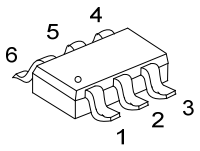
DTNP123J

Preliminary ***DUAL TRANSISTOR***

GENERAL PURPOSE (DUAL DIGITAL TRANSISTOR)

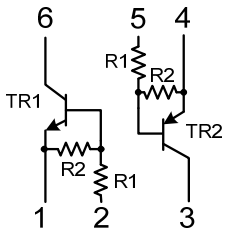


SOT-363

■ FEATURES

* Both the DTA123J chip and DTC123J chip in a SOT-363 package.
* NPN/PNP silicon transistor(Built-in resistor type)

■ EQUIVALENT CIRCUIT



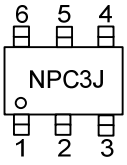
■ ORDERING INFORMATION

Ordering Number		Package	Pin Assignment						Packing
Lead Free	Halogen Free		1	2	3	4	5	6	
DTNP123JL-AL6-R	DTNP123JG-AL6-R	SOT-363	G1	I1	O2	G2	I2	O1	Tape Reel

Note: Pin Assignment: G: GND I: Input O: Output

DTNP123JG-AL6-R (1)Packing Type (2)Package Type (3)Green Package	(1) R: Tape Reel (2) AL6: SOT-363 (3) G: Halogen Free and Lead Free, L: Lead Free

■ MARKING



■ ABSOLUTE MAXIMUM RATINGS (T_A=25°C, unless otherwise specified)

PARAMETER	SYMBOL	RATINGS		UNIT
		TR1 (NPN)	TR2 (PNP)	
Supply Voltage	V_{CC}	50	-50	V
Input Voltage	V_{IN}	-5 ~ +12	-12 ~ +5	V
Output Current	I_{OUT}	100	-100	mA
	$I_{C(MAX)}$	100	-100	mA
Total Power Dissipation (120mW per element must not be exceeded)	P_D	150		mW
Junction Temperature	T_J	+150		°C
Storage Temperature	T_{STG}	-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_A=25°C, unless otherwise specified)

TR1 (NPN)

PARAMETER	SYMBOL	TEST CONDITIONS	MIN	TYP	MAX	UNIT
Input Voltage	$V_{I(OFF)}$	V_{CC}=5V, I_O=100μA			0.5	V
	$V_{I(ON)}$	V_O=0.3V, I_O=5mA	1.1			
Output Voltage	$V_{O(ON)}$	I_O/I_I =5mA/0.25mA		0.1	0.3	V
Input Current	I_I	V_I =5V			3.6	mA
Output Current	$I_{O(OFF)}$	V_{CC}=50V, V_I =0V			0.5	μA
DC Current Gain	h_{FE}	V_O=5V, I_O=10mA	80			
Input Resistance	R_1		1.54	2.2	2.86	KΩ
Resistance Ratio	R_2/R_1		17	21	26	
Transition Frequency	f_T	V_{CE} =10V, I_E=−5mA, f=100MHz (Note)		250		MHz

Note: Transition Frequency of the Device.

TR2 (PNP)

PARAMETER	SYMBOL	TEST CONDITIONS	MIN	TYP	MAX	UNIT
Input Voltage	$V_{I(OFF)}$	V_{CC}=-5V, I_O=-100μA			-0.5	V
	$V_{I(ON)}$	V_O=-0.3V, I_O=-5mA	-1.1			
Output Voltage	$V_{O(ON)}$	I_O/I_I =-5mA/-0.25mA		-0.1	-0.3	V
Input Current	I_I	V_I =-5V			-3.6	mA
Output Current	$I_{O(OFF)}$	V_{CC}=-50V, V_I =0V			-0.5	μA
DC Current Gain	G_I	V_O=-5V, I_O=-10mA	80			
Input Resistance	R_1		1.54	2.2	2.86	KΩ
Resistance Ratio	R_2/R_1		17	21	26	
Transition Frequency	f_T	V_{CE} =-10V, I_E=−5mA, f=100MHz (Note)		250		MHz

Note: Transition Frequency of the Device.