



## UG9J

Preliminary

NPN EPITAXIAL SILICON TRANSISTOR

### NPN EPITAXIAL TRANSISTOR

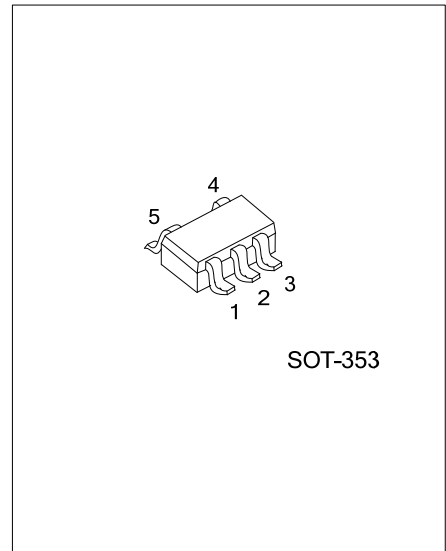
#### DESCRIPTION

The UTC **UG9J** is an NPN epitaxial transistor; it uses UTC's advanced technology to provide the customers with low collector-emitter saturation voltage, etc.

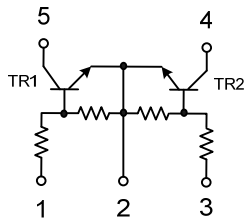
The UTC **UG9J** is suitable for switching, inverter circuit and driver circuit applications.

#### FEATURES

- \* Low collector-emitter saturation voltage
- \* With built-in bias resistors
- \* Simplify circuit design



#### EQUIVALENT CIRCUIT



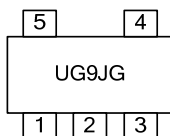
#### ORDERING INFORMATION

Ordering Number	Package	Pin Assignment					Packing
		1	2	3	4	5	
UG9JG-AL5-R	SOT-353	B1	E	B2	C2	C1	Tape Reel

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

<p>UG9JG-AL5-R</p> <ul style="list-style-type: none"> <li>(1) Packing Type</li> <li>(2) Package Type</li> <li>(3) Green Package</li> </ul>	<ul style="list-style-type: none"> <li>(1) R: Tape Reel</li> <li>(2) AL5: SOT-353</li> <li>(3) G: Halogen Free and Lead Free</li> </ul>
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#### MARKING



■ ABSOLUTE MAXIMUM RATINGS ( $T_A=25^{\circ}\text{C}$ , unless otherwise specified)

PARAMETER	SYMBOL	RATINGS	UNIT
Collector-Base Voltage	$V_{CBO}$	50	V
Collector-Emitter Voltage	$V_{CEO}$	50	V
Emitter-Base Voltage	$V_{EBO}$	10	V
Collector Current	$I_C$	100	mA
Collector Power Dissipation (Total rating)	$P_C$	200	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. These characteristics apply to TR1 and TR2.

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

PARAMETER	SYMBOL	TEST CONDITIONS	MIN	TYP	MAX	UNIT
Collector Cut-Off Current	$I_{CBO}$	$V_{CB}=50\text{V}, I_E=0$			100	nA
	$I_{CEO}$	$V_{CE}=50\text{V}, I_B=0$			500	nA
Emitter Cut-Off Current	$I_{EBO}$	$V_{EB}=10\text{V}, I_C=0$	0.38		0.71	mA
DC Current Gain	$h_{FE}$	$V_{CE}=5\text{V}, I_C=10\text{mA}$	50			
Collector-Emitter Saturation Voltage	$V_{CE(SAT)}$	$I_C=5\text{mA}, I_B=0.25\text{mA}$		0.1	0.3	V
Input Voltage (ON)	$V_{IN(ON)}$	$V_{CE}=0.2\text{V}, I_C=5\text{mA}$	1.2		2.4	V
Input Voltage (OFF)	$V_{IN(OFF)}$	$V_{CE}=5\text{V}, I_C=0.1\text{mA}$	1.0		1.5	V
Transition Frequency	$f_T$	$V_{CE}=10\text{V}, I_E=5\text{mA}$		250		MHz
Input Resistor	R1		7	10	13	k $\Omega$
Resistor Ratio	R1 / R2		0.9	1.0	1.1	

Note: These characteristics apply to TR1 and TR2.

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