



## ULB124

## NPN SILICON TRANSISTOR

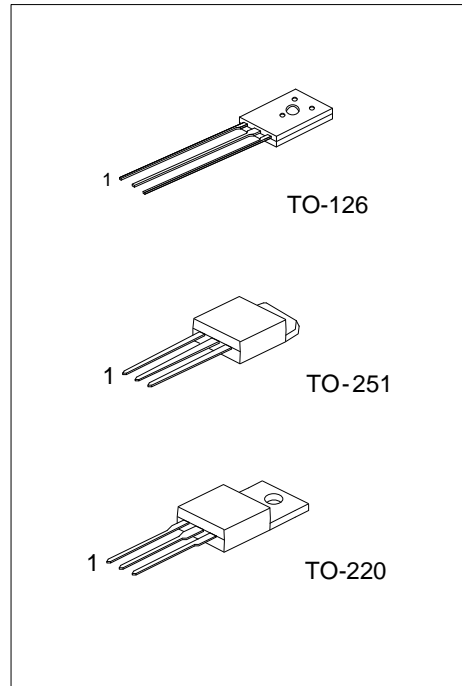
### NPN EPITAXIAL PLANAR TRANSISTOR

#### DESCRIPTION

The UTC **ULB124** is designed for high voltage, high speed switching inductive circuits, and amplifier applications.

#### FEATURES

- \* High Speed Switching
- \* Low Saturation Voltage
- \* High Reliability



#### ORDERING INFORMATION

Ordering Number		Package	Pin Assignment			Packing
Lead Free	Halogen Free		1	2	3	
ULB124L-xx-TA3-T	ULB124G-xx-TA3-T	TO-220	B	C	E	Tube
ULB124L-xx-TM3-T	ULB124G-xx-TM3-T	TO-251	B	C	E	Tube
ULB124L-xx-T60-K	ULB124G-xx-T60-K	TO-126	B	C	E	Bulk

<p>ULB124G-xx-TA3-T</p>	<p>(1) T: Tube</p> <p>(2) TA3: TO-220, TM3: TO-251, T60: TO-126</p> <p>(3) xx: refer to Classification of hFE1</p> <p>(4) G: Halogen Free, L: Lead Free</p>
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■ ABSOLUTE MAXIMUM RATING (T<sub>A</sub>=25°C)

PARAMETER		SYMBOL	RATINGS	UNIT
Collector-Base Voltage		V <sub>CBO</sub>	600	V
Collector-Emitter Voltage		V <sub>CEO</sub>	400	V
Emitter-Base Voltage		V <sub>EBO</sub>	8	V
Collector Current	DC	I <sub>C</sub>	2	A
	Pulse		4	A
Base Current	DC	I <sub>B</sub>	1	A
	Pulse		2	A
Power Dissipation (T <sub>C</sub> =25°C)	TO-220	P <sub>D</sub>	35	W
	TO-251		20	
	TO-126		1.4	
Junction Temperature		T <sub>J</sub>	150	°C
Storage Temperature		T <sub>STG</sub>	-40 ~ +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>A</sub>=25°C, unless otherwise specified.)

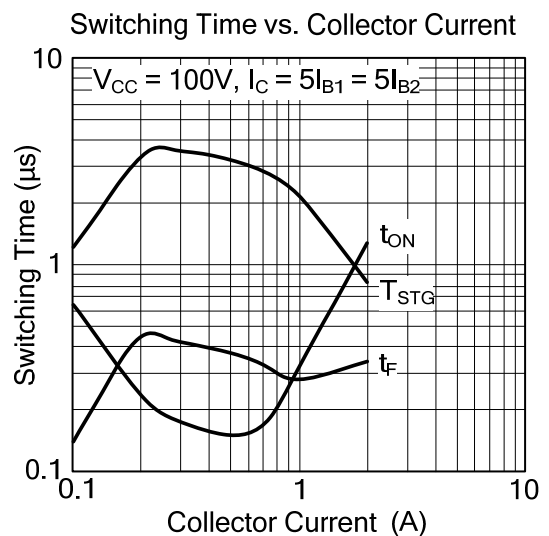
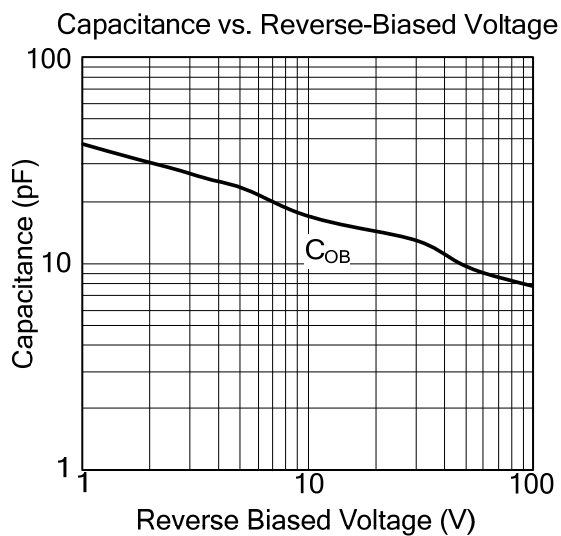
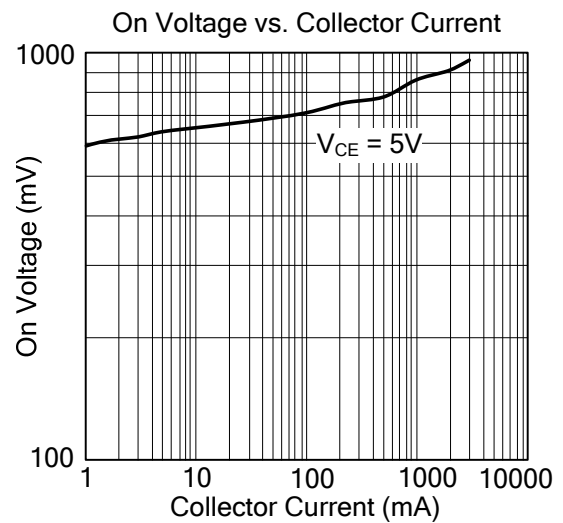
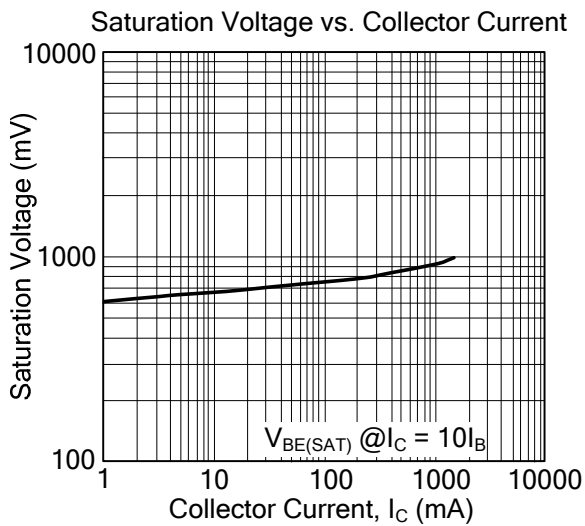
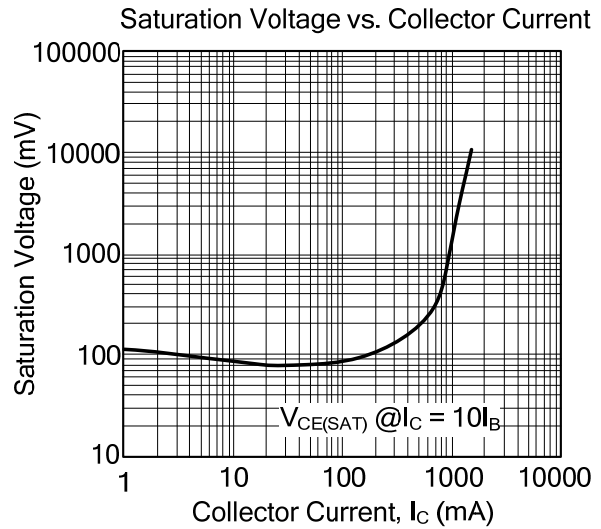
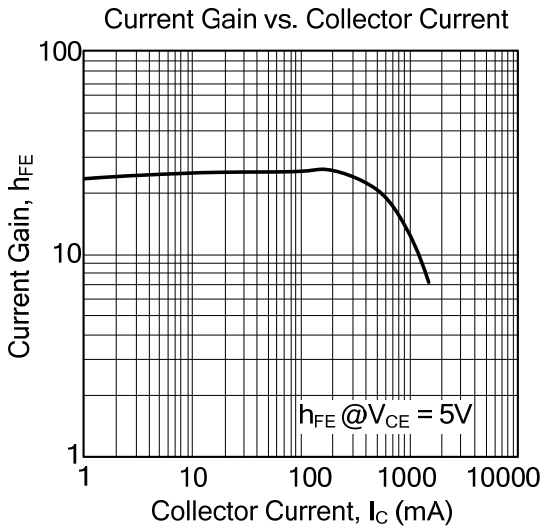
PARAMETER	SYMBOL	TEST CONDITIONS	MIN	TYP	MAX	UNIT
<b>OFF CHARACTERISTICS</b>						
Collector-Base Breakdown Voltage	BV <sub>CBO</sub>	I <sub>C</sub> =1mA	600			V
Collector-Emitter Breakdown Voltage	BV <sub>CEO</sub>	I <sub>C</sub> =10mA	400			V
Emitter-Base Breakdown Voltage	BV <sub>EBO</sub>	I <sub>E</sub> =1mA	8			V
Collector Cutoff Current	I <sub>CBO</sub>	V <sub>CB</sub> =600V			10	μA
Emitter Cutoff Current	I <sub>EBO</sub>	V <sub>EB</sub> =9V, I <sub>C</sub> =0			10	μA
<b>ON CHARACTERISTICS</b>						
DC Current Gain(Note)	h <sub>FE1</sub>	V <sub>CE</sub> = 5V, I <sub>C</sub> =0.3A	10		40	
	h <sub>FE2</sub>	V <sub>CE</sub> = 5V, I <sub>C</sub> =0.5A	10			
	h <sub>FE3</sub>	V <sub>CE</sub> = 5V, I <sub>C</sub> =1A	6			
Collector-Emitter Saturation Voltage (Note)	V <sub>CE(SAT)</sub>	I <sub>C</sub> =0.1A, I <sub>B</sub> =10mA			0.3	V
		I <sub>C</sub> =0.3A, I <sub>B</sub> =30mA			0.8	V
Base-Emitter Saturation Voltage (Note)	V <sub>BE(SAT)</sub>	I <sub>C</sub> =0.1A, I <sub>B</sub> =10mA			0.9	V
		I <sub>C</sub> =0.3A, I <sub>B</sub> =30mA			1.2	V
<b>SWITCHING CHARACTERISTICS</b>						
Gain-Bandwidth Product	f <sub>T</sub>	V <sub>CE</sub> =10V, I <sub>C</sub> =0.3A, f=1MHz	15			MHz

Note: Pulse Test : Pulse Width ≤ 380μs, Duty Cycle ≤ 2%

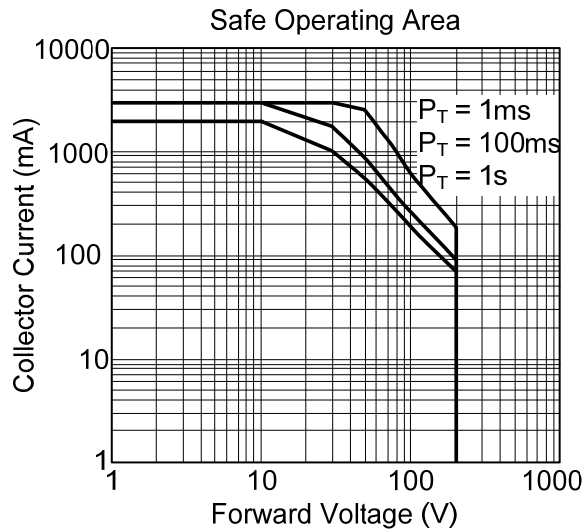
■ CLASSIFICATION OF h<sub>FE1</sub>

RANK	B1	B2	B3	B4	B5	B6
Range	10 ~ 17	13 ~ 22	18 ~ 27	23 ~ 32	28 ~ 37	33 ~ 40

### TYPICAL CHARACTERISTICS



### ■ TYPICAL CHARACTERISTICS(Cont.)



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