



## UP3855

## PNP SILICON TRANSISTOR

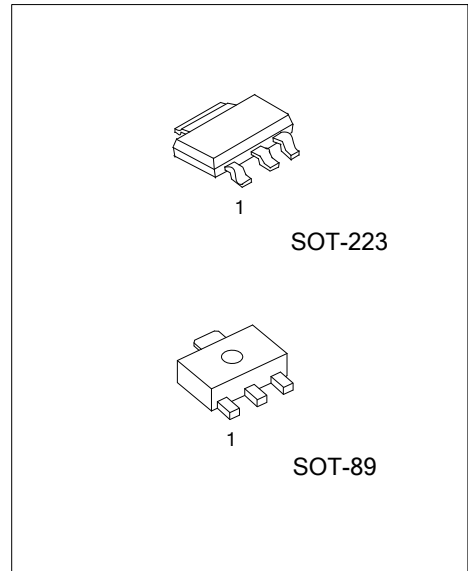
### PNP MEDIUM POWER LOW SATURATION TRANSISTOR

#### DESCRIPTION

The UTC **UP3855** is a transistor with low saturation voltage. It provides customers with very low on-state losses that makes it ideal for applications, such as driving and power management functions and DC-DC circuits.

#### FEATURES

- \* Extremely low saturation voltages
- \* Peak current up to 10A
- \* 4A continuous current



#### ORDERING INFORMATION

Ordering Number	Package	Pin Assignment			Packing
		1	2	3	
UP3855G-AA3-R	SOT-223	B	C	E	Tape Reel
UP3855G-AB3-R	SOT-89	B	C	E	Tape Reel

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

<p>UP3855G-AA3-R</p>	<p>(1) R: Tape Reel</p> <p>(2) AA3: SOT-223, AB3: SOT-89</p> <p>(3) G: Halogen Free and Lead Free</p>
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#### MARKING

SOT-89	SOT-223

■ ABSOLUTE MAXIMUM RATING (T<sub>A</sub>=25°C, unless otherwise specified )

PARAMETER		SYMBOL	RATINGS	UNIT
Collector-Base Voltage		V <sub>CBO</sub>	-180	V
Collector-Emitter Voltage		V <sub>CEO</sub>	-140	V
Emitter-Base Voltage		V <sub>EBO</sub>	-7	V
Continuous Collector Current (Note 1)		I <sub>C</sub>	-4	A
Peak Pulse Current		I <sub>CM</sub>	-10	A
Power Dissipation	SOT-223	P <sub>D</sub>	3.0 (Note 1)	W
			1.6 (Note 2)	
	SOT-89		0.6	
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.

■ THERMAL RESISTANCE

PARAMETER		SYMBOL	RATINGS	UNIT
Junction to Ambient	SOT-223	θ <sub>JA</sub>	42 (Note 1)	°C/W
			78 (Note 2)	
	SOT-89		208	

Notes: 1. For a device surface mounted on 52mm x 52mm x 1.6mm FR4 PCB with high coverage of single sided 2oz copper, in still air conditions.

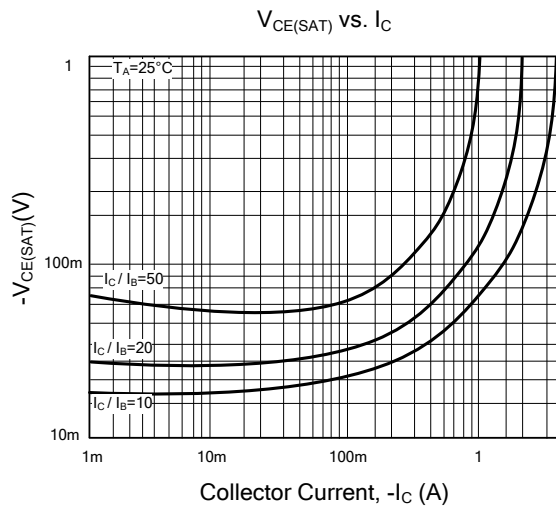
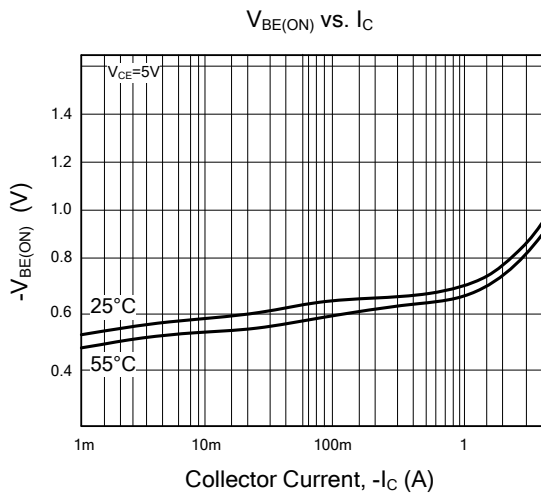
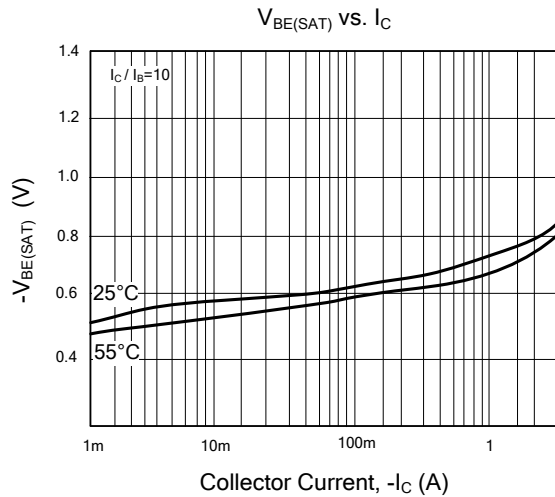
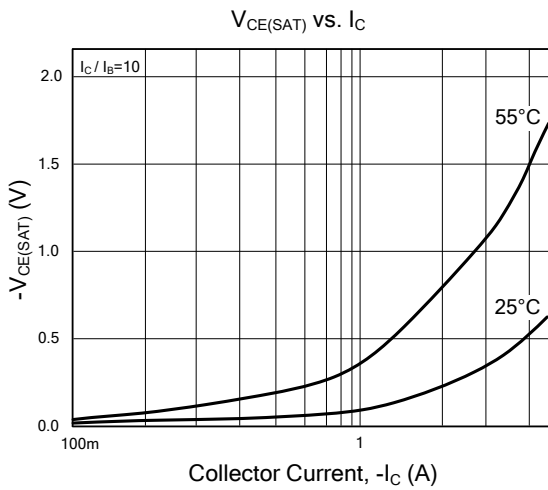
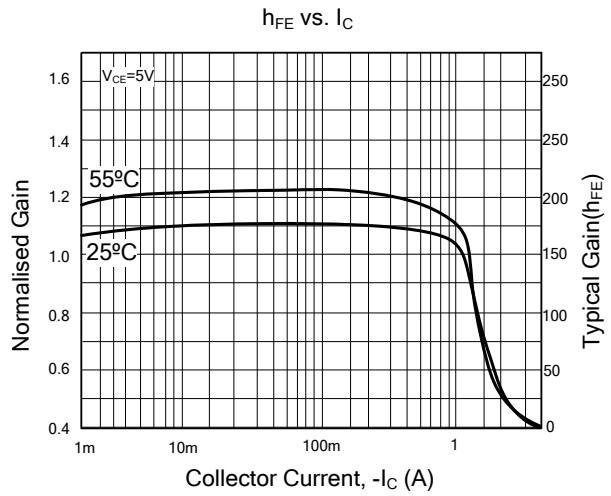
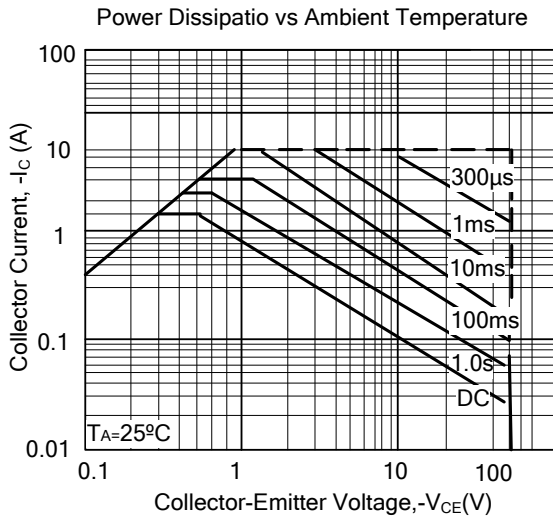
2. For a device surface mounted on 25mm x 25mm x 1.6mm FR4 PCB with high coverage of single sided 1oz copper, in still air conditions.

■ ELECTRICAL CHARACTERISTICS (T<sub>A</sub> = 25°C unless otherwise stated)

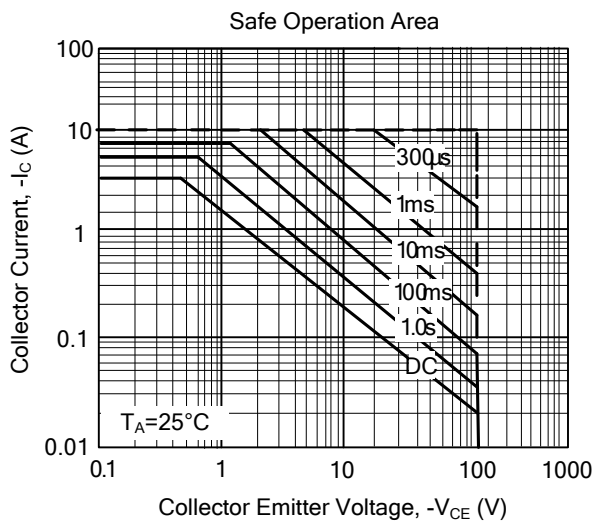
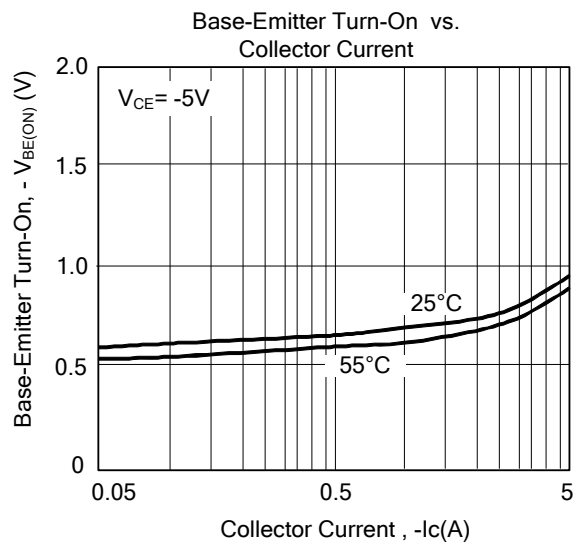
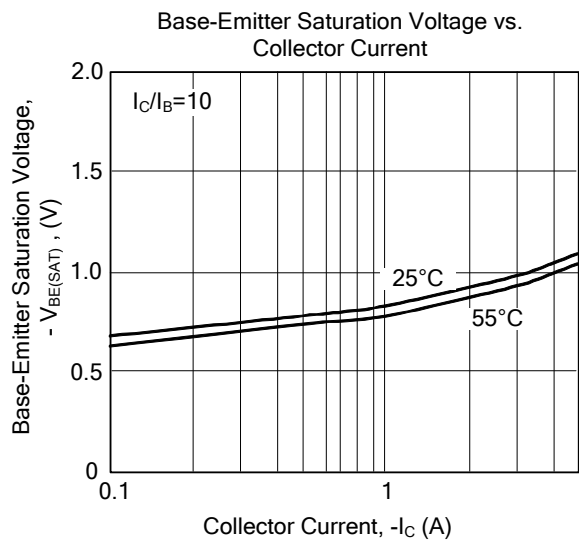
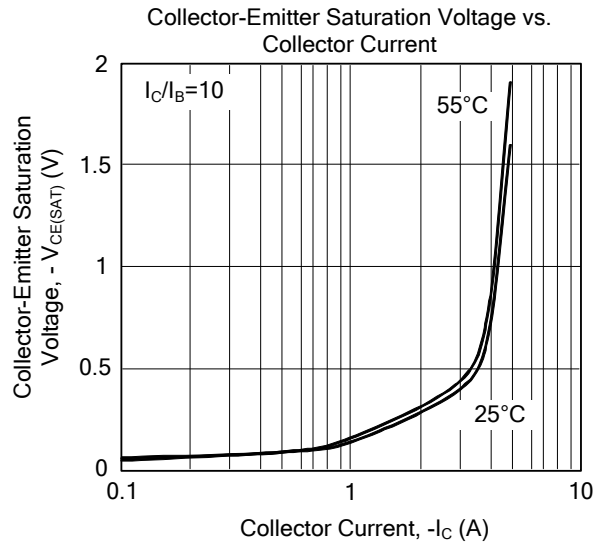
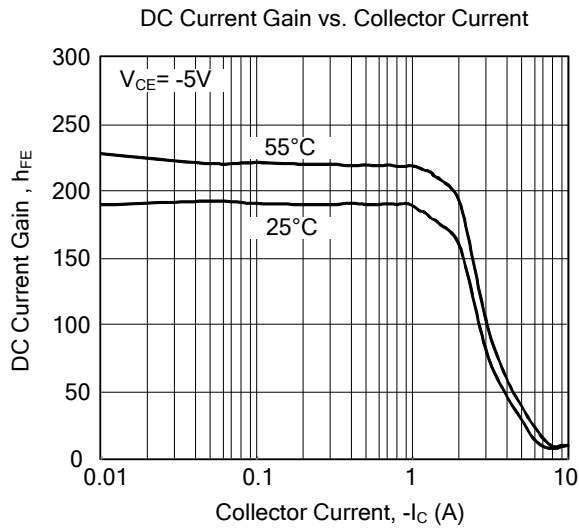
PARAMETER	SYMBOL	TEST CONDITIONS	MIN	TYP	MAX	UNIT
Collector-Base Breakdown Voltage	V <sub>CBO</sub>	I <sub>C</sub> =-100μA	-180	-200		V
Collector-Emitter Breakdown Voltage	V <sub>CER</sub>	I <sub>C</sub> =-1μA, R <sub>B</sub> ≤1kΩ	-180	-200		V
Collector-Emitter Breakdown Voltage	V <sub>CEO</sub>	I <sub>C</sub> =-10mA (Note 1)	-140	-160		V
Emitter-Base Breakdown Voltage	V <sub>EBO</sub>	I <sub>E</sub> =-100μA	-7.0	-8.0		V
Collector Cut-Off Current	I <sub>CBO</sub>	V <sub>CB</sub> =-150V		<1	-20	nA
		V <sub>CB</sub> =-150V, T <sub>A</sub> =100°C			-0.5	μA
Collector Cut-Off Current	I <sub>CER</sub>	V <sub>CB</sub> =-150V, R <sub>1</sub> ≤1kΩ		<1	-20	nA
		T <sub>A</sub> =100°C			-0.5	μA
Emitter Cut-Off Current	I <sub>EBO</sub>	V <sub>EB</sub> =-6V		<1	-10	nA
Collector-Emitter Saturation Voltage (Note 1)	V <sub>CE(SAT)</sub>	I <sub>C</sub> =-0.1A, I <sub>B</sub> =-5mA		-40	-60	mV
		I <sub>C</sub> =-0.5A, I <sub>B</sub> =-50mA		-55	-80	mV
		I <sub>C</sub> =-1A, I <sub>B</sub> =-100mA		-85	-120	mV
		I <sub>C</sub> =-3A, I <sub>B</sub> =-300mA		-275	-360	mV
Base-Emitter Saturation Voltage	V <sub>BE(SAT)</sub>	I <sub>C</sub> =-3A, I <sub>B</sub> =-300mA (Note 1)		-940	-1040	mV
Base-Emitter Turn-On Voltage	V <sub>BE(ON)</sub>	I <sub>C</sub> =-3A, V <sub>CE</sub> =-5V (Note 1)		-830	-930	mV
Static Forward Current Transfer Ratio (Note 1)	h <sub>FE</sub>	I <sub>C</sub> =-10mA, V <sub>CE</sub> =-5V	100	225		
		I <sub>C</sub> =-1A, V <sub>CE</sub> =-5V	100	200	300	
		I <sub>C</sub> =-3A, V <sub>CE</sub> =-5V	45	100		
		I <sub>C</sub> =-10A, V <sub>CE</sub> =-5V		5		
Transition Frequency	f <sub>T</sub>	I <sub>C</sub> =-100mA, V <sub>CE</sub> =-10V f=50MHz		120		MHz
Output Capacitance (Note 1)	C <sub>OBO</sub>	V <sub>CB</sub> =-10V, f=1MHz		33		pF
Switching Times	t <sub>ON</sub>	I <sub>C</sub> =-1A, V <sub>CC</sub> =-50V,		150		ns
	t <sub>OFF</sub>	I <sub>B1</sub> =-I <sub>B2</sub> =-100mA		750		

Note: 1. Measured under pulsed conditions. Pulse width≤300μs; duty cycle≤2%.

■ TYPICAL CHARACTERISTICS



■ TYPICAL CHARACTERISTICS (Cont.)



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