



## UD9J

Preliminary

DUAL TRANSISTOR

### NPN EPITAXIAL TRANSISTOR

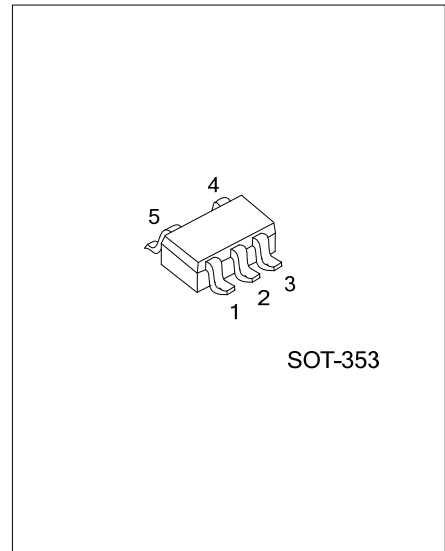
#### DESCRIPTION

The UTC **UD9J** is an dual transistor; it uses UTC's advanced technology to provide the customers with low collector -emitter saturation voltage, etc.

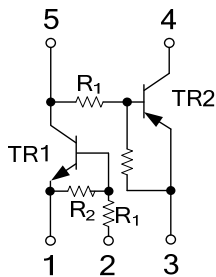
The UTC **UD9J** is suitable for switching, inverter circuit and driver circuit applications.

#### FEATURES

- \* Both the DTA114Y chip and DTC114Y chip in a SOT-353 package.
- \* NPN/PNP silicon transistor(Built-in resistor type)
- \* Low collector-emitter saturation voltage
- \* With built-in bias resistors
- \* Simplify circuit design



#### EQUIVALENT CIRCUIT



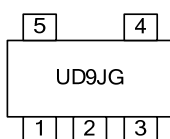
#### ORDERING INFORMATION

Ordering Number	Package	Pin Assignment					Packing
		1	2	3	4	5	
UD9JG-AL5-R	SOT-353	G1	I	G2	O	O	Tape Reel

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

<p>UD9JG-AL5-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) AL5: SOT-353</p> <p>(3) G: Halogen Free and 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	TR2	
Supply Voltage	$V_{CC}$	50	-50	V
Input Voltage	$V_{IN}$	-6 ~ +40	-40 ~ +6	V
Output Current	$I_{OUT}$	70	-70	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 CHARACTERISTICS ( $T_A=25^\circ\text{C}$ , unless otherwise specified)

TR1

PARAMETER	SYMBOL	TEST CONDITIONS	MIN	TYP	MAX	UNIT
Input Voltage	$V_{I(OFF)}$	$V_{CC}=5V, I_{OUT}=100\mu\text{A}$			0.3	V
	$V_{I(ON)}$	$V_{OUT}=0.3V, I_{OUT}=1\text{mA}$	1.4			V
Output Voltage	$V_{O(ON)}$	$I_{OUT}=5\text{mA}, I_{IN}=0.25\text{mA}$		0.1	0.3	V
Input Current	$I_{IN}$	$V_{IN}=5V$			0.88	mA
Output Current	$I_{O(OFF)}$	$V_{CC}=50V, V_{IN}=0V$			0.5	$\mu\text{A}$
DC Current Gain	$h_{FE}$	$V_{OUT}=5V, I_{OUT}=5\text{mA}$	68			
Input Resistance	$R_1$		7	10	13	$\text{K}\Omega$
Resistance Ratio	$\frac{R_2}{R_1}$		3.7	4.7	5.7	
Transition Frequency	$f_T$	$V_{CE}=10V, I_E=-5\text{mA}, f=100\text{MHz}$ (Note)		250		MHz

TR2

PARAMETER	SYMBOL	TEST CONDITIONS	MIN	TYP	MAX	UNIT
Input Voltage	$V_{I(OFF)}$	$V_{CC}=-5V, I_{OUT}=100\mu\text{A}$			-0.3	V
	$V_{I(ON)}$	$V_{OUT}=-0.3V, I_{OUT}=-1\text{mA}$	-1.4			V
Output Voltage	$V_{O(ON)}$	$I_{OUT}=-5\text{mA}, I_{IN}=-0.25\text{mA}$		-0.1	-0.3	V
Input Current	$I_{IN}$	$V_{IN}=-5V$			-0.88	mA
Output Current	$I_{O(OFF)}$	$V_{CC}=-50V, V_{IN}=0V$			-0.5	$\mu\text{A}$
DC Current Gain	$h_{FE}$	$V_{OUT}=-5V, I_{OUT}=-5\text{mA}$	68			
Input Resistance	$R_1$		7	10	13	$\text{K}\Omega$
Resistance Ratio	$\frac{R_2}{R_1}$		3.7	4.7	5.7	
Transition Frequency	$f_T$	$V_{CE}=-10V, I_E=5\text{mA}, f=100\text{MHz}$ (Note)		250		MHz

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