

## DBC2314

## DUAL TRANSISTOR

# DIGITAL TRANSISTOR (BUILT-IN BIAS RESISTORS)

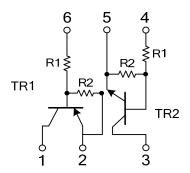
### DESCRIPTION

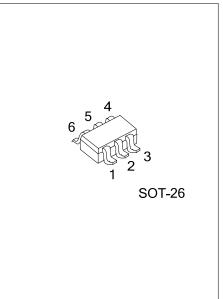
\* Both the DTB123Y chip and DTC114Y chip in a SOT-26 package. \* NPN/PNP silicon transistor(Built-in resistor type)

#### FEATURES

- \* Built-in bias resistors that implies easy ON/OFF applications.
- \* The bias resistors are thin-film resistors with complete isolation to allow positive input.

### EQUIVALENT CIRCUITS





#### ORDERING INFORMATION

Ordering Number			Deekege		Pin Assignment					Deaking	
		Package		1	2	3	4	5	6	Packing	
	DBC2314G-AG6-R			SOT-26	C1	E1	C2	B2	E2	B1	Tape Reel
Note:	Pin Assignment: C: Collector	B: Base		E: Emitter							
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DBC2314 <u>Ģ-AĢ6-Ŗ</u>			
	(1)Packing Type	(1) R: Tape Reel	
	(2)Package Type	(2) AG6: SOT-26	
	(3)Green Package	(3) G: Halogen Free and Lead Free	

### MARKING



### DUAL TRANSISTOR

#### ■ **ABSOLUTE MAXIMUM RATINGS** (T<sub>A</sub>=25°C, unless otherwise specified)

PARAMETER		SYMBOL	BOL RATINGS	
Sumply Voltone	TR1		-50	
Supply Voltage	TR2	Vcc	50	
	TR1		-12~+5	
Input Voltage	TR2	V <sub>IN</sub>	-6~+40	V
	TR1		-500	mA
Output Current	TR2	I <sub>C</sub>	100	mA
Power Dissipation		PD	200	mW
Junction Temperature		TJ	+150	°C
Storage Temperature		T <sub>STG</sub>	-55~+150	°C

Note: Absolute maximum ratings are those values beyond which the device could be permanently damaged. Absolute maximum ratings are stress ratings only and functional device operation is not implied.

#### ■ ELECTRICAL CHARACTERISTICS (T<sub>A</sub>=25°C, unless otherwise specified)

#### TR1 (PNP)

PARAMETER	SYMBOL	TEST CONDITIONS	MIN	TYP	MAX	UNIT			
OFF CHARACTERISTICS									
	V <sub>IN(OFF)</sub>	V <sub>CC</sub> =-5V, I <sub>OUT</sub> =-100µA			-0.3	V			
Input Voltage	V <sub>IN(ON)</sub>	V <sub>OUT</sub> =-0.3V, I <sub>OUT</sub> =-20mA	-2			V			
Output Voltage	V <sub>OUT(ON)</sub>	I <sub>OUT</sub> /I <sub>IN</sub> =-50mA/-2.5mA		-0.1	-0.3	V			
Input Current	I <sub>IN</sub>	V <sub>IN</sub> =-5V			-3.0	mA			
Output Current	I <sub>OUT(OFF)</sub>	V <sub>CC</sub> =-50V, V <sub>IN</sub> =0V			-0.5	μA			
ON CHARACTERISTICS									
DC Current Gain	h <sub>FE</sub>	V <sub>OUT</sub> =-5V, I <sub>OUT</sub> =-50mA	56						
SMALL SIGNAL CHARACTERISTICS									
Input Resistance	R <sub>1</sub>		1.54	2.2	2.86	KΩ			
Resistor Ratio	R <sub>2</sub> /R <sub>1</sub>		3.6	4.5	5.5				
Transition Frequency (Note 1)	f <sub>T</sub>	V <sub>CE</sub> =-10V, I <sub>E</sub> =50mA, f=100MHz		200		MHz			

TR2 (NPN)								
PARAMETER	SYMBOL	TEST CONDITIONS	MIN	TYP	MAX	UNIT		
OFF CHARACTERISTICS								
	V <sub>IN(OFF)</sub>	V <sub>CC</sub> =5V, I <sub>OUT</sub> =100µA			0.3	V		
Input Voltage	V <sub>IN(ON)</sub>	V <sub>OUT</sub> =0.3V, I <sub>OUT</sub> =1mA	1.4			V		
Output Voltage	V <sub>OUT(ON)</sub>	I <sub>OUT</sub> /I <sub>IN</sub> =5mA/0.25mA		0.1	0.3	V		
Input Current	I <sub>IN</sub>	V <sub>IN</sub> =5V			0.88	mA		
Output Current	I <sub>OUT(OFF)</sub>	V <sub>CC</sub> =50V, V <sub>IN</sub> =0V			0.5	μA		
ON CHARACTERISTICS								
DC Current Gain	h <sub>FE</sub>	V <sub>OUT</sub> =5V, I <sub>OUT</sub> =5mA	68					
SMALL SIGNAL CHARACTERISTICS								
Input Resistance	R <sub>1</sub>		7	10	13	KΩ		
Resistor Ratio	$\frac{R_2}{R_1}$		3.7	4.7	5.7			
Transition Frequency	f <sub>T</sub>	V <sub>CE</sub> =10V, I <sub>E</sub> =-5mA, f=100MHz		250		MHz		

Note 1. Transition frequency of the device



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