



**UD10K**

Preliminary

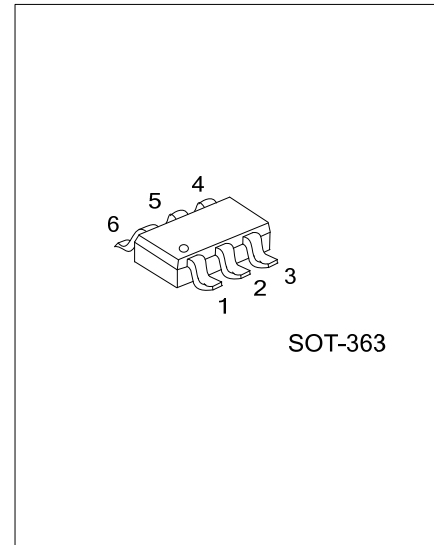
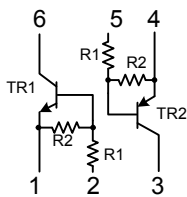
**DUAL TRANSISTOR**

**GENERAL PURPOSE  
(DUAL DIGITAL TRANSISTOR)**

■ **FEATURES**

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

■ **EQUIVALENT CIRCUIT**



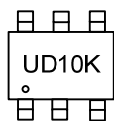
SOT-363

■ **ORDERING INFORMATION**

Ordering Number		Package	Pin Assignment						Packing
Lead Free	Halogen-Free		1	2	3	4	5	6	
UD10KL-AL6-R	UD10KG-AL6-R	SOT-363	E1	B1	C2	E2	B2	C1	Tape Reel

<p>UD10KG-AL6-R</p>	<p>(1) Packing Type</p> <p>(2) Package Type</p> <p>(3) Green Package</p>	<p>(1) R: Tape Reel</p> <p>(2) AL6: SOT-363</p> <p>(3) G: Halogen Free and Lead Free, L: Lead Free</p>
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■ **MARKING**



■ ABSOLUTE MAXIMUM RATINGS ( $T_A=25^\circ\text{C}$ , 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 (Note 2)	$P_D$	150		mW
Junction Temperature	$T_J$	+150		$^\circ\text{C}$
Storage Temperature	$T_{STG}$	-55 ~ +150		$^\circ\text{C}$

Notes: 1. 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.

2. 120mW per element must not be exceeded.

■ ELECTRICAL SPECIFICATIONS ( $T_A=25^\circ\text{C}$ , unless others specified)

**TR1 (NPN)**

PARAMETER	SYMBOL	TEST CONDITIONS	MIN	TYP	MAX	UNIT
Input Voltage	$V_{IN(OFF)}$	$V_{CC}=5V, I_{OUT}=100\mu\text{A}$			0.5	V
	$V_{IN(ON)}$	$V_{OUT}=0.3V, I_{OUT}=5\text{mA}$	1.1			V
Output Voltage	$V_{OUT(ON)}$	$I_{OUT}/I_{IN}=5\text{mA}/0.25\text{mA}$		0.1	0.3	V
Input Current	$I_{IN}$	$V_{IN}=5V$			3.6	mA
Output Current	$I_{OUT(OFF)}$	$V_{CC}=50V, V_{IN}=0V$			0.5	$\mu\text{A}$
DC Current Gain	$h_{FE}$	$V_{OUT}=5V, I_{OUT}=10\text{mA}$	80			
Input Resistance	$R_1$		1.54	2.2	2.86	K $\Omega$
Resistor Ratio	$\frac{R_2}{R_1}$		17	21	26	
Transition Frequency	$f_T$	$V_{CE}=10V, I_E=-5\text{mA}, f=100\text{MHz}$ (Note)		250		MHz

Note: Transition frequency of the device.

**TR2 (PNP)**

PARAMETER	SYMBOL	TEST CONDITIONS	MIN	TYP	MAX	UNIT
Input Voltage	$V_{IN(OFF)}$	$V_{CC}=-5V, I_{OUT}=-100\mu\text{A}$			-0.5	V
	$V_{IN(ON)}$	$V_{OUT}=-0.3V, I_{OUT}=-5\text{mA}$	-1.1			V
Output Voltage	$V_{OUT(ON)}$	$I_{OUT}/I_{IN}=-5\text{mA}/-0.25\text{mA}$		-0.1	-0.3	V
Input Current	$I_{IN}$	$V_{IN}=-5V$			-3.6	mA
Output Current	$I_{OUT(OFF)}$	$V_{CC}=-50V, V_{IN}=0V$			-0.5	$\mu\text{A}$
DC Current Gain	$h_{FE}$	$V_{OUT}=-5V, I_{OUT}=-10\text{mA}$	80			
Input Resistance	$R_1$		1.54	2.2	2.86	K $\Omega$
Resistance Ratio	$R_2/R_1$		17	21	26	
Transition Frequency	$f_T$	$V_{CE}=-10V, I_E=-5\text{mA}, f=100\text{MHz}$ (Note)		250		MHz

Note: Transition frequency of the device.

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