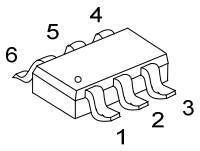
DTNP113EC

Preliminary ***DUAL TRANSISTOR***

GENERAL PURPOSE (DUAL DIGITAL TRANSISTOR)

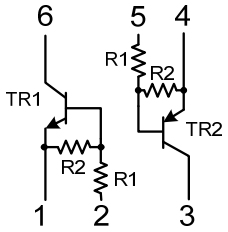


SOT-363

■ FEATURES

* Both the DTB113EC chip and DTD113EC chip in a SOT-363 package
* NPN/PNP silicon transistor(Built-in resistor type)

■ EQUIVALENT CIRCUIT



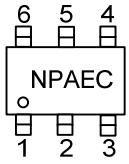
■ ORDERING INFORMATION

Ordering Number		Package	Pin Assignment						Packing
Lead Free	Halogen Free		1	2	3	4	5	6	
DTNP113ECL-AL6-R	DTNP113ECG-AL6-R	SOT-363	G1	I1	O2	G2	I2	O1	Tape Reel

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

DTNP113ECG-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}	-10 ~ +10	-10 ~ +10	V
Output Current	I_{OUT}	500	-500	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_{OUT}=100μA			0.5	V
	$V_{I(ON)}$	V_{OUT}=0.3V, I_{OUT}=20mA	3.0			
Output Voltage	$V_{O(ON)}$	I_{OUT} / I_{IN}=50mA/2.5mA			0.3	V
Input Current	I_I	V_{IN}=5V			7.2	mA
Output Current	$I_{O(OFF)}$	V_{CC}=50V, V_{IN}=0V			0.5	μA
DC Current Gain	h_{FE}	V_{OUT}=5V, I_{OUT}=50mA	33			
Input Resistance	R1		0.7	1.0	1.3	kΩ
Resistance Ratio	R2 / R1		0.8	1.0	1.2	
Transition Frequency	f_T	V_{CE}=10V, I_E=-50mA, f=100MHz (Note)		200		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_{OUT}=-100μA			-0.5	V
	$V_{I(ON)}$	V_{OUT}=-0.3V, I_{OUT}=-20mA	-3.0			
Output Voltage	$V_{O(ON)}$	I_{OUT} / I_{IN}=-50mA/-2.5mA			-0.3	V
Input Current	I_I	V_{IN}=-5V			-7.2	mA
Output Current	$I_{O(OFF)}$	V_{CC}=-50V, V_{IN}=0V			-0.5	μA
DC Current Gain	G_I	V_{OUT}=-5V, I_{OUT}=-50mA	33			
Input Resistance	R1		0.7	1.0	1.3	kΩ
Resistance Ratio	R2 / R1		0.8	1.0	1.2	
Transition Frequency	f_T	V_{CE}=-10V, I_E=50mA, f=100MHz (Note)		200		MHz

Note: Transition Frequency of the Device.