

**UMH30**

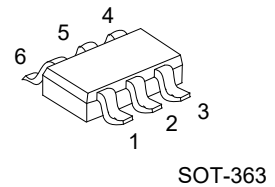
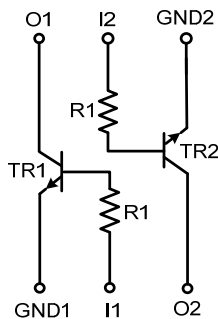
Preliminary

NPN SILICON TRANSISTOR**DUAL NPN DIGITAL
TRANSISTOR (BUILT- IN BIAS
RESISTORS)****■ DESCRIPTION**

The UTC **UMH30** is an dual transistor; it uses UTC's advanced technology to provide the customers with low collector -emitter saturation voltage, etc.

■ FEATURES

- * NPN silicon transistor (Built-in resistor type)
- * 100 mA output current capability
- * Built-in bias resistors
- * Simplifies circuit design
- * Reduces component count
- * Reduces pick and place costs

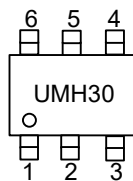
**■ EQUIVALENT CIRCUIT****■ ORDERING INFORMATION**

Ordering Number		Package	Pin Assignment						Packing
Lead Free	Halogen Free		1	2	3	4	5	6	
UMH30L-AL6-R	UMH30G-AL6-R	SOT-363	G1	I1	O2	G2	I2	O1	Tape Reel

Note: Pin Assignment: G: GND I: IN O: OUT

UMH30G-AL6-R		(1)Packing Type	(1) R: Tape Reel
		(2)Package Type	(2) AL6: SOT-363
		(3)Green Package	(3) G: Halogen Free and Lead Free, L: Lead Free

■ MARKING



■ **ABSOLUTE MAXIMUM RATING** ($T_A=25^{\circ}\text{C}$, 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}	5	V
Output Current	I_{OUT}	100	mA
Power Dissipation	P_C	300	mW
Junction Temperature	T_J	+150	$^{\circ}\text{C}$
Ambient Temperature	T_{amb}	-55 ~ +150	$^{\circ}\text{C}$
Storage Temperature	T_{STG}	-55 ~ +150	$^{\circ}\text{C}$

Note: 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.

■ **THERMAL DATA**

PARAMETER	SYMBOL	RATINGS	UNIT
Junction to Ambient	θ_{JA}	417	$^{\circ}\text{C/W}$

Note: Device mounted on FR-4 substrate PC board, 2oz copper, with 1inch square copper plate.

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

PARAMETER	SYMBOL	TEST CONDITIONS	MIN	TYP	MAX	UNIT
Collector-Base Breakdown Voltage	$V_{(BR)CBO}$	$I_C=100\mu\text{A}$, $I_E=0\text{A}$	50			V
Collector-Emitter Breakdown Voltage	$V_{(BR)CEO}$	$I_C=2\text{mA}$, $I_B=0\text{A}$	50			V
Collector-Base Cut-Off Current	I_{CBO}	$V_{CB}=50\text{V}$, $I_E=0\text{A}$			100	nA
Collector-Emitter Cut-Off Current	I_{CEO}	$V_{CE}=30\text{V}$, $I_B=0\text{A}$			100	nA
Emitter-Base Cut-Off Current	I_{EBO}	$V_{EB}=5\text{V}$, $I_C=0\text{A}$			100	nA
DC Current Gain	h_{FE}	$V_{CE}=5\text{V}$, $I_C=20\text{mA}$	30			
Collector-Emitter Saturation Voltage	$V_{CE(SAT)}$	$I_C=10\text{mA}$, $I_B=0.5\text{mA}$			150	mV
Bias Resistor 1 (Input)	R1		1.54	2.2	2.86	K Ω
Collector Capacitance	C_C	$V_{CB}=10\text{V}$, $I_E=0\text{A}$, $f=1\text{MHz}$			2.5	pF

Note: Transition frequency of the device.

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