



# MMBTA42/43

## NPN SILICON TRANSISTOR

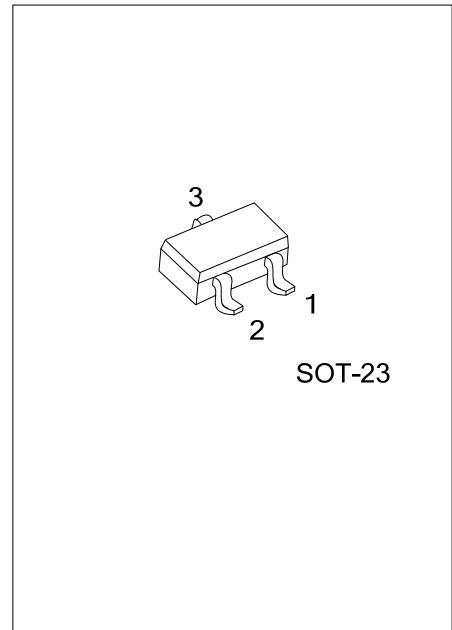
### HIGH VOLTAGE TRANSISTOR

■ DESCRIPTION

The UTC **MMBTA42/43** are high voltage transistors, designed for telephone switch and high voltage switch.

■ FEATURES

- \* Collector-Emitter voltage:  $V_{CE0}=300V$ (MMBTA42)
- \* Collector-Emitter voltage:  $V_{CE0}=200V$ (MMBTA43)
- \* High current gain
- \* Collector Dissipation:  $P_{C(max)}=350mW$



■ ORDERING INFORMATION

Ordering Number		Package	Pin Assignment			Packing
Lead Free	Halogen Free		1	2	3	
MMBTA42L-AE3-R	MMBTA42G-AE3-R	SOT-23	E	B	C	Tape Reel
MMBTA43L-AE3-R	MMBTA43G-AE3-R	SOT-23	E	B	C	Tape Reel

<p>MMBTA42L-AE3-R</p> <p>(1) Packing Type (2) Package Type (3) Lead Plating</p>	<p>(1) R: Tape Reel (2) AE3: SOT-23 (3) G: Halogen Free, L: Lead Free, Blank: Pb/Sn</p>
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■ MARKING

MMBTA42	MMBTA43
<p>L: Lead Free G: Halogen Free</p>	<p>L: Lead Free G: Halogen Free</p>

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## NPN SILICON TRANSISTOR

### ■ ABSOLUTE MAXIMUM RATINGS (Ta=25°C)

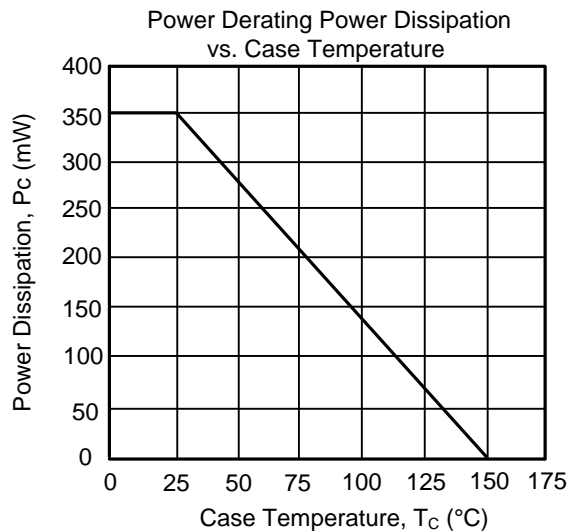
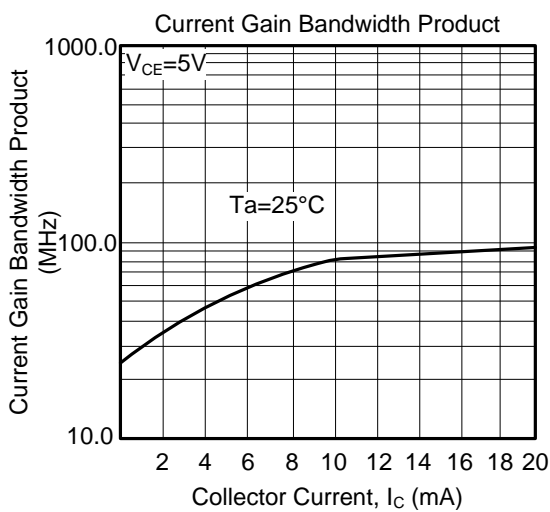
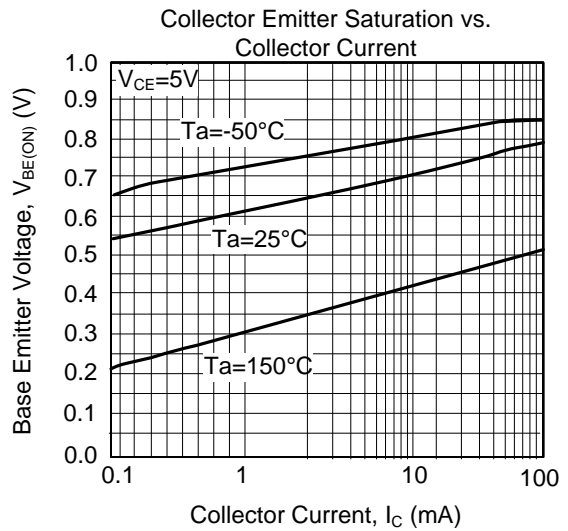
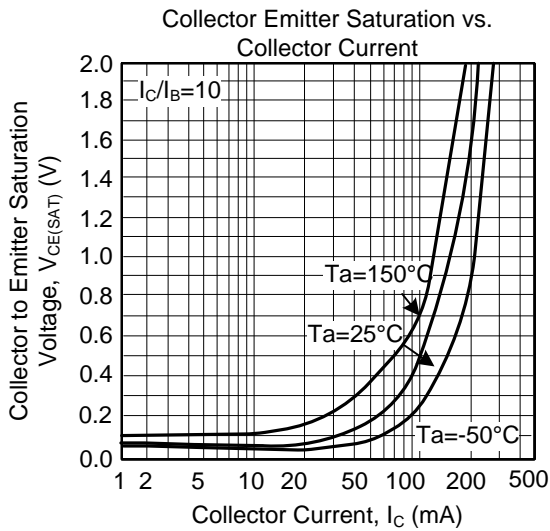
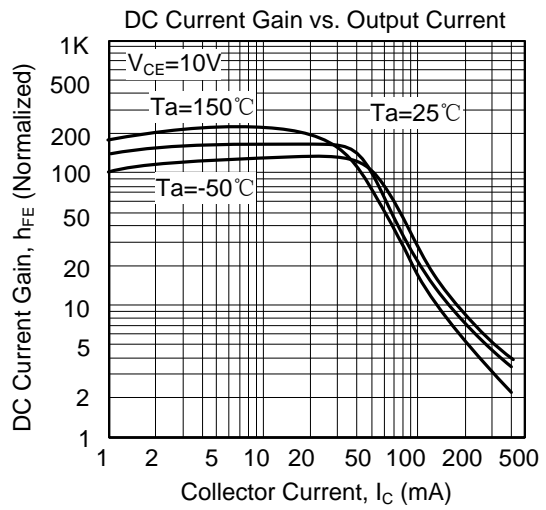
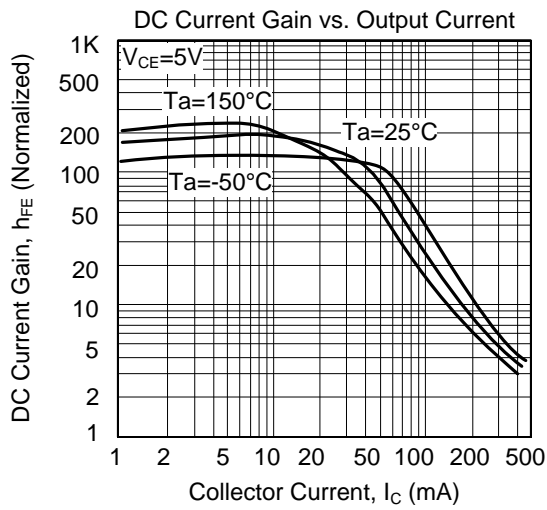
PARAMETER	SYMBOL	RATINGS	UNIT
Collector-Base Voltage	MMBTA42	300	V
	MMBTA43	200	
Collector-Emitter Voltage	MMBTA42	300	V
	MMBTA43	200	
Emitter-Base Voltage	V <sub>EBO</sub>	6	V
Collector Dissipation (Ta=25°C)	P <sub>C</sub>	350	mW
Collector Current	I <sub>C</sub>	500	mA
Junction Temperature	T <sub>J</sub>	+150	°C
Storage Temperature	T <sub>STG</sub>	-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

### ■ ELECTRICAL CHARACTERISTICS (T<sub>J</sub>=25°C, unless otherwise specified)

PARAMETER	SYMBOL	TEST CONDITIONS	MIN	TYP	MAX	UNIT
Collector-Base Breakdown Voltage	MMBTA42	I <sub>C</sub> =100μA, I <sub>E</sub> =0	300			V
	MMBTA43		200			
Collector-Emitter Breakdown Voltage	MMBTA42	I <sub>C</sub> =1mA, I <sub>B</sub> =0	300			V
	MMBTA43		200			
Emitter-Base Breakdown Voltage	BV <sub>EBO</sub>	I <sub>E</sub> =100μA, I <sub>C</sub> =0	6			V
Collector-Emitter Saturation Voltage	V <sub>CE(SAT)</sub>	I <sub>C</sub> =20mA, I <sub>B</sub> =2mA			0.2	V
Base-Emitter Saturation Voltage	V <sub>BE(SAT)</sub>	I <sub>C</sub> =20mA, I <sub>B</sub> =2mA			0.90	V
Collector Cut-Off Current	MMBTA42	V <sub>CB</sub> =200V, I <sub>E</sub> =0			100	nA
	MMBTA43		V <sub>CB</sub> =160V, I <sub>E</sub> =0			
Emitter Cut-Off Current	MMBTA42	V <sub>EB</sub> =6V, I <sub>C</sub> =0			100	nA
	MMBTA43		V <sub>EB</sub> =4V, I <sub>C</sub> =0			
DC Current Gain	h <sub>FE</sub>	V <sub>CE</sub> =10V, I <sub>C</sub> =1mA	80			
		V <sub>CE</sub> =10V, I <sub>C</sub> =10mA	80		300	
		V <sub>CE</sub> =10V, I <sub>C</sub> =30mA	80			
Current Gain Bandwidth Product	f <sub>T</sub>	V <sub>CE</sub> =20V, I <sub>C</sub> =10mA f=100MHz	50			MHz
Collector Base Capacitance	MMBTA42	V <sub>CB</sub> =20V, I <sub>E</sub> =0, f=1MHz			3	pF
	MMBTA43				4	

## TYPICAL CHARACTERISTICS



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