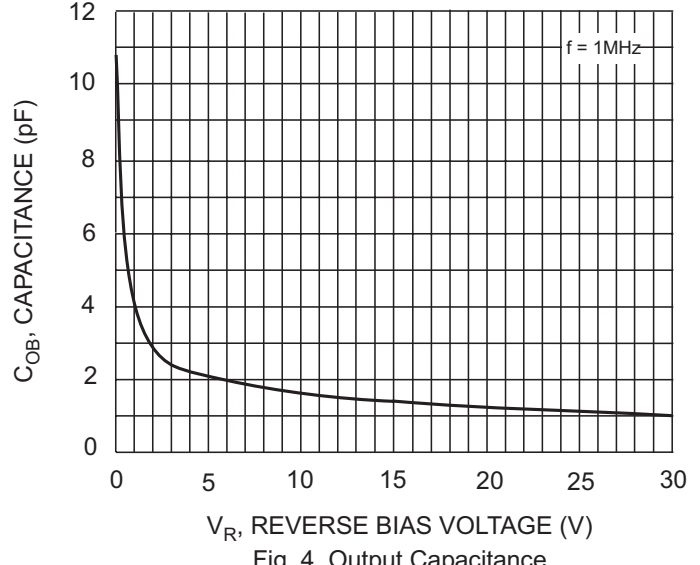


Fig. 4 Output Capacitance

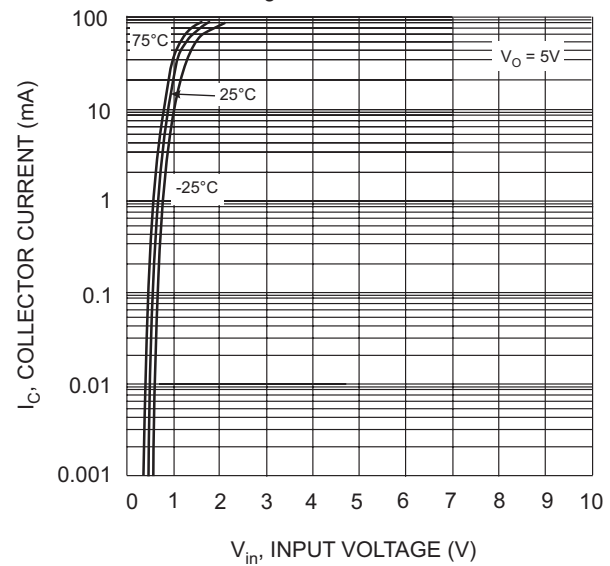


Fig. 5 Collector Current Vs. Input Voltage

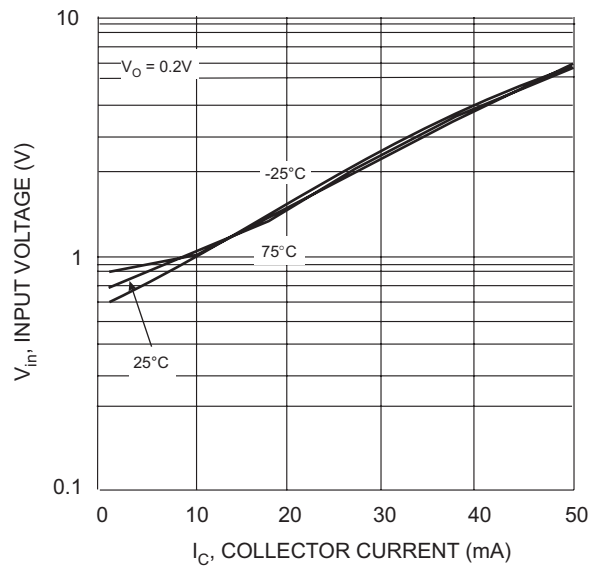


Fig. 6 Input Voltage vs. Collector Current

TYPICAL CURVES - DDA114TK

ONE SECTION

NEW PRODUCT

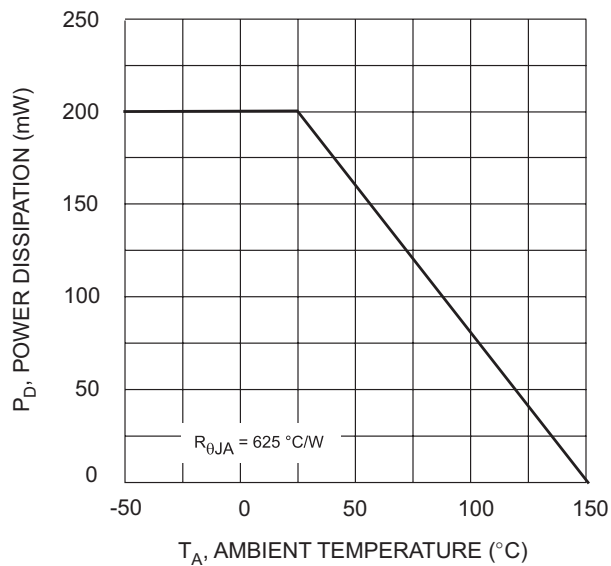


Fig. 1 Derating Curve

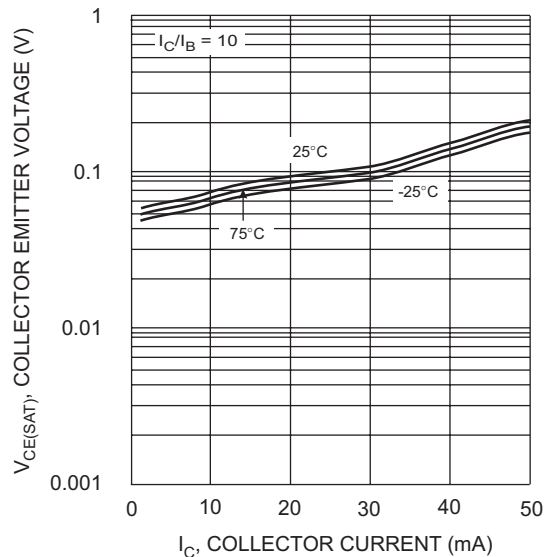


Fig. 2 $V_{CE(SAT)}$ vs. I_C

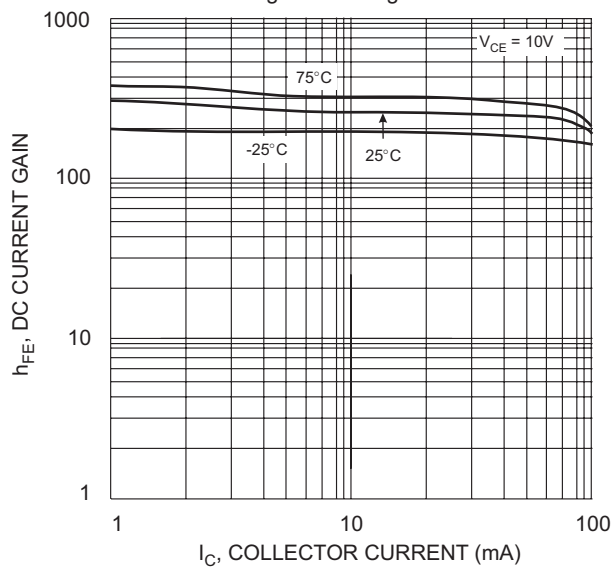


Fig. 3 DC Current Gain

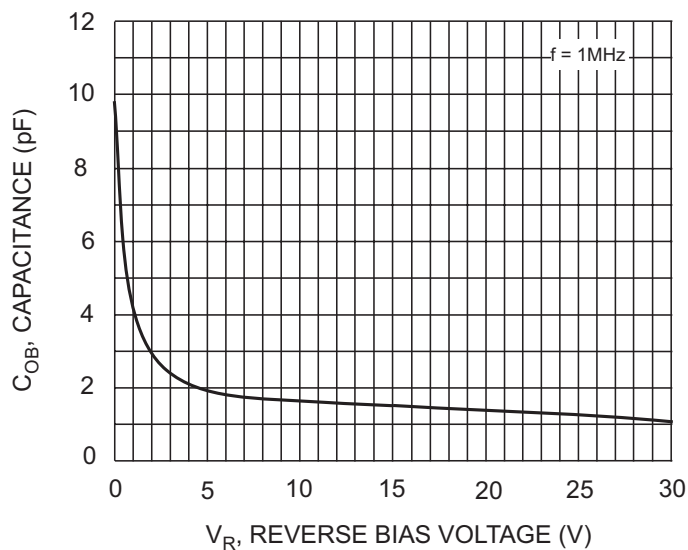


Fig. 4 Output Capacitance

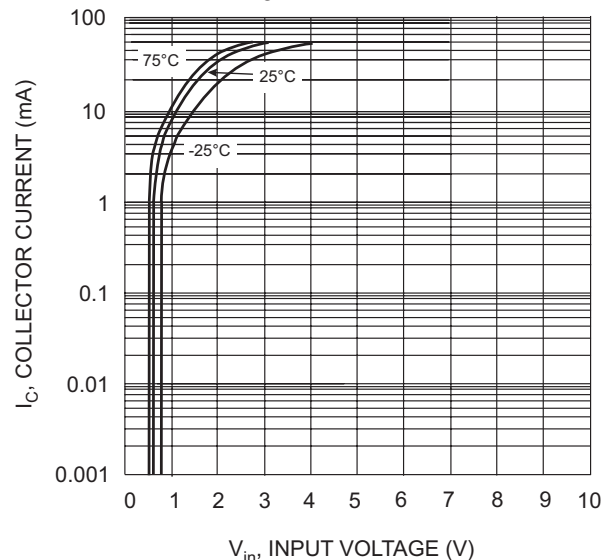


Fig. 5 Collector Current Vs. Input Voltage

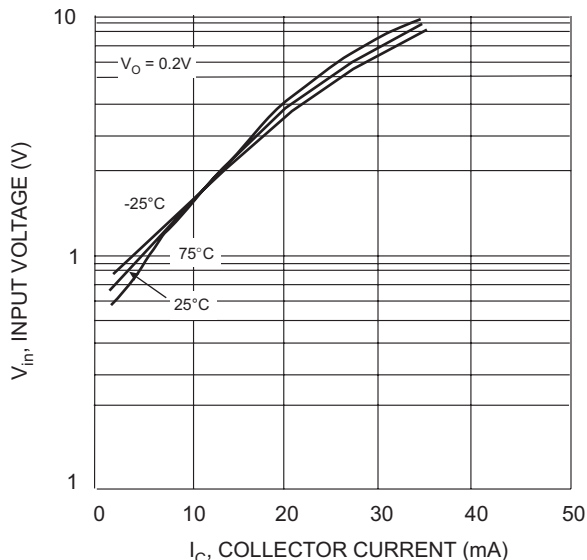


Fig. 6 Input Voltage vs. Collector Current

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- Поставка сложных, дефицитных, либо снятых с производства позиций;
- Оперативные сроки поставки под заказ (от 5 рабочих дней);
- Экспресс доставка в любую точку России;
- Техническая поддержка проекта, помощь в подборе аналогов, поставка прототипов;
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- Подбор аналогов;
- Консультации по применению компонента;
- Поставка образцов и прототипов;
- Техническая поддержка проекта;
- Защита от снятия компонента с производства.



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