

General purpose (dual digital transistors)

UMB10N / IMB10A

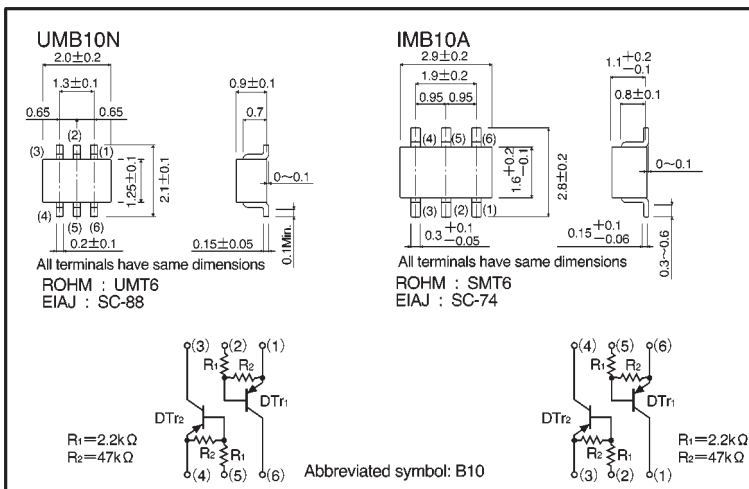
●Features

- 1) Two DTA123J chips in a UMT or SMT package.
- 2) Mounting possible with UMT3 or SMT3 automatic mounting machines.
- 3) Transistor elements are independent, eliminating interference.
- 4) Mounting cost and area can be cut in half.

●Structure

Epitaxial planar type
PNP silicon transistor
(Built-in resistor type)

●External dimensions (Units: mm)



The following characteristics apply to both DTr1 and DTr2.

●Absolute maximum ratings ($T_a = 25^\circ\text{C}$)

Parameter		Symbol	Limits	Unit
Supply voltage		V_{CC}	-50	V
Input voltage		V_{IN}	-12	V
			5	
Output current		I_o	-100	mA
		$I_{C(\text{Max.})}$	-100	
Power dissipation	UMB10N	P_d	150 (TOTAL)	*1
	IMB10A		300 (TOTAL)	*2
Junction temperature		T_j	150	$^\circ\text{C}$
Storage temperature		T_{stg}	-55 ~ +150	$^\circ\text{C}$

*1 120mW per element must not be exceeded.

*2 200mW per element must not be exceeded.

●Electrical characteristics (Ta = 25°C)

Parameter	Symbol	Min.	Typ.	Max.	Unit	Conditions
Input voltage	$V_{I(off)}$	—	—	-0.3	V	$V_{CC} = -5V, I_o = -100 \mu A$
	$V_{I(on)}$	-1.1	—	—		$V_o = -0.3V, I_o = -5mA$
Output voltage	$V_{O(on)}$	—	-0.1	-0.3	V	$I_o/I_i = -5mA/-0.25mA$
Input current	I_i	—	—	-3.6	mA	$V_i = -5V$
Output current	$I_{O(off)}$	—	—	-0.5	μA	$V_{CC} = -50V, V_i = 0V$
DC current gain	G_i	80	—	—	—	$V_o = -5V, I_o = -10mA$
Transition frequency	f_r	—	250	—	MHz	$V_{CE} = -10mA, I_E = 5mA, f = 100MHz$ *
Input resistance	R_i	1.54	2.2	2.86	k Ω	—
Resistance ratio	R_2/R_1	17	21	26	—	—

* Transition frequency of the device

●Packaging specifications

Part No.	Packaging type	Taping	
	Code	TN	T110
	Basic ordering unit (pieces)	3000	3000
UMB10N		○	—
IMB10A		—	○

●Electrical characteristic curves

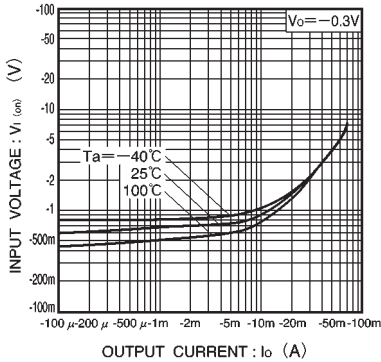


Fig.1 Input voltage vs. output current (ON characteristics)

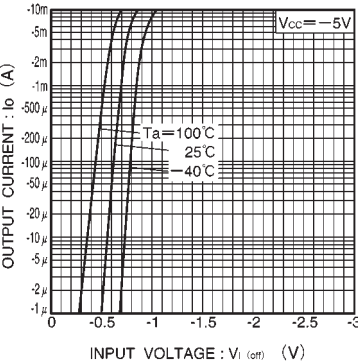


Fig.2 Output current vs. input voltage (OFF characteristics)

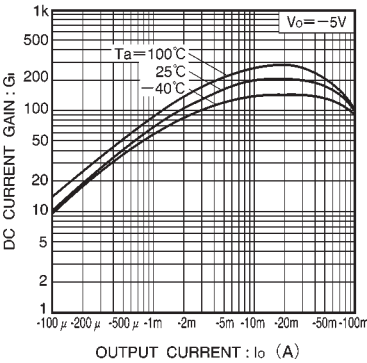


Fig.3 DC current gain vs. output current

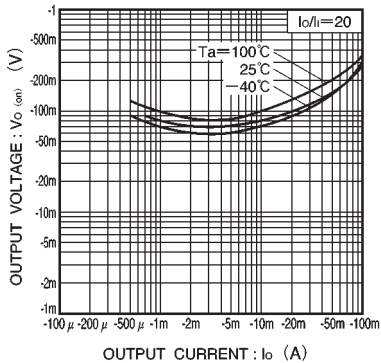


Fig.4 Output voltage vs. output current