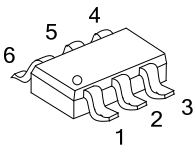
GENERAL PURPOSE (DUAL DIGITAL TRANSISTOR)



SOT-363

■ DESCRIPTION

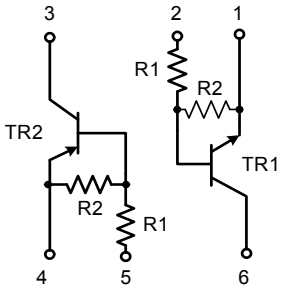
The UTC **UD9K** is an dual transistor; it uses UTC's advanced technology to provide the customers with low collector -emitter saturation voltage, etc.

The UTC **UD9K** is suitable for switching, inverter circuit and driver circuit applications.

■ FEATURES

* Both the DTA114Y chip and DTC114Y chip in a SOT-363 package.
* NPN/PNP silicon transistor(Built-in resistor type)
* Low collector-emitter saturation voltage
* With built-in bias resistors
* Simplify circuit design

■ EQUIVALENT CIRCUIT



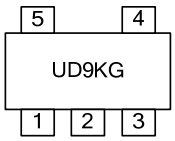
■ ORDERING INFORMATION

Ordering Number	Package	Pin Assignment						Packing
		1	2	3	4	5	6	
UD9KG-AL6-R	SOT-363	E1	B1	C2	E2	B2	C1	Tape Reel

Note: Pin Assignment: E: Emitter B: Base C: Collector

UD9KG-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

■ 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}	-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		°C
Storage Temperature	T_{STG}	-55 ~ +150		°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°C, unless others specified)

TR1 (NPN)

PARAMETER	SYMBOL	TEST CONDITIONS	MIN	TYP	MAX	UNIT
Input Voltage	$V_{IN(OFF)}$	V_{CC} =5V, I_{OUT} =100μA			0.3	V
	$V_{IN(ON)}$	V_{OUT} =0.3V, I_{OUT} =1mA	1.4			V
Output Voltage	$V_{OUT(ON)}$	I_{OUT}/I_{IN} =5mA/0.25mA		0.1	0.3	V
Input Current	I_{IN}	V_{IN}=5V			0.88	mA
Output Current	$I_{OUT(OFF)}$	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	KΩ
Resistor Ratio	$\frac{R_2}{R_1}$		3.7	4.7	5.7	
Transition Frequency	f_T	V_{CE} =10V, I_E =−5mA, f=100MHz		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}=-100μA			-0.3	V
	$V_{IN(ON)}$	V_{OUT}=-0.3V, I_{OUT}=-1mA	-1.4			V
Output Voltage	$V_{OUT\ (ON)}$	I_{OUT}/I_{IN}=-5mA/-0.25mA		-0.1	-0.3	V
Input Current	I_{IN}	V_{IN}=-5V			-0.88	mA
Output Current	$I_{OUT(OFF)}$	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	KΩ
Resistance Ratio	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

Note: Transition frequency of the device.