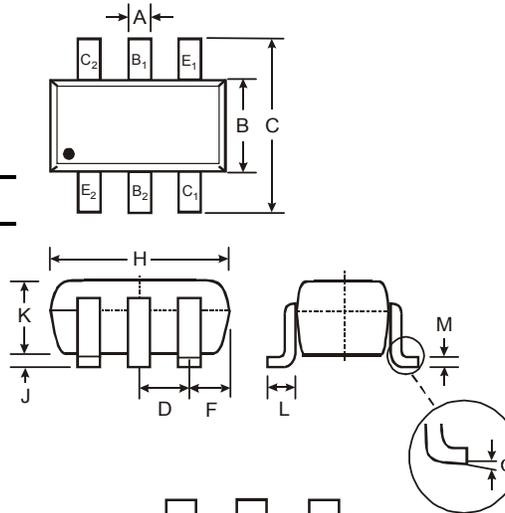


**Features**

- Epitaxial Planar Die Construction
- Built-In Biasing Resistors
- One 500mA PNP and One 100mA NPN
- Lead Free/RoHS Compliant (Note 1)
- "Green" Device (Note 3 and 4)

**Mechanical Data**

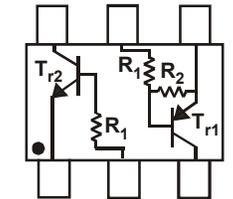
- Case: SOT-363
- Case Material - Molded Plastic. UL Flammability Classification Rating 94V-0
- Moisture Sensitivity: Level 1 per J-STD-020A
- Terminals: Finish - Solderable per MIL-STD-202, Method 208
- Lead Free Plating (Matte Tin Finish annealed over Alloy 42 leadframe).
- Marking Code: C73 See Page 4
- Ordering & Date Code: See Page 4
- Terminal Connections: See Diagram
- Weight: 0.015 grams (approximate)



| SOT-363  |              |      |
|----------|--------------|------|
| Dim      | Min          | Max  |
| A        | 0.10         | 0.30 |
| B        | 1.15         | 1.35 |
| C        | 2.00         | 2.20 |
| D        | 0.65 Nominal |      |
| F        | 0.30         | 0.40 |
| H        | 1.80         | 2.20 |
| J        | —            | 0.10 |
| K        | 0.90         | 1.00 |
| L        | 0.25         | 0.40 |
| M        | 0.10         | 0.25 |
| $\alpha$ | 0°           | 8°   |

All Dimensions in mm

| P/N     | R1         | R2                      |
|---------|------------|-------------------------|
| MIMD10A | Tr1<br>Tr2 | 0.1K<br>10K<br>10K<br>- |



SCHMATIC DIAGRAM

**Maximum Ratings PNP Section Tr1** @ $T_A = 25^\circ\text{C}$  unless otherwise specified

| Characteristic | Symbol   | Value    | Unit |
|----------------|----------|----------|------|
| Supply Voltage | $V_{CC}$ | -50      | V    |
| Input Voltage  | $V_{IN}$ | -5 to +5 | V    |
| Output Current | $I_O$    | -500     | mA   |

**Maximum Ratings NPN Section Tr2** @ $T_A = 25^\circ\text{C}$  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         | $I_C$     | 100   | mA   |

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

| Characteristic                          | Symbol         | Value       | Unit             |
|---|----------------|-------------|------------------|
| Power Dissipation (Note 2)              | $P_d$          | 200         | mW               |
| Operating and Storage Temperature Range | $T_j, T_{STG}$ | -55 to +150 | $^\circ\text{C}$ |

- Notes:
1. No purposefully added lead.
  2. Mounted on FR4 PC Board with recommended pad layout at <http://www.diodes.com/datasheets/ap02001.pdf>.
  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 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.

### Electrical Characteristics PNP Section Tr1 @<sub>TA</sub> = 25°C unless otherwise specified

| Characteristic          | Symbol       | Min  | Typ  | Max  | Unit    | Test Condition                           |
|-------------------------|--------------|------|------|------|---------|--|
| Input Voltage           | $V_{I(off)}$ | -0.3 | —    | —    | V       | $V_{CC} = -5V, I_O = -100\mu A$          |
|                         | $V_{I(on)}$  | —    | —    | -1.5 |         | $V_O = 0.3, I_O = -100mA$                |
| Output Voltage          | $V_{O(on)}$  | —    | -0.1 | -0.3 | V       | $I_O = -100mA/-5mA$                      |
| Input Current           | $I_I$        | —    | —    | -25  | mA      | $V_I = -2V$                              |
| Output Current          | $I_{O(off)}$ | —    | —    | -0.5 | $\mu A$ | $V_{CC} = -50V, V_I = 0V$                |
| DC Current Gain         | $G_I$        | 68   | —    | —    | —       | —  |
| Gain-Bandwidth Product* | $f_T$        | —    | 200  | —    | MHz     | $V_{CE} = -10V, I_E = -50mA, f = 100MHz$ |

\* Transistor - For Reference Only

### Electrical Characteristics NPN Section Tr2 @<sub>TA</sub> = 25°C unless otherwise specified

| Characteristic                       | Symbol        | Min | Typ | Max | Unit    | Test Condition                         |
|--------------------------------------|---------------|-----|-----|-----|---------|--|
| Collector-Base Breakdown Voltage     | $BV_{CBO}$    | 50  | —   | —   | V       | $I_C = 50\mu A$                        |
| Collector-Emitter Breakdown Voltage  | $BV_{CEO}$    | 50  | —   | —   | V       | $I_C = 1mA$                            |
| Emitter-Base Breakdown Voltage       | $BV_{EBO}$    | 5   | —   | —   | V       | $I_E = 50\mu A$                        |
| Collector Cutoff Current             | $I_{CBO}$     | —   | —   | 0.5 | $\mu A$ | $V_{CB} = 50V$                         |
| Emitter Cutoff Current               | $I_{EBO}$     | —   | —   | 0.5 | $\mu A$ | $V_{EB} = 4V$                          |
| Collector-Emitter Saturation Voltage | $V_{CE(sat)}$ | —   | —   | 0.3 | V       | $I_C/I_B = 10mA / 1.0mA$               |
| DC Current Transfer Ratio            | $h_{FE}$      | 100 | 250 | 600 | —       | $I_C = 1mA, V_{CE} = 5V$               |
| Gain-Bandwidth Product*              | $f_T$         | —   | 250 | —   | MHz     | $V_{CE} = 10V, I_E = -5mA, f = 100MHz$ |

\* Transistor - For Reference Only

## Typical Curves – Tr2

NEW PRODUCT

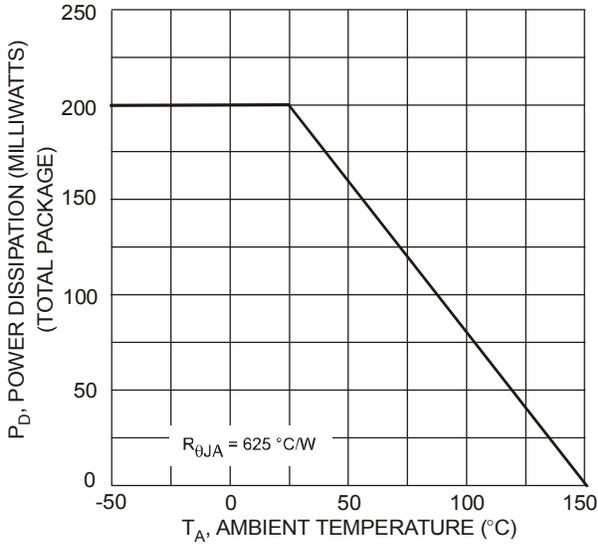


Fig. 1 Derating Curve

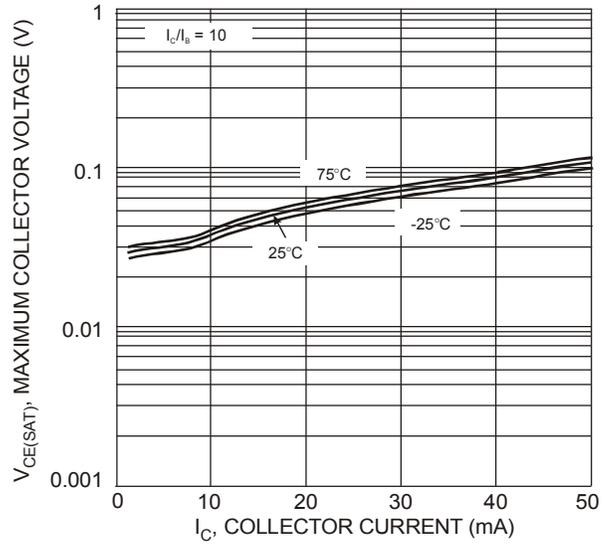


Fig. 2 V<sub>CE(SAT)</sub> vs. I<sub>C</sub>

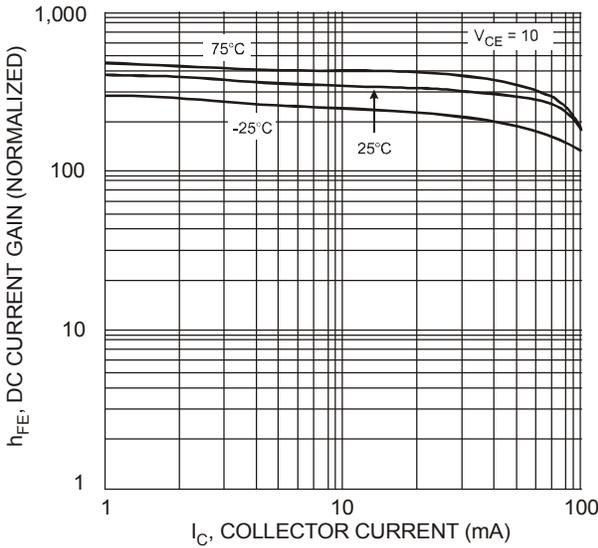


Fig. 3 DC Current Gain

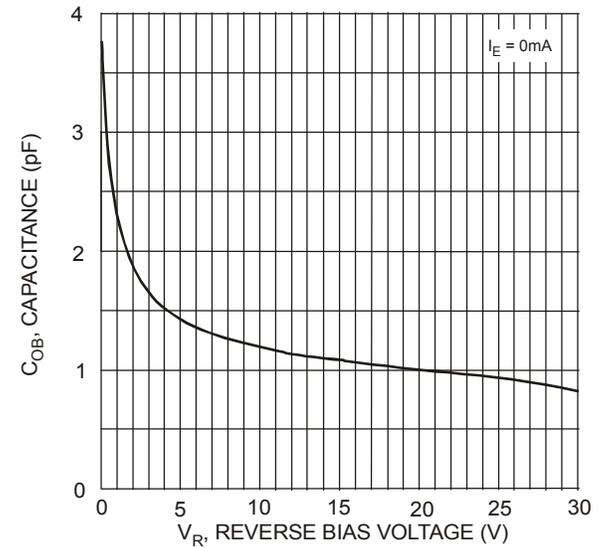


Fig. 4 Output Capacitance

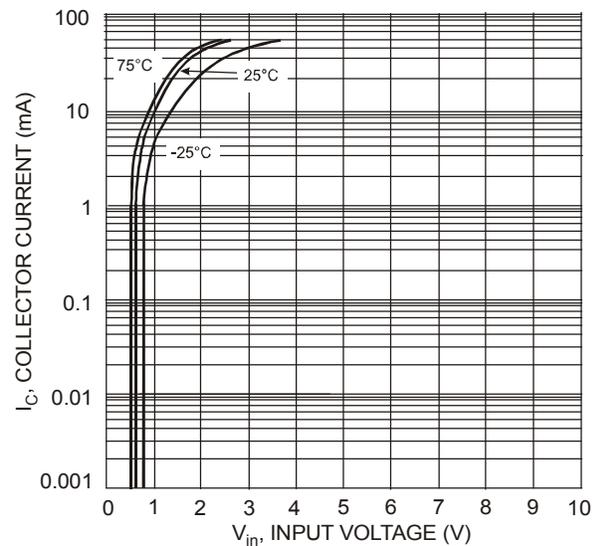


Fig. 5 Collector Current vs. Input Voltage

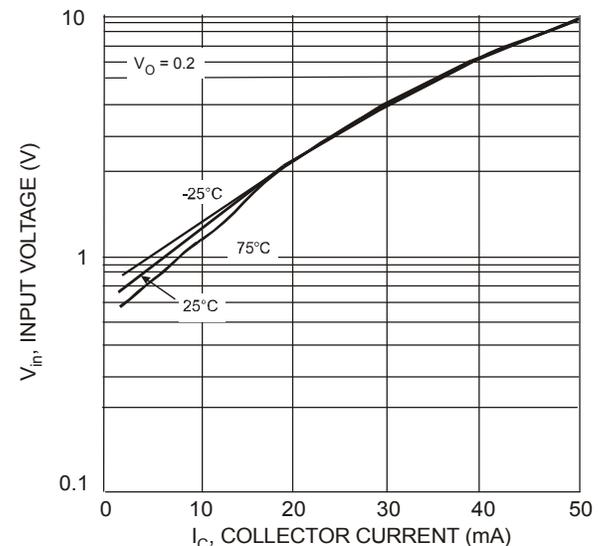


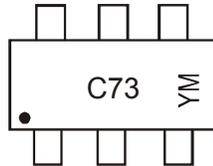
Fig. 6 Input Voltage vs. Collector Current

## Ordering Information (Note 5)

| Device      | Packaging | Shipping         |
|-------------|-----------|------------------|
| MIMD10A-7-F | SOT-363   | 3000/Tape & Reel |

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

## Marking Information



C73 = Product Type Marking Code  
 YM = Date Code Marking  
 Y = Year ex: P = 2003  
 M = Month ex: 9 = September

### Date Code Key

| Year | 2003 | 2004 | 2005 | 2006 | 2007 | 2008 | 2009 | 2010 | 2011 | 2012 |
|------|------|------|------|------|------|------|------|------|------|------|
| Code | 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.

## Данный компонент на территории Российской Федерации

### Вы можете приобрести в компании MosChip.

Для оперативного оформления запроса Вам необходимо перейти по данной ссылке:

<http://moschip.ru/get-element>

Вы можете разместить у нас заказ для любого Вашего проекта, будь то серийное производство или разработка единичного прибора.

В нашем ассортименте представлены ведущие мировые производители активных и пассивных электронных компонентов.

Нашей специализацией является поставка электронной компонентной базы двойного назначения, продукции таких производителей как XILINX, Intel (ex.ALTERA), Vicor, Microchip, Texas Instruments, Analog Devices, Mini-Circuits, Amphenol, Glenair.

Сотрудничество с глобальными дистрибьюторами электронных компонентов, предоставляет возможность заказывать и получать с международных складов практически любой перечень компонентов в оптимальные для Вас сроки.

На всех этапах разработки и производства наши партнеры могут получить квалифицированную поддержку опытных инженеров.

Система менеджмента качества компании отвечает требованиям в соответствии с ГОСТ Р ИСО 9001, ГОСТ РВ 0015-002 и ЭС РД 009

### Офис по работе с юридическими лицами:

105318, г.Москва, ул.Щербаковская д.3, офис 1107, 1118, ДЦ «Щербаковский»

Телефон: +7 495 668-12-70 (многоканальный)

Факс: +7 495 668-12-70 (доб.304)

E-mail: [info@moschip.ru](mailto:info@moschip.ru)

Skype отдела продаж:

moschip.ru

moschip.ru\_4

moschip.ru\_6

moschip.ru\_9