



UD9J

Preliminary

DUAL TRANSISTOR

NPN EPITAXIAL TRANSISTOR

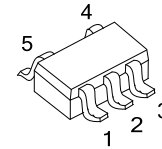
DESCRIPTION

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.

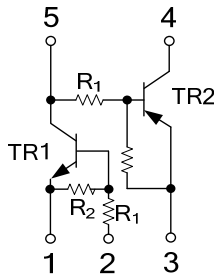
FEATURES

- * 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



SOT-353

EQUIVALENT CIRCUIT



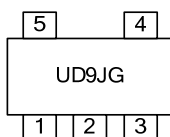
ORDERING INFORMATION

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

UD9JG-AL5-R (1) Packing Type (2) Package Type (3) Green Package	(1) R: Tape Reel (2) AL5: SOT-353 (3) G: Halogen Free and Lead Free
---	--

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	$V_{I(OFF)}$	$V_{CC}=5V, I_{OUT}=100\mu A$			0.3	V
	$V_{I(ON)}$	$V_{OUT}=0.3V, I_{OUT}=1mA$	1.4			V
Output Voltage	$V_{O(ON)}$	$I_{OUT}=5mA, I_{IN}=0.25mA$		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	μA
DC Current Gain	h_{FE}	$V_{OUT}=5V, I_{OUT}=5mA$	68			
Input Resistance	R_1		7	10	13	K Ω
Resistance Ratio	$\frac{R_2}{R_1}$		3.7	4.7	5.7	
Transition Frequency	f_T	$V_{CE}=10V, I_E=-5mA, f=100MHz$ (Note)		250		MHz

TR2

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

UTC assumes no responsibility for equipment failures that result from using products at values that exceed, even momentarily, rated values (such as maximum ratings, operating condition ranges, or other parameters) listed in products specifications of any and all UTC products described or contained herein. UTC products are not designed for use in life support appliances, devices or systems where malfunction of these products can be reasonably expected to result in personal injury. Reproduction in whole or in part is prohibited without the prior written consent of the copyright owner. The information presented in this document does not form part of any quotation or contract, is believed to be accurate and reliable and may be changed without notice.