



MMBTA42/43

NPN SILICON TRANSISTOR

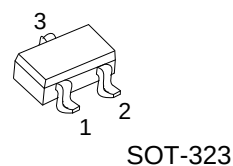
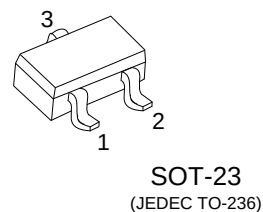
HIGH VOLTAGE TRANSISTOR

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
Lead Free	Halogen Free		1	2	3	
MMBTA42L-AE3-R	MMBTA42G-AE3-R	SOT-23	B	E	C	Tape Reel
MMBTA42L-AL3-R	MMBTA42G-AL3-R	SOT-323	B	E	C	Tape Reel
MMBTA43L-AE3-R	MMBTA43G-AE3-R	SOT-23	B	E	C	Tape Reel

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

MMBTA42G-AE3-R		(1) Packing Type	(1) R: Tape Reel
		(2) Package Type	(2) AE3: SOT-23, AL3: SOT-323
		(3) Green Package	(3) G: Halogen Free and Lead Free, L: Lead Free

MARKING

MMBTA42	MMBTA43
 L: Lead Free G: Halogen Free	 L: Lead Free G: Halogen Free

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

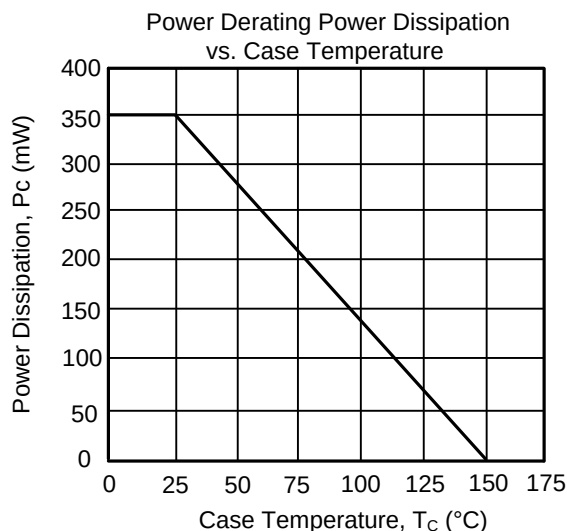
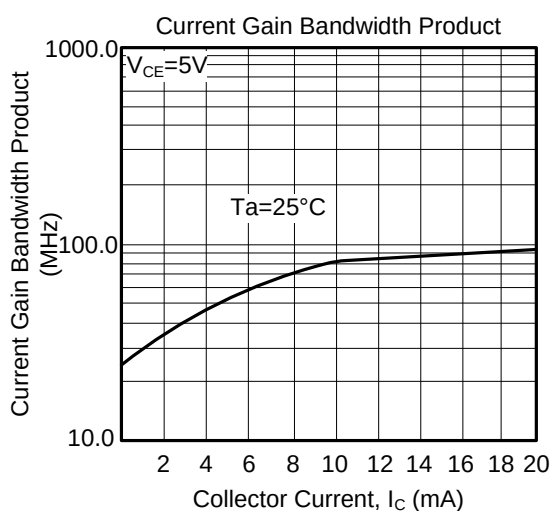
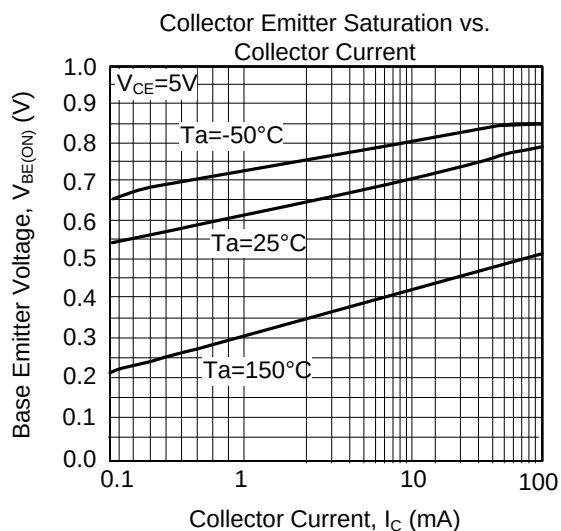
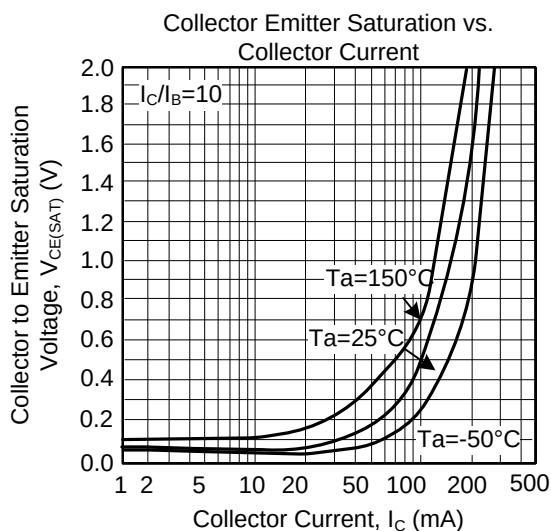
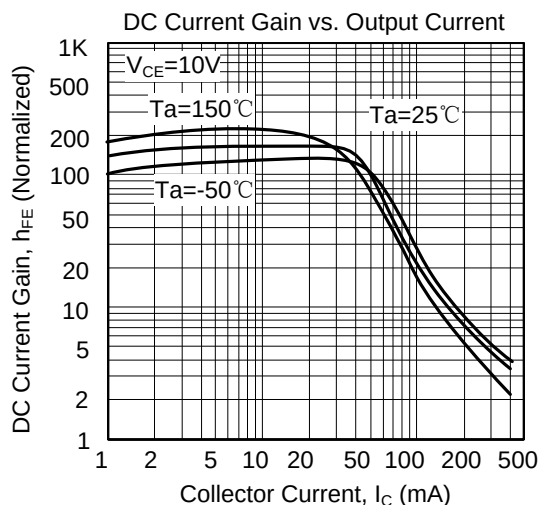
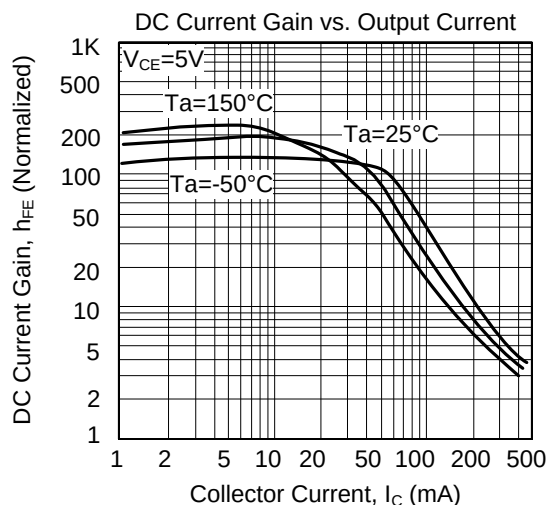
PARAMETER		SYMBOL	RATINGS	UNIT
Collector-Base Voltage	MMBTA42	V_{CBO}	300	V
	MMBTA43		200	
Collector-Emitter Voltage	MMBTA42	V_{CEO}	300	V
	MMBTA43		200	
Emitter-Base Voltage		V_{EBO}	6	V
Collector Dissipation ($T_A=25^{\circ}\text{C}$)	SOT-23	P_C	350	mW
	SOT-323		300	mW
Collector Current		I_C	500	mA
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		h_{FE}	$V_{CE}=10\text{V}$, $I_C=1\text{mA}$	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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