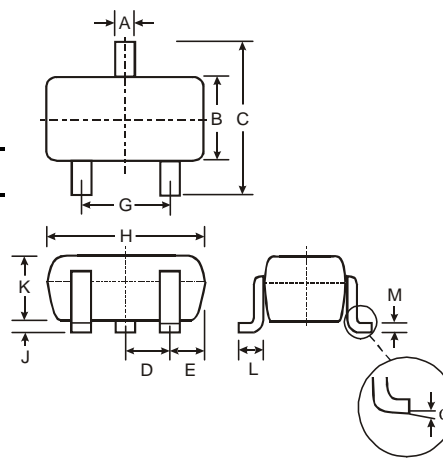


Features

- Epitaxial Planar Die Construction
- Complementary PNP Types Available (DDTA)
- Built-In Biasing Resistors, R1≠R2
- **Lead Free/RoHS Compliant (Note 1)**
- **"Green" Device (Note 2 & 3)**

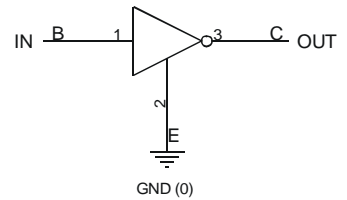
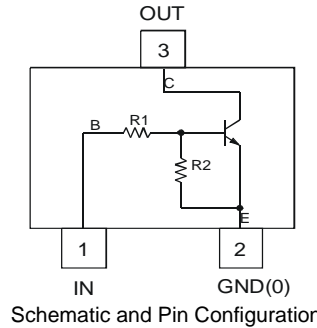
Mechanical Data

- Case: SOT-323
- Case Material: Molded Plastic, "Green" Molding Compound, Note 3. 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
- Lead Free Plating (Matte Tin Finish annealed over Alloy 42 leadframe).
- Marking Information: See Page 4
- Type Code: See Table Below
- Ordering Information: See Page 4
- Weight: 0.006 grams (approximate)



| SOT-323 | | |
|-----------------------------|--------------|------|
| Dim | Min | Max |
| A | 0.25 | 0.40 |
| B | 1.15 | 1.35 |
| C | 2.00 | 2.20 |
| D | 0.65 Nominal | |
| E | 0.30 | 0.40 |
| G | 1.20 | 1.40 |
| H | 1.80 | 2.20 |
| J | 0.0 | 0.10 |
| K | 0.90 | 1.00 |
| L | 0.25 | 0.40 |
| M | 0.10 | 0.18 |
| α | 0° | 8° |
| All Dimensions in mm | | |

| P/N | R1 (NOM) | R2 (NOM) | Type Code |
|------------|---------------|---------------|-----------|
| DDTC113ZUA | 1K Ω | 10K Ω | N02 |
| DDTC123YUA | 2.2K Ω | 10K Ω | N05 |
| DDTC123JUA | 2.2K Ω | 47K Ω | N06 |
| DDTC143XUA | 4.7K Ω | 10K Ω | N09 |
| DDTC143FUA | 4.7K Ω | 22K Ω | N10 |
| DDTC143ZUA | 4.7K Ω | 47K Ω | N11 |
| DDTC114YUA | 10K Ω | 47K Ω | N14 |
| DDTC114WUA | 10K Ω | 4.7K Ω | N15 |
| DDTC124XUA | 22K Ω | 47K Ω | N18 |
| DDTC144VUA | 47K Ω | 10K Ω | N21 |
| DDTC144WUA | 47K Ω | 22K Ω | N22 |



Maximum Ratings @T_A = 25°C unless otherwise specified

| Characteristic | Symbol | Value | Unit |
|----------------------------|----------------------|---|------|
| Supply Voltage, (3) to (2) | V _{CC} | 50 | V |
| Input Voltage, (1) to (2) | V _{IN} | -5 to +10 -5 to +12 -5 to +12 -7 to +20 -6 to +30 -5 to +30 -6 to +40 -10 to +30 -10 to +40 -15 to +40 -10 to +40 | V |
| Output Current | I _O | 100 100 100 100 100 100 70 100 50 30 30 | mA |
| Output Current | I _C (Max) | 100 | mA |

- Notes:
1. No purposefully added lead.
 2. Diodes Inc.'s "Green" policy can be found on our website at http://www.diodes.com/products/lead_free/index.php.
 3. Product manufactured with Date Code 0627 (week 27, 2006) and newer are built with Green Molding Compound. Product manufactured prior to Date Code 0627 are built with Non-Green Molding Compound and may contain Halogens or Sb2O3 Fire Retardants.

Maximum Ratings (continued) @T_A = 25°C unless otherwise specified

| Characteristic | Symbol | Value | Unit |
|--|-----------------------------------|-------------|------|
| Output Current | I _C (Max) | 100 | mA |
| Power Dissipation | P _d | 200 | mW |
| Thermal Resistance, Junction to Ambient Air (Note 4) | R _{θJA} | 625 | °C/W |
| Operating and Storage Temperature Range | T _J , T _{STG} | -55 to +150 | °C |

Notes: 4. Mounted on FR4 PC Board with recommended pad layout at <http://www.diodes.com/datasheets/ap02001.pdf>.

Electrical Characteristics @T_A = 25°C unless otherwise specified

| Characteristic | Symbol | Min | Typ | Max | Unit | Test Condition | |
|----------------------------|---------------------------------|------|---|------|------|--|--|
| Input Voltage | V _{I(off)} | 0.3 | | | V | V _{CC} = 5V, I _O = 100μA | |
| | | 0.3 | | | | | |
| | | 0.5 | | | | | |
| | | 0.3 | | | | | |
| | | 0.3 | | | | | |
| | | 0.5 | — | — | | | |
| | | 0.3 | | | | | |
| | | 0.8 | | | | | |
| | | 0.4 | | | | | |
| | | 1.0 | | | | | |
| 0.8 | | | | | | | |
| Input Voltage | V _{I(on)} | | | 3.0 | V | V _O = 0.3V, I _O = 20mA | |
| | | | | 3.0 | | | V _O = 0.3V, I _O = 20mA |
| | | | | 1.1 | | | V _O = 0.3V, I _O = 5mA |
| | | | | 2.5 | | | V _O = 0.3V, I _O = 20mA |
| | | | | 1.3 | | | V _O = 0.3V, I _O = 3mA |
| | | | | 1.3 | | | V _O = 0.3V, I _O = 5mA |
| | | | | 1.4 | | | V _O = 0.3V, I _O = 1mA |
| | | | | 3.0 | | | V _O = 0.3V, I _O = 2mA |
| | | | | 2.5 | | | V _O = 0.3V, I _O = 2mA |
| | | | | 5.0 | | | V _O = 0.3V, I _O = 2mA |
| | | 4.0 | V _O = 0.3V, I _O = 2mA | | | | |
| Output Voltage | V _{O(on)} | — | 0.1 | 0.3 | V | I _O /I _I = 5mA/0.25mA DDTC123JUA I _O /I _I = 5mA/0.25mA DDTC143ZUA I _O /I _I = 5mA/0.25mA DDTC114YUA I _O /I _I = 10mA/0.5mA All Others | |
| Input Current | I _I | | | 7.2 | mA | V _I = 5V | |
| | | | | 3.8 | | | |
| | | | | 3.6 | | | |
| | | | | 1.8 | | | |
| | | | | 1.8 | | | |
| | | | | 1.8 | | | |
| | | | | 0.88 | | | |
| | | | | 0.88 | | | |
| | | | | 0.36 | | | |
| | | | | 0.16 | | | |
| | | 0.16 | | | | | |
| Output Current | I _{O(off)} | — | — | 0.5 | μA | V _{CC} = 50V, V _I = 0V | |
| DC Current Gain | G _I | 33 | | | — | V _O = 5V, I _O = 5mA | |
| | | 33 | | | | | V _O = 5V, I _O = 10mA |
| | | 80 | | | | | V _O = 5V, I _O = 10mA |
| | | 30 | | | | | V _O = 5V, I _O = 10mA |
| | | 68 | | | | | V _O = 5V, I _O = 10mA |
| | | 80 | — | — | | | V _O = 5V, I _O = 10mA |
| | | 68 | | | | | V _O = 5V, I _O = 5mA |
| | | 24 | | | | | V _O = 5V, I _O = 10mA |
| | | 68 | | | | | V _O = 5V, I _O = 5mA |
| | | 33 | | | | | V _O = 5V, I _O = 5mA |
| 56 | | | V _O = 5V, I _O = 5mA | | | | |
| Input Resistor Tolerance | ΔR ₁ | -30 | — | +30 | % | — | |
| Resistance Ratio Tolerance | ΔR ₂ /R ₁ | -20 | — | +20 | % | — | |
| Gain-Bandwidth Product* | f _T | — | 250 | — | MHz | V _{CE} = 10V, I _E = 5mA, f = 100MHz | |

* Transistor - For Reference Only

Typical Curves – DDT123JUA

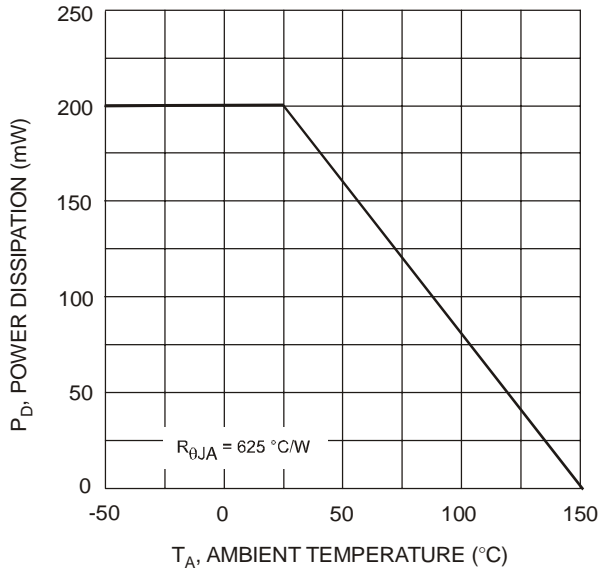


Fig. 1 Derating Curve

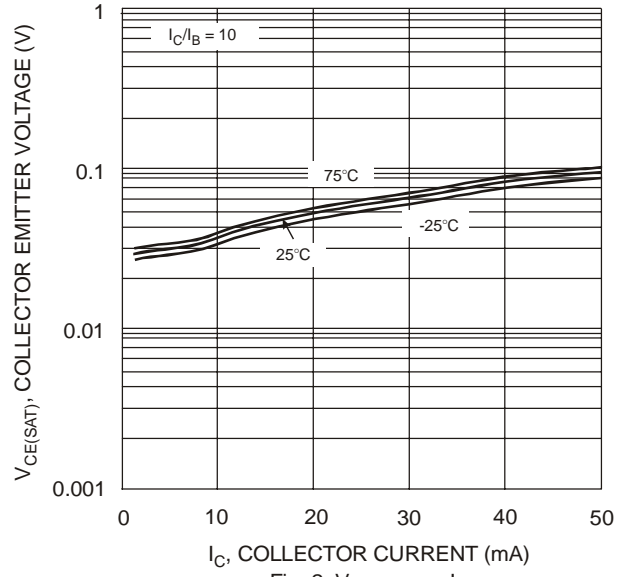


Fig. 2 $V_{CE(SAT)}$ vs. I_C

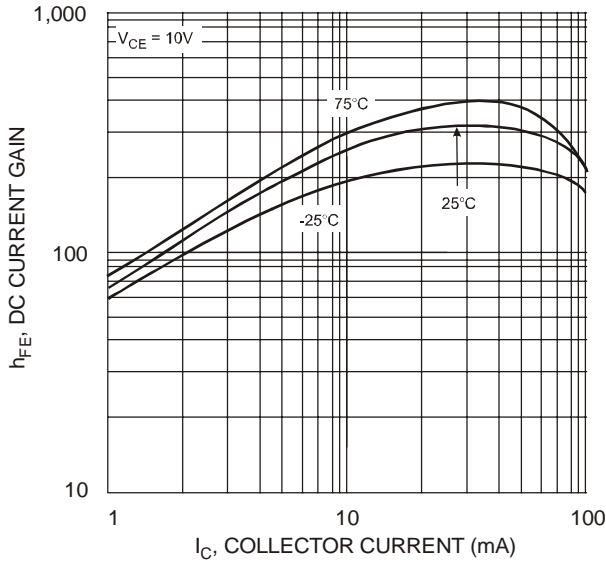


Fig. 3 DC Current Gain

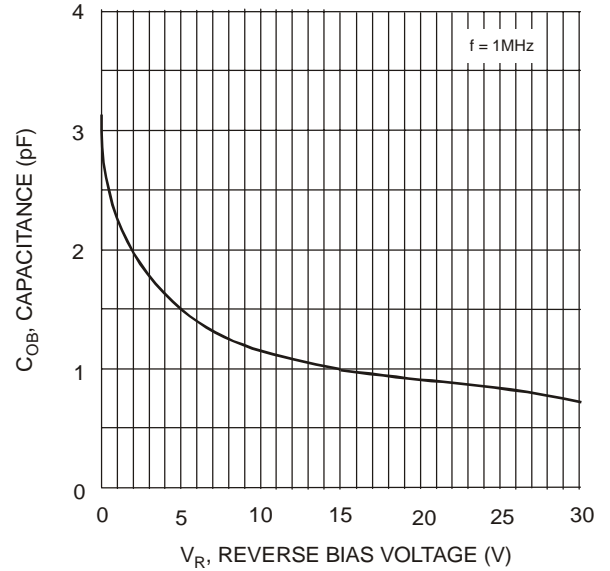


Fig. 4 Output Capacitance

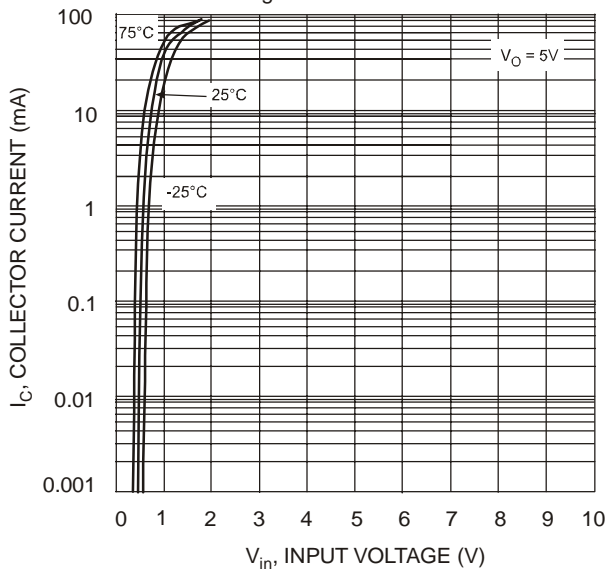


Fig. 5 Collector Current vs. Input Voltage

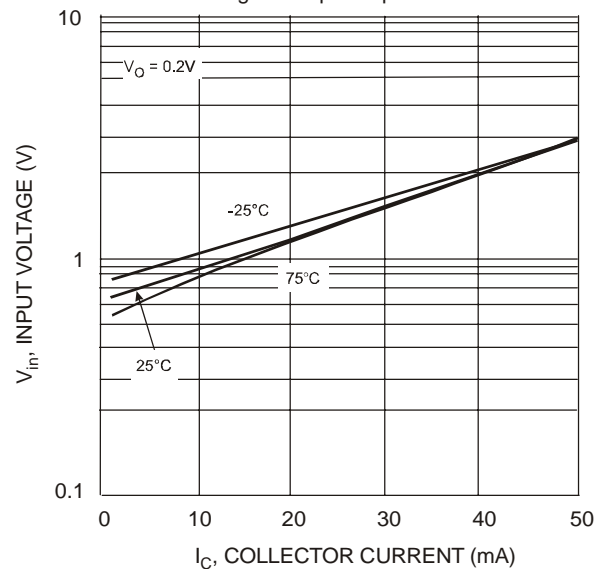


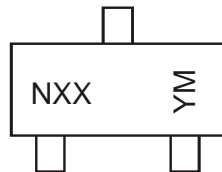
Fig. 6 Input Voltage vs. Collector Current

Ordering Information (Note 3 & 5)

| Device | Packaging | Shipping |
|----------------|-----------|------------------|
| DDTC113ZUA-7-F | SOT-323 | 3000/Tape & Reel |
| DDTC123YUA-7-F | SOT-323 | 3000/Tape & Reel |
| DDTC123JUA-7-F | SOT-323 | 3000/Tape & Reel |
| DDTC143XUA-7-F | SOT-323 | 3000/Tape & Reel |
| DDTC143FUA-7-F | SOT-323 | 3000/Tape & Reel |
| DDTC143ZUA-7-F | SOT-323 | 3000/Tape & Reel |
| DDTC114YUA-7-F | SOT-323 | 3000/Tape & Reel |
| DDTC114WUA-7-F | SOT-323 | 3000/Tape & Reel |
| DDTC124XUA-7-F | SOT-323 | 3000/Tape & Reel |
| DDTC144VUA-7-F | SOT-323 | 3000/Tape & Reel |
| DDTC144WUA-7-F | SOT-323 | 3000/Tape & Reel |

Notes: 5. For packaging details, go to our website at <http://www.diodes.com/datasheets/ap02007.pdf>.

Marking Information



NXX = Product Type Marking Code
See Page 1 Diagrams
YM = Date Code Marking
Y = Year ex: T = 2006
M = Month ex: 9 = September

Date Code Key

| Year | 2002 | 2003 | 2004 | 2005 | 2006 | 2007 | 2008 | 2009 | 2010 | 2011 | 2012 |
|------|------|------|------|------|------|------|------|------|------|------|------|
| Code | N | P | R | S | 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 |

IMPORTANT NOTICE

Diodes Incorporated and its subsidiaries reserve the right to make modifications, enhancements, improvements, corrections or other changes without further notice to any product herein. Diodes Incorporated does not assume any liability arising out of the application or use of any product described herein; neither does it convey any license under its patent rights, nor the rights of others. The user of products in such applications shall assume all risks of such use and will agree to hold Diodes Incorporated and all the companies whose products are represented on our website, harmless against all damages.

LIFE SUPPORT

Diodes Incorporated products are not authorized for use as critical components in life support devices or systems without the expressed written approval of the President of Diodes Incorporated.

Компания «Океан Электроники» предлагает заключение долгосрочных отношений при поставках импортных электронных компонентов на взаимовыгодных условиях!

Наши преимущества:

- Поставка оригинальных импортных электронных компонентов напрямую с производств Америки, Европы и Азии, а так же с крупнейших складов мира;
- Широкая линейка поставок активных и пассивных импортных электронных компонентов (более 30 млн. наименований);
- Поставка сложных, дефицитных, либо снятых с производства позиций;
- Оперативные сроки поставки под заказ (от 5 рабочих дней);
- Экспресс доставка в любую точку России;
- Помощь Конструкторского Отдела и консультации квалифицированных инженеров;
- Техническая поддержка проекта, помощь в подборе аналогов, поставка прототипов;
- Поставка электронных компонентов под контролем ВП;
- Система менеджмента качества сертифицирована по Международному стандарту ISO 9001;
- При необходимости вся продукция военного и аэрокосмического назначения проходит испытания и сертификацию в лаборатории (по согласованию с заказчиком);
- Поставка специализированных компонентов военного и аэрокосмического уровня качества (Xilinx, Altera, Analog Devices, Intersil, Interpoint, Microsemi, Actel, Aeroflex, Peregrine, VPT, Syfer, Eurofarad, Texas Instruments, MS Kennedy, Miteq, Cobham, E2V, MA-COM, Hittite, Mini-Circuits, General Dynamics и др.);

Компания «Океан Электроники» является официальным дистрибьютором и эксклюзивным представителем в России одного из крупнейших производителей разъемов военного и аэрокосмического назначения «JONHON», а так же официальным дистрибьютором и эксклюзивным представителем в России производителя высокотехнологичных и надежных решений для передачи СВЧ сигналов «FORSTAR».



JONHON

«JONHON» (основан в 1970 г.)

Разъемы специального, военного и аэрокосмического назначения:

(Применяются в военной, авиационной, аэрокосмической, морской, железнодорожной, горно- и нефтедобывающей отраслях промышленности)

«FORSTAR» (основан в 1998 г.)

ВЧ соединители, коаксиальные кабели,
кабельные сборки и микроволновые компоненты:

(Применяются в телекоммуникациях гражданского и специального назначения, в средствах связи, РЛС, а так же военной, авиационной и аэрокосмической отраслях промышленности).



Телефон: 8 (812) 309-75-97 (многоканальный)

Факс: 8 (812) 320-03-32

Электронная почта: ocean@oceanchips.ru

Web: <http://oceanchips.ru/>

Адрес: 198099, г. Санкт-Петербург, ул. Калинина, д. 2, корп. 4, лит. А