

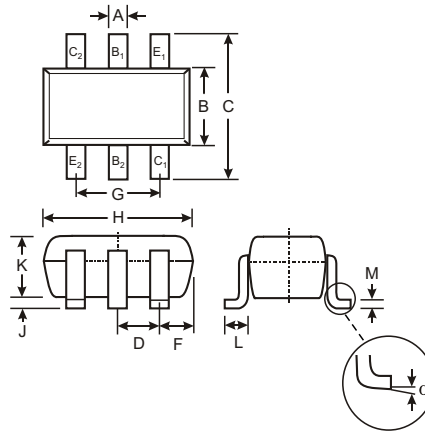
### Features

- Epitaxial Planar Die Construction
- Built-In Biasing Resistors
- One 500mA PNP and One 100mA NPN
- Lead Free Product

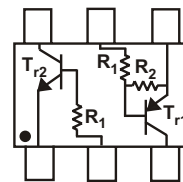
### Mechanical Data

- Case: SOT-363, Molded Plastic
- Case material - UL Flammability Rating 94V-0
- Moisture sensitivity: Level 1 per J-STD-020A
- Terminals: Finish - Matte Tin (Note 1)  
Solderable per MIL-STD-202, Method 208
- Marking Code: C73 (See Page 2)
- Ordering & Date Code: See Page 2
- Terminal Connections: See Diagram
- Weight: 0.015 grams (approx.)

P/N		R1	R2
MIMD10A	Tr1 Tr2	0.1K 10K	10K -



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		



SCHEMATIC 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	$^\circ\text{C}$

Note: 1. If lead-bearing terminal plating is required, please contact your Diodes Inc. sales representative for availability and minimum order details.  
2. Mounted on FR4 PC Board with recommended pad layout at <http://www.diodes.com/datasheets/ap02001.pdf>.

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

Characteristic	Symbol	Min	Typ	Max	Unit	Test Condition
Input Voltage	V <sub>I(off)</sub>	-0.3	—	—	V	V <sub>CC</sub> = -5V, I <sub>O</sub> = -100μA
	V <sub>I(on)</sub>	—	—	-1.5		V <sub>O</sub> = 0.3, I <sub>O</sub> = -100mA
Output Voltage	V <sub>O(on)</sub>	—	-0.1	-0.3	V	I <sub>O</sub> = -100mA/-5mA
Input Current	I <sub>I</sub>	—	—	-25	mA	V <sub>I</sub> = -2V
Output Current	I <sub>O(off)</sub>	—	—	-0.5	μA	V <sub>CC</sub> = -50V, V <sub>I</sub> = 0V
DC Current Gain	G <sub>I</sub>	68	—	—	—	—
Gain-Bandwidth Product*	f <sub>T</sub>	—	200	—	MHz	V <sub>CE</sub> = -10V, I <sub>E</sub> = -50mA, f = 100MHz

\* Transistor - For Reference Only

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

Characteristic	Symbol	Min	Typ	Max	Unit	Test Condition
Collector-Base Breakdown Voltage	BV <sub>CB0</sub>	50	—	—	V	I <sub>C</sub> = 50μA
Collector-Emitter Breakdown Voltage	BV <sub>CEO</sub>	50	—	—	V	I <sub>C</sub> = 1mA
Emitter-Base Breakdown Voltage	BV <sub>EBO</sub>	5	—	—	V	I <sub>E</sub> = 50μA
Collector Cutoff Current	I <sub>CB0</sub>	—	—	0.5	μA	V <sub>CB</sub> = 50V
Emitter Cutoff Current	I <sub>EBO</sub>	—	—	0.5	μA	V <sub>EB</sub> = 4V
Collector-Emitter Saturation Voltage	V <sub>CE(sat)</sub>	—	—	0.3	V	I <sub>C</sub> /I <sub>B</sub> = 10mA / 1.0mA
DC Current Transfer Ratio	h <sub>FE</sub>	100	250	600	—	I <sub>C</sub> = 1mA, V <sub>CE</sub> = 5V
Gain-Bandwidth Product*	f <sub>T</sub>	—	250	—	MHz	V <sub>CE</sub> = 10V, I <sub>E</sub> = -5mA, f = 100MHz

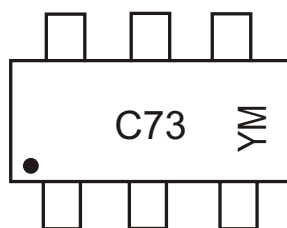
\* Transistor - For Reference Only

### Ordering Information (Notes 1 and 3)

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

- Notes: 1. If lead-bearing terminal plating is required, please contact your Diodes Inc. sales representative for availability and minimum order details.  
 3. 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
Code	P	R	S	T	U	V	W	X	Y

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

**TYPICAL CURVES - Tr2**

**NEW PRODUCT**

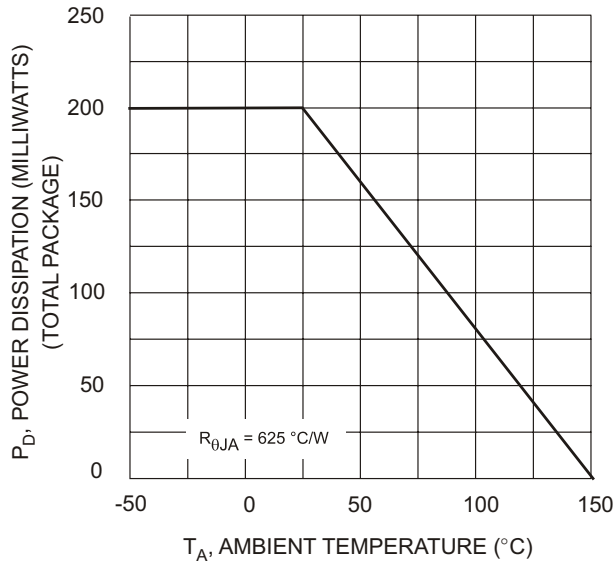


Fig. 1 Derating Curve

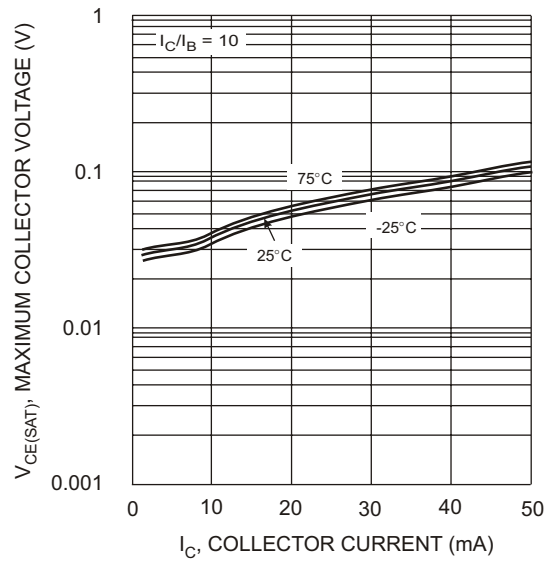


Fig. 2  $V_{CE(SAT)}$  vs.  $I_C$

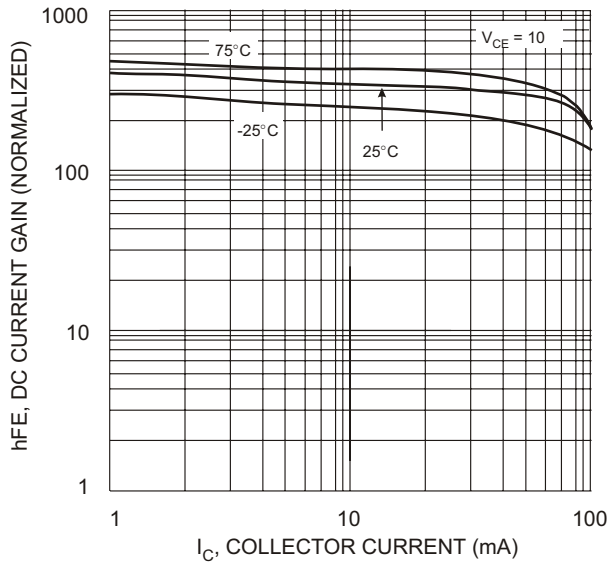


Fig. 3 DC Current Gain

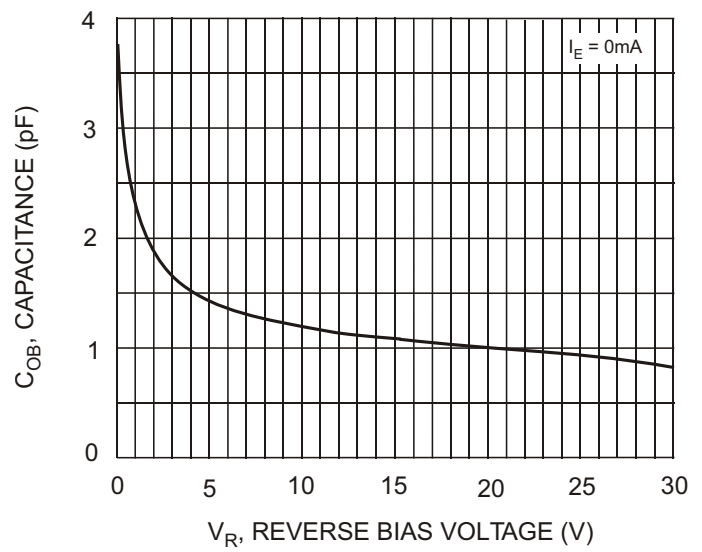


Fig. 4 Output Capacitance

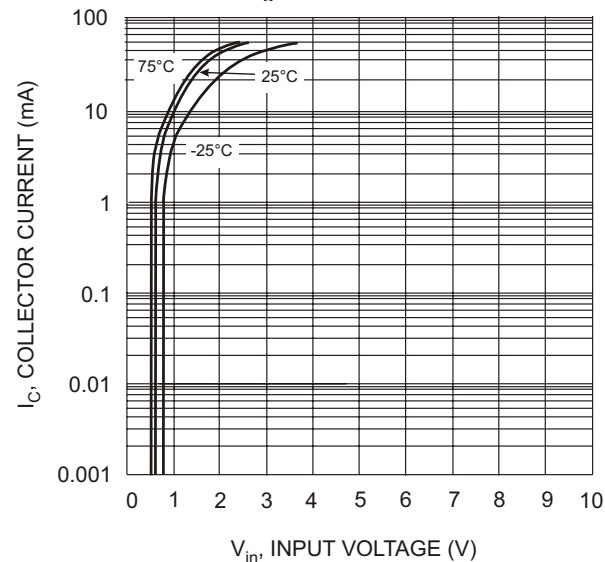


Fig. 5 Collector Current Vs. Input Voltage

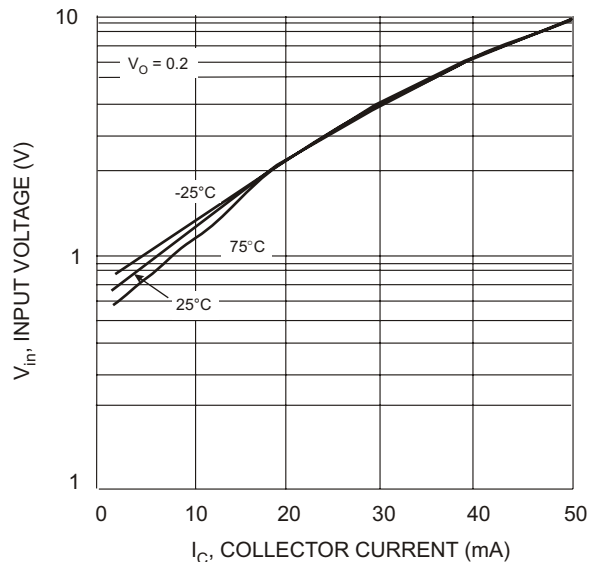


Fig. 6 Input Voltage vs. Collector Current