



## UP3855

## PNP SILICON TRANSISTOR

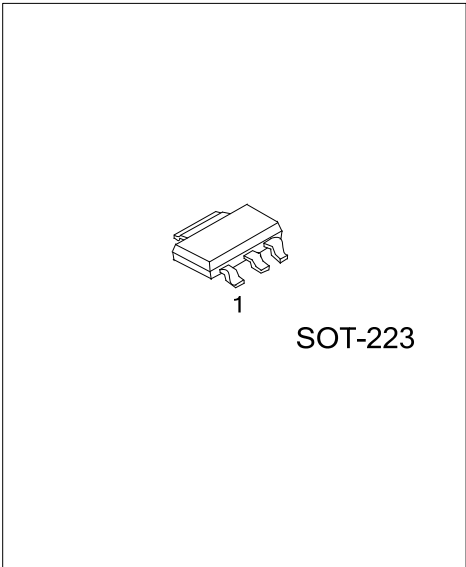
### PNP MEDIUM POWER LOW SATURATION TRANSISTOR

#### 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



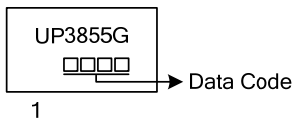
#### ORDERING INFORMATION

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

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

<p>UP3855G-AA3-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) AA3: SOT-223</p> <p>(3) G: Halogen Free and Lead Free</p>
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#### MARKING



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

PARAMETER	SYMBOL	RATINGS	UNIT
Collector-Base Voltage	$V_{CBO}$	-180	V
Collector-Emitter Voltage	$V_{CEO}$	-140	V
Emitter-Base Voltage	$V_{EBO}$	-7	V
Continuous Collector Current (Note 1)	$I_C$	-4	A
Peak Pulse Current	$I_{CM}$	-10	A
Power Dissipation	$P_D$	3.0 (Note 1)	W
		1.6 (Note 2)	
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.

■ THERMAL RESISTANCE

PARAMETER	SYMBOL	RATINGS	UNIT
Junction to Ambient	$\theta_{JA}$	42 (Note 1)	$^{\circ}\text{C/W}$
		78 (Note 2)	

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.

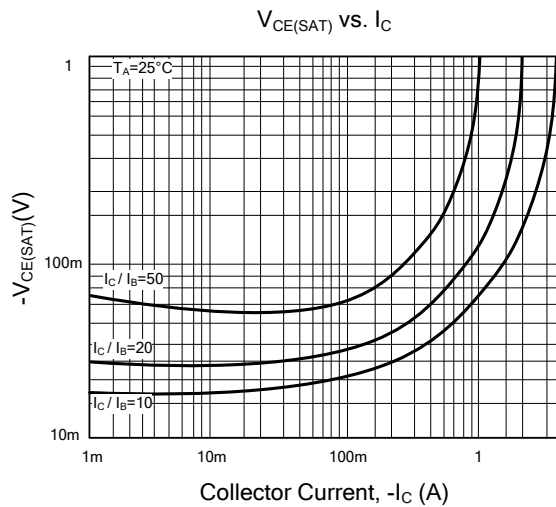
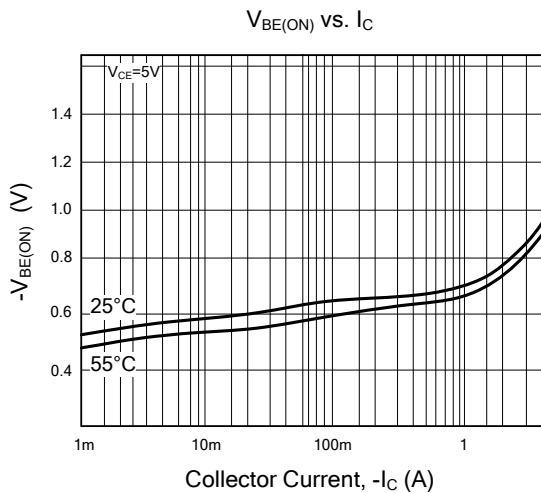
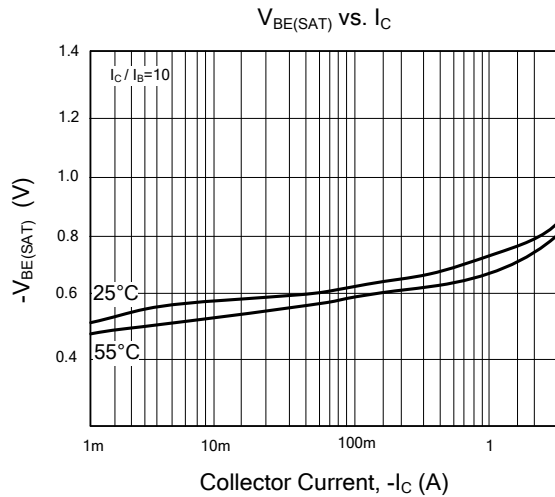
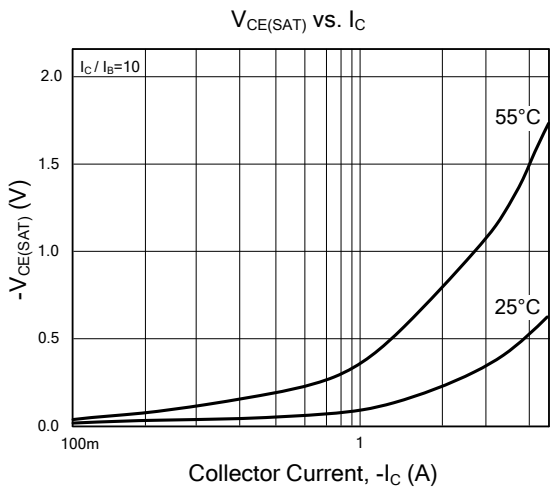
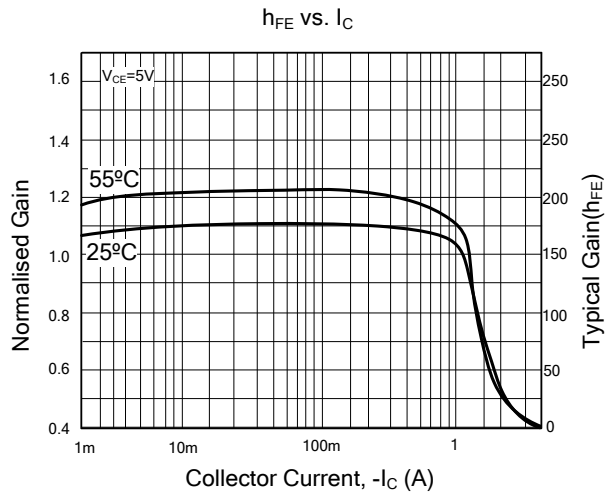
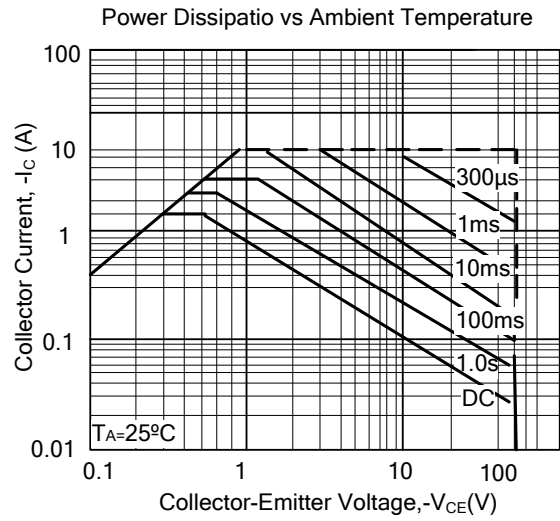
2. For a device surface mounted on 25mm x 25mm x 1.6mm FR4 PCB with high coverage of single sided 1oz copper, in still air conditions.

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

PARAMETER	SYMBOL	TEST CONDITIONS	MIN	TYP	MAX	UNIT
Collector-Base Breakdown Voltage	$V_{CBO}$	$I_C=-100\mu\text{A}$	-180	-200		V
Collector-Emitter Breakdown Voltage	$V_{CER}$	$I_C=-1\mu\text{A}$ , $R_B\leq 1\text{k}\Omega$	-180	-200		V
Collector-Emitter Breakdown Voltage	$V_{CEO}$	$I_C=-10\text{mA}$ (Note 1)	-140	-160		V
Emitter-Base Breakdown Voltage	$V_{EBO}$	$I_E=-100\mu\text{A}$	-7.0	-8.0		V
Collector Cut-Off Current	$I_{CBO}$	$V_{CB}=-150\text{V}$		<1	-20	nA
		$V_{CB}=-150\text{V}$ , $T_A=100^{\circ}\text{C}$			-0.5	$\mu\text{A}$
Collector Cut-Off Current	$I_{CER}$	$V_{CB}=-150\text{V}$ , $R\leq 1\text{k}\Omega$		<1	-20	nA
		$T_A=100^{\circ}\text{C}$			-0.5	$\mu\text{A}$
Emitter Cut-Off Current	$I_{EBO}$	$V_{EB}=-6\text{V}$		<1	-10	nA
Collector-Emitter Saturation Voltage (Note 1)	$V_{CE(SAT)}$	$I_C=-0.1\text{A}$ , $I_B=-5\text{mA}$		-40	-60	mV
		$I_C=-0.5\text{A}$ , $I_B=-50\text{mA}$		-55	-80	mV
		$I_C=-1\text{A}$ , $I_B=-100\text{mA}$		-85	-120	mV
		$I_C=-3\text{A}$ , $I_B=-300\text{mA}$		-275	-360	mV
Base-Emitter Saturation Voltage	$V_{BE(SAT)}$	$I_C=-3\text{A}$ , $I_B=-300\text{mA}$ (Note 1)		-940	-1040	mV
Base-Emitter Turn-On Voltage	$V_{BE(ON)}$	$I_C=-3\text{A}$ , $V_{CE}=-5\text{V}$ (Note 1)		-830	-930	mV
Static Forward Current Transfer Ratio (Note 1)	$h_{FE}$	$I_C=-10\text{mA}$ , $V_{CE}=-5\text{V}$	100	225		
		$I_C=-1\text{A}$ , $V_{CE}=-5\text{V}$	100	200	300	
		$I_C=-3\text{A}$ , $V_{CE}=-5\text{V}$	45	100		
		$I_C=-10\text{A}$ , $V_{CE}=-5\text{V}$		5		
Transition Frequency	$f_T$	$I_C=-100\text{mA}$ , $V_{CE}=-10\text{V}$ $f=50\text{MHz}$		120		MHz
Output Capacitance (Note 1)	$C_{OBO}$	$V_{CB}=-10\text{V}$ , $f=1\text{MHz}$		33		pF
Switching Times	$t_{ON}$	$I_C=-1\text{A}$ , $V_{CC}=-50\text{V}$ ,		150		ns
	$t_{OFF}$	$I_{B1}=-I_{B2}=-100\text{mA}$		750		

Note: 1. Measured under pulsed conditions. Pulse width  $\leq 300\mu\text{s}$ ; duty cycle  $\leq 2\%$ .

■ TYPICAL CHARACTERISTICS



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