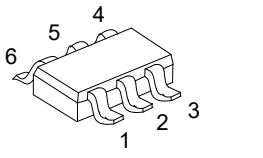
UMB1

PNP SILICON TRANSISTOR

DUAL PNP DIGITAL TRANSISTOR (BUILT- IN BIAS RESISTORS)



SOT-363

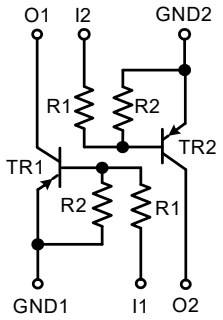
■ DESCRIPTION

The UTC **UMB1** is an dual transistor; it uses UTC's advanced technology to provide the customers with low collector -emitter saturation voltage, etc.

■ FEATURES

* PNP 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

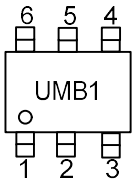
Ordering Number		Package	Pin Assignment						Packing
Lead Free	Halogen Free		1	2	3	4	5	6	
UMB1L-AL6-R	UMB1G-AL6-R	SOT-363	G1	I1	O2	G2	I2	O1	Tape Reel

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

UMB1G-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, L: Lead Free

■ MARKING



■ ABSOLUTE MAXIMUM RATING (T_A=25°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
Input Voltage	V_{IN}	-40 ~ +10	V
Output Current	I_{OUT}	-100	mA
Power Dissipation	P_C	300	mW
Junction Temperature	T_J	+150	°C
Ambient Temperature	T_A	-55 ~ +150	°C
Storage Temperature	T_{STG}	-55 ~ +150	°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	°C/W

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

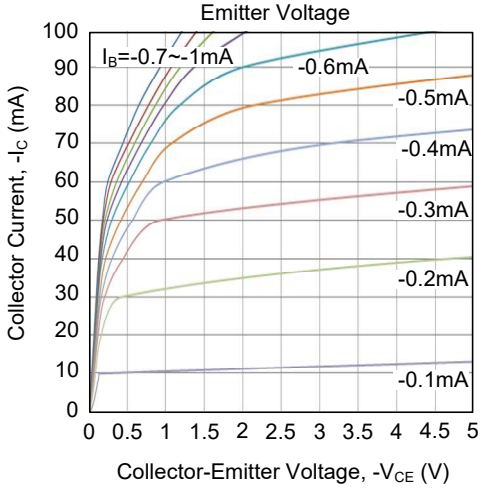
■ ELECTRICAL CHARACTERISTICS (T_A=25°C, unless otherwise specified)

PARAMETER	SYMBOL	TEST CONDITIONS	MIN	TYP	MAX	UNIT
Collector-Base Breakdown Voltage	$V_{(BR)CBO}$	I_C=-100μA, I_E=0A	-50			V
Collector-Emitter Breakdown Voltage	$V_{(BR)CEO}$	I_C=-2mA, I_B=0A	-50			V
Collector-Base Cut-Off Current	I_{CBO}	V_{CB}=-50V, I_E=0A			-100	nA
Collector-Emitter Cut-Off Current	I_{CEO}	V_{CE}=-30V, I_B=0A			-100	nA
Emitter-Base Cut-Off Current	I_{EBO}	V_{EB}=-5V, I_C=0A			-180	μA
DC Current Gain	h_{FE}	V_{CE}=-5V, I_C=-5mA	60			
Collector-Emitter Saturation Voltage	$V_{CE(SAT)}$	I_C=-10mA, I_B=-0.5mA			-150	mV
Off-State Input Voltage	$V_{I(OFF)}$	V_{CE}=-5V, I_C=-100μA			-0.8	V
On-State Input Voltage	$V_{I(ON)}$	V_{CE}=-0.3V, I_C=-5mA	-2.5			V
Bias Resistor 1 (Input)	R1		15.4	22	28.6	KΩ
Bias Resistor Ratio	R2/R1		0.8	1	1.2	
Collector Capacitance	C_C	V_{CB}=-10V, I_E=0A, f=1MHz			3	pF
Transition Frequency	f_T	V_{CE}=-10V, I_C=-5mA, f=100MHz (Note)		180		MHz

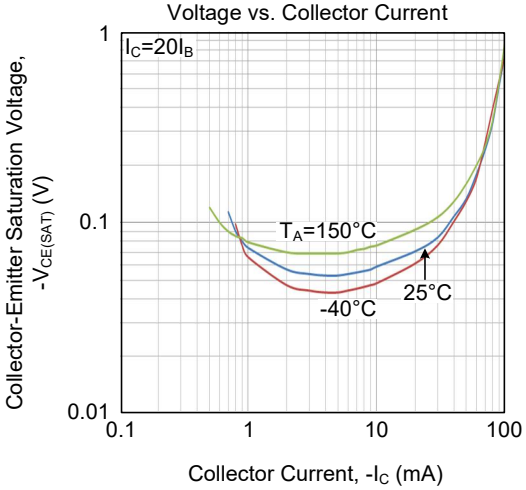
Note: Transition frequency of the device.

■ TYPICAL CHARACTERISTICS

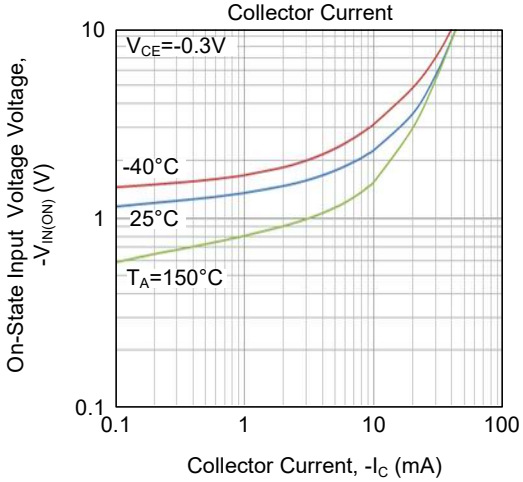
Collector Current vs. Collector-Emitter Voltage



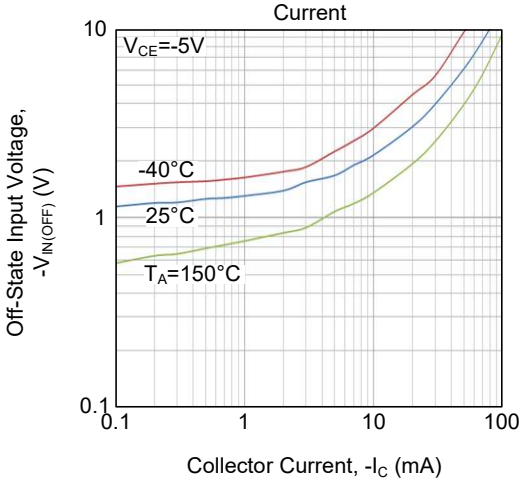
Collector-Emitter Saturation Voltage vs. Collector Current



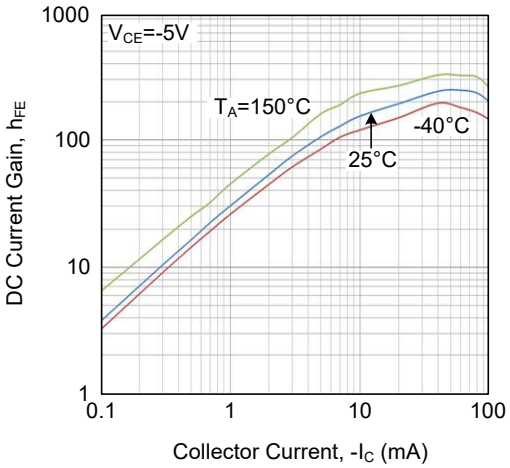
On-State Input Voltage vs. Collector Current



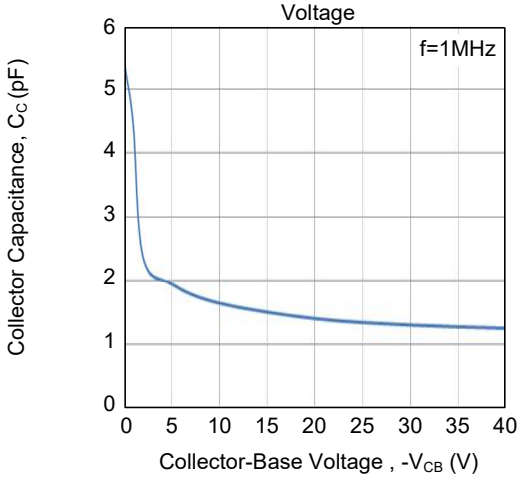
Off-State Input Voltage vs. Collector Current



DC Current Gain vs. Collector Current



Capacitance vs. Reverse-Biased Voltage



■ TYPICAL CHARACTERISTICS (Cont.)