



## MMBTA42/43

## NPN SILICON TRANSISTOR

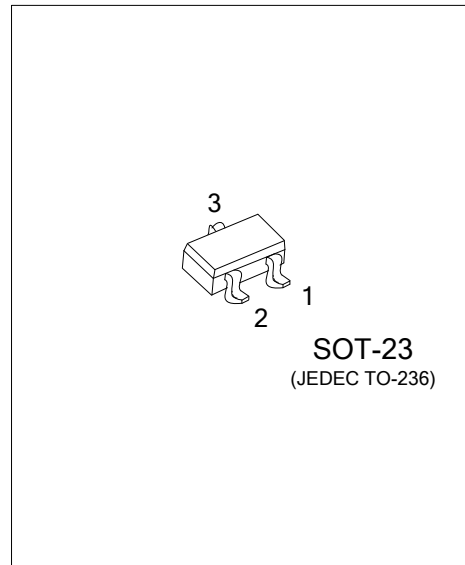
### HIGH VOLTAGE TRANSISTOR

#### DESCRIPTION

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

#### FEATURES

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



#### ORDERING INFORMATION

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

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

<p>MMBTA42G-AE3-R</p> <p>(1) Packing Type</p> <p>(2) Package Type</p> <p>(3) Green Package</p>	<p>(1) R: Tape Reel</p> <p>(2) AE3: SOT-23</p> <p>(3) G: Halogen Free and Lead Free</p>
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#### MARKING

MMBTA42	MMBTA43
<p>1DG</p>	<p>1FG</p>

# MMBTA42/43

## NPN SILICON TRANSISTOR

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

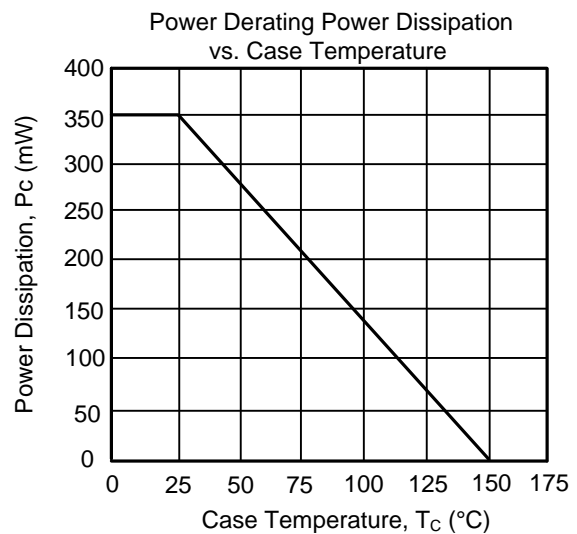
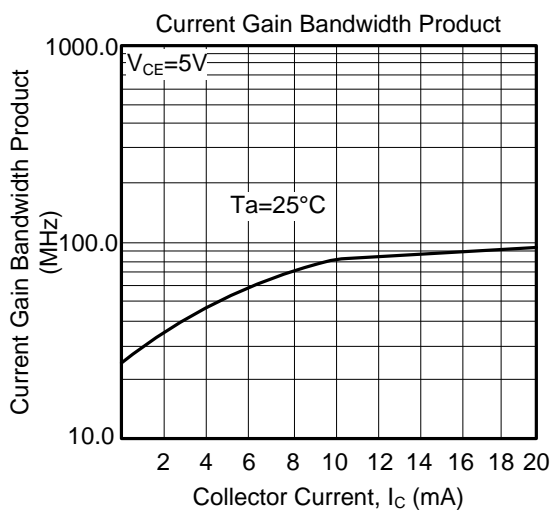
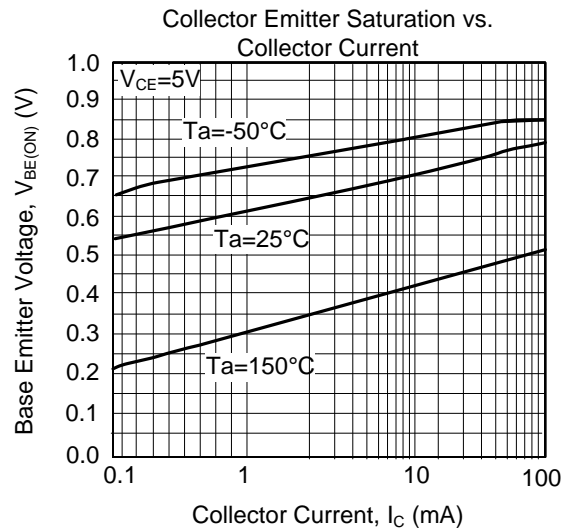
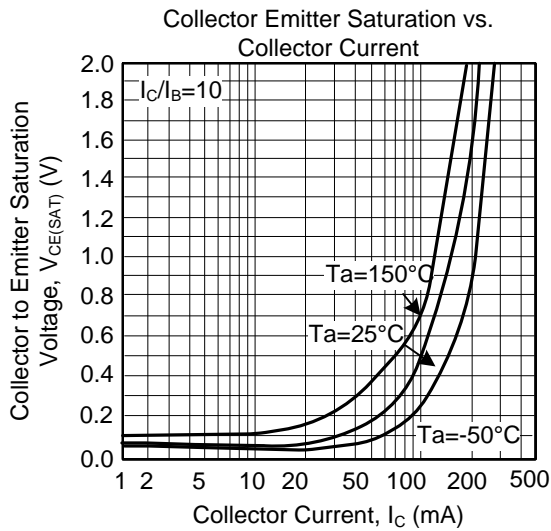
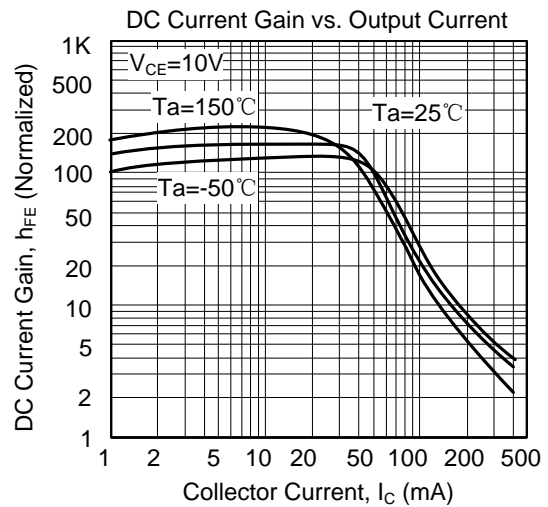
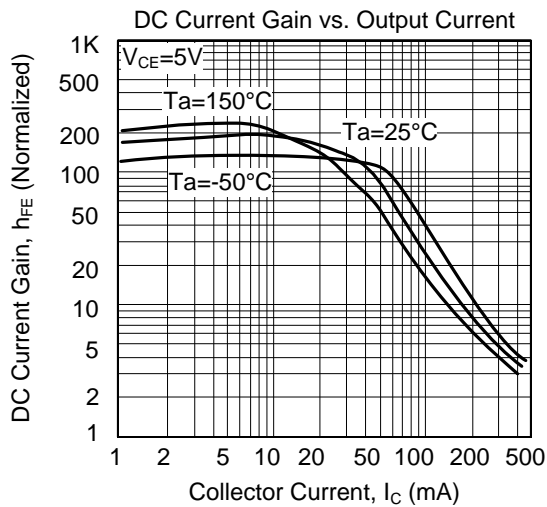
PARAMETER		SYMBOL	RATINGS	UNIT
Collector-Base Voltage	MMBTA42	$V_{CBO}$	300	V
	MMBTA43		200	
Collector-Emitter Voltage	MMBTA42	$V_{CEO}$	300	V
	MMBTA43		200	
Emitter-Base Voltage		$V_{EBO}$	6	V
Collector Dissipation ( $T_a=25^\circ\text{C}$ )		$P_C$	350	mW
Collector Current		$I_C$	500	mA
Junction Temperature		$T_J$	+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

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

PARAMETER		SYMBOL	TEST CONDITIONS	MIN	TYP	MAX	UNIT
Collector-Base Breakdown Voltage	MMBTA42	$BV_{CBO}$	$I_C=100\mu\text{A}, I_E=0$	300			V
	MMBTA43			200			
Collector-Emitter Breakdown Voltage	MMBTA42	$BV_{CEO}$	$I_C=1\text{mA}, I_B=0$	300			V
	MMBTA43			200			
Emitter-Base Breakdown Voltage		$BV_{EBO}$	$I_E=100\mu\text{A}, I_C=0$	6			V
Collector-Emitter Saturation Voltage		$V_{CE(SAT)}$	$I_C=20\text{mA}, I_B=2\text{mA}$			0.2	V
Base-Emitter Saturation Voltage		$V_{BE(SAT)}$	$I_C=20\text{mA}, I_B=2\text{mA}$			0.90	V
Collector Cut-Off Current	MMBTA42	$I_{CBO}$	$V_{CB}=200\text{V}, I_E=0$			100	nA
	MMBTA43		$V_{CB}=160\text{V}, I_E=0$			100	
Emitter Cut-Off Current	MMBTA42	$I_{EBO}$	$V_{EB}=6\text{V}, I_C=0$			100	nA
	MMBTA43		$V_{EB}=4\text{V}, I_C=0$			100	
DC Current Gain			$V_{CE}=10\text{V}, I_C=1\text{mA}$	80			
			$V_{CE}=10\text{V}, I_C=10\text{mA}$	80		300	
			$V_{CE}=10\text{V}, I_C=30\text{mA}$	80			
Current Gain Bandwidth Product		$f_T$	$V_{CE}=20\text{V}, I_C=10\text{mA}$ $f=100\text{MHz}$	50			MHz
Collector Base Capacitance	MMBTA42	$C_{cb}$	$V_{CB}=20\text{V}, I_E=0, f=1\text{MHz}$			3	pF
	MMBTA43					4	

## TYPICAL CHARACTERISTICS



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