



MMBTA29

NPN EPITAXIAL SILICON TRANSISTOR

DARLINGTON TRANSISTOR

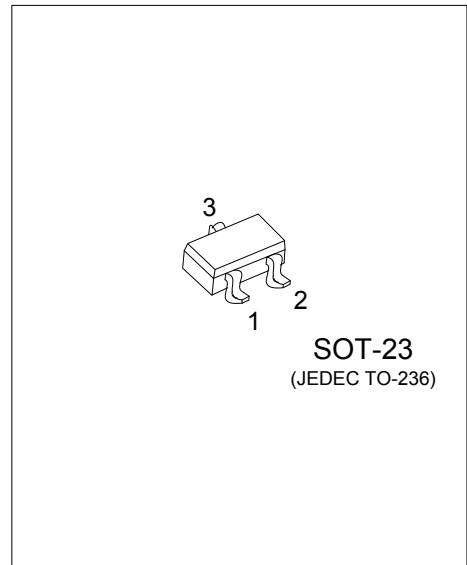
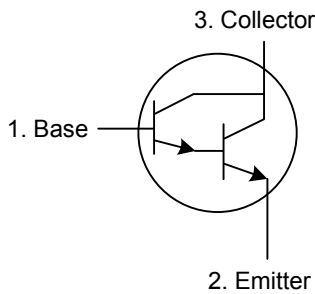
DESCRIPTION

The UTC **MMBTA29** is a darlington transistor, it uses UTC's advanced technology to provide customers with high DC current gain, etc.

FEATURES

* High DC current gain

EQUIVALENT CIRCUIT



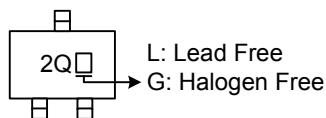
ORDERING INFORMATION

Ordering Number		Package	Pin Assignment			Packing
Lead Free	Halogen Free		1	2	3	
MMBTA29L-AE3-R	MMBTA29G-AE3-R	SOT-23	B	E	C	Tape Reel

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

MMBTA29G-AE3-R		
	(1) Packing Type	(1) R: Tape Reel
	(2) Package Type	(2) AE3: SOT-23
	(3) Green Package	(3) G: Halogen Free and Lead Free, L: Lead Free

MARKING



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

PARAMETER	SYMBOL	RATINGS	UNIT
Collector-Base Voltage	V_{CBO}	100	V
Collector-Emitter Voltage	V_{CES}	100	V
Emitter-Base Voltage	V_{EBO}	12	V
Collector Current-Continuous	I_C	500	mA
Power Dissipation	P_D	350	mW
Junction Temperature	T_J	-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 CHARACTERISTICS

PARAMETER	SYMBOL	RATINGS	UNIT
Junction to Ambient	θ_{JA}	357	$^\circ\text{C/W}$

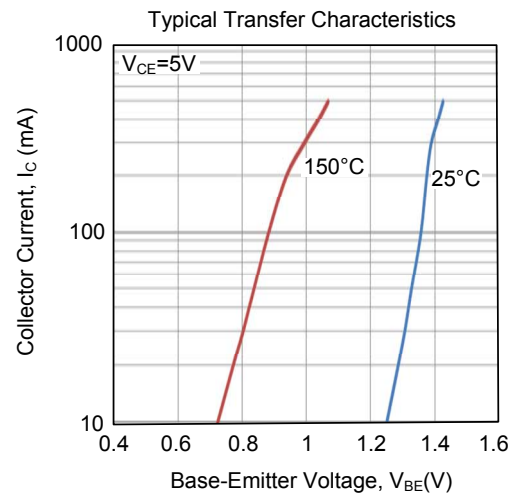
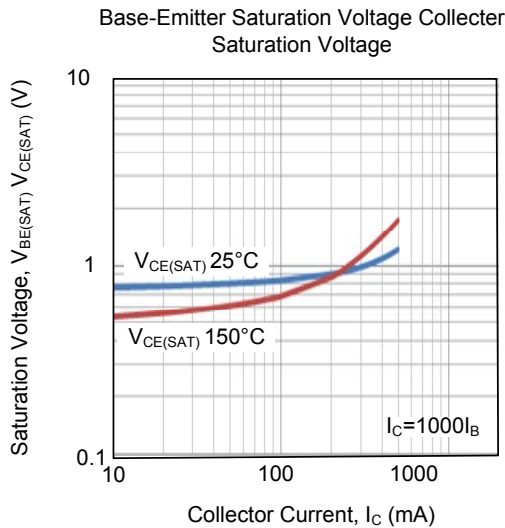
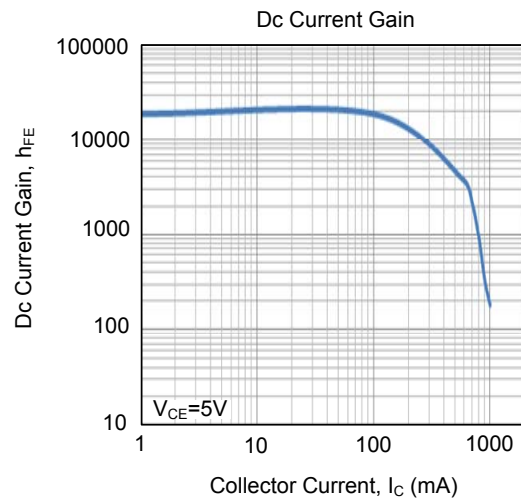
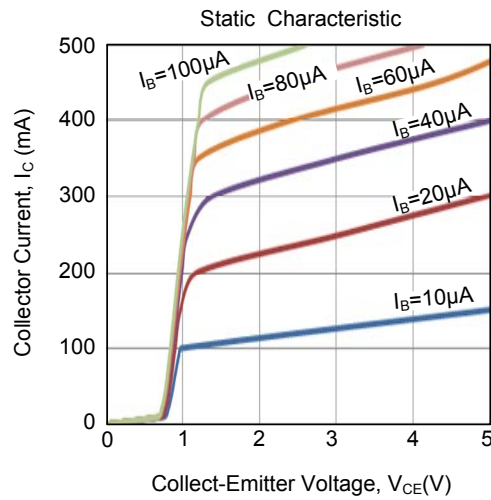
Note: The data tested by surface mounted on a 1 inch² FR-4 board with 2OZ copper.

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

PARAMETER	SYMBOL	TEST CONDITIONS	MIN	TYP	MAX	UNIT
OFF CHARACTERISTICS						
Collector-Emitter Breakdown Voltage	BV_{CES}	$I_C=100\mu\text{A}$, $V_{BE}=0$	100			V
Collector-Base Breakdown Voltage	BV_{CBO}	$I_C=100\mu\text{A}$, $I_E=0$	100			V
Emitter-Base Breakdown Voltage	BV_{EBO}	$I_E=10\mu\text{A}$, $I_C=0$	12			V
Collector Cut-Off Current	I_{CBO}	$V_{CB}=80\text{V}$, $I_E=0$			100	nA
	I_{CES}	$V_{CE}=80\text{V}$, $V_{BE}=0$			500	nA
Emitter Cut-Off Current	I_{EBO}	$V_{EB}=10\text{V}$, $I_C=0$			100	nA
ON CHARACTERISTICS (Note 1)						
DC Current Gain	h_{FE}	$V_{CE}=5.0\text{V}$, $I_C=10\text{mA}$	10000			
		$V_{CE}=5.0\text{V}$, $I_C=100\text{mA}$	10000			
Collector-Emitter Saturation Voltage	$V_{CE(sat)}$	$I_C=10\text{mA}$, $I_B=0.01\text{mA}$			1.2	V
		$I_C=100\text{mA}$, $I_B=0.1\text{mA}$			1.5	V
Base-Emitter On Voltage	$V_{BE(on)}$	$I_C=100\text{mA}$, $V_{CE}=5.0\text{V}$			2.0	V

Note: Pulse Test: Pulse Width $\leq 300\mu\text{s}$, Duty Cycle $\leq 2.0\%$.

TYPICAL CHARACTERISTICS



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