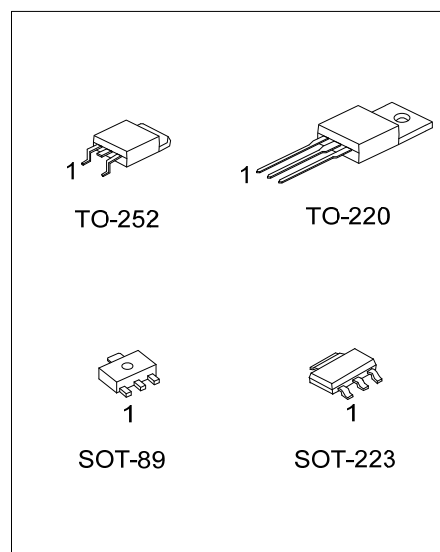


**UP3855****PNP SILICON TRANSISTOR****PNP MEDIUM POWER LOW SATURATION TRANSISTOR****DESCRIPTION**

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

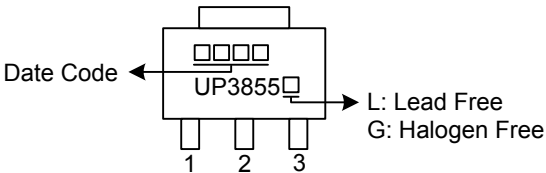
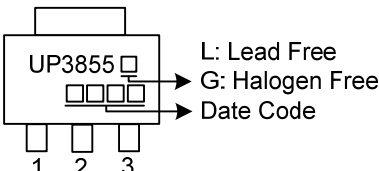
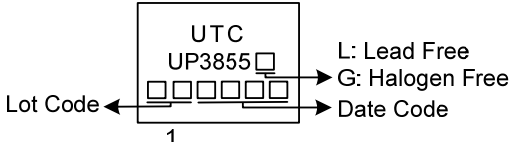
**ORDERING INFORMATION**

Ordering Number		Package	Pin Assignment			Packing
Lead Free	Halogen Free		1	2	3	
UP3855L-AA3-R	UP3855G-AA3-R	SOT-223	B	C	E	Tape Reel
UP3855L-AB3-R	UP3855G-AB3-R	SOT-89	B	C	E	Tape Reel
UP3855L-TA3-T	UP3855G-TA3-T	TO-220	B	C	E	Tube
UP3855L-TN3-R	UP3855G-TN3-R	TO-252	B	C	E	Tape Reel

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

	(1) Packing Type	(1) R: Tape Reel
	(2) Package Type	(2) AA3: SOT-223, AB3: SOT-89, TA3: TO-220 TN3: TO-252
	(3) Green Package	(3) G: Halogen Free and Lead Free, , L: Lead Free

MARKING

PACKAGE	MARKING
SOT-89	 Date Code ← UP3855 → L: Lead Free G: Halogen Free
SOT-223	 UP3855 → L: Lead Free G: Halogen Free Date Code
TO-220 TO-252	 UTC UP3855 → L: Lead Free G: Halogen Free Lot Code ← Date Code

■ **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	SOT-223	P_D	3.0 (Note 1)	W
			1.6 (Note 2)	W
	SOT-89		0.6	W
	TO-220 TO-252		2	W
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 CHARACTERISTICS**

PARAMETER		SYMBOL	RATINGS	UNIT
Junction to Ambient	SOT-223	θ_{JA}	42 (Note 1)	$^{\circ}\text{C/W}$
			78 (Note 2)	$^{\circ}\text{C/W}$
	SOT-89		208	$^{\circ}\text{C/W}$
	TO-220 TO-252		62.5	$^{\circ}\text{C/W}$

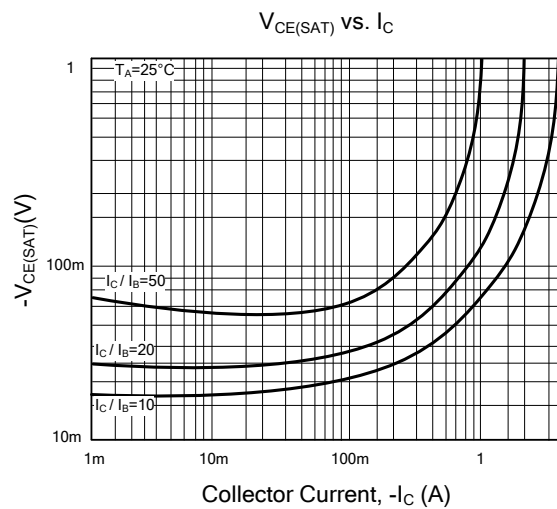
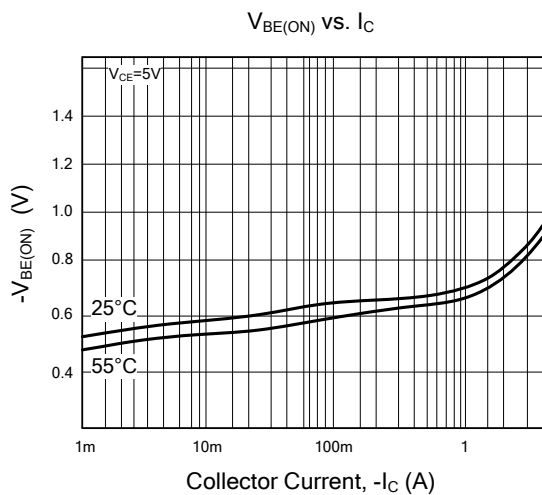
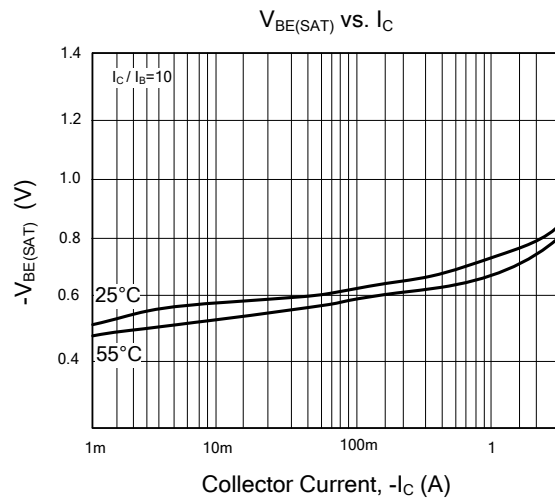
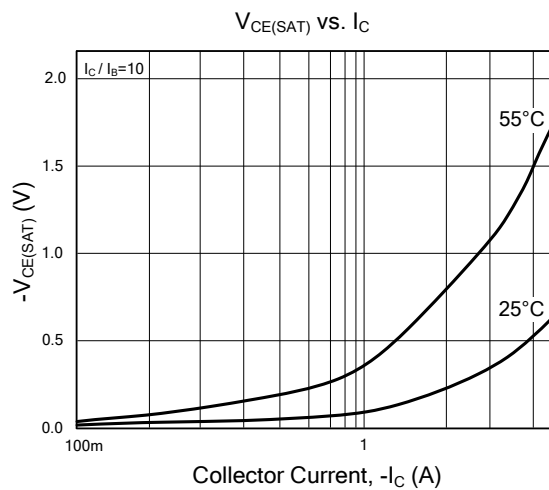
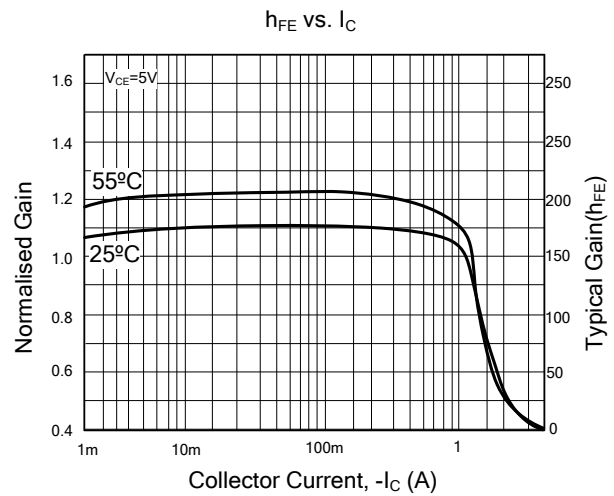
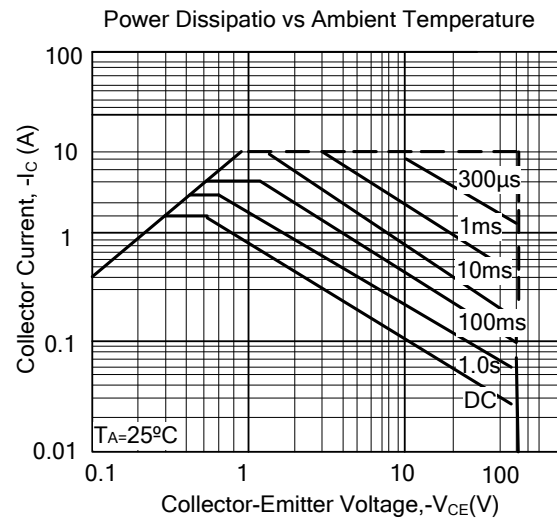
Notes: 1. For a device surface mounted on 52mm x 52mm x 1.6mm FR4 PCB with high coverage of single sided 2oz copper, in still air conditions.
2. For a device surface mounted on 25mm x 25mm x 1.6mm FR4 PCB with high coverage of single sided 1oz copper, in still air conditions.

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

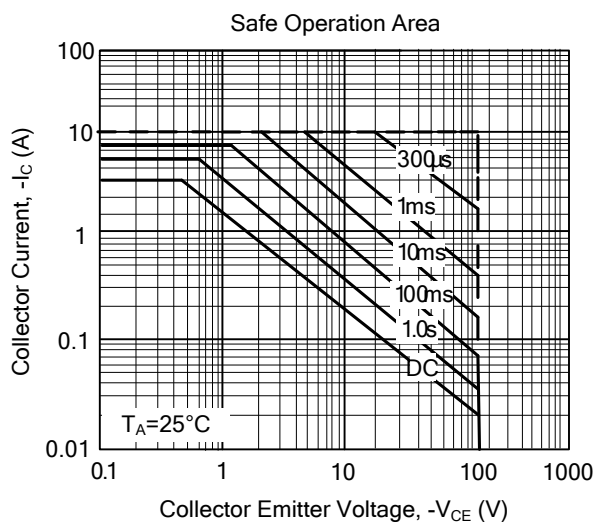
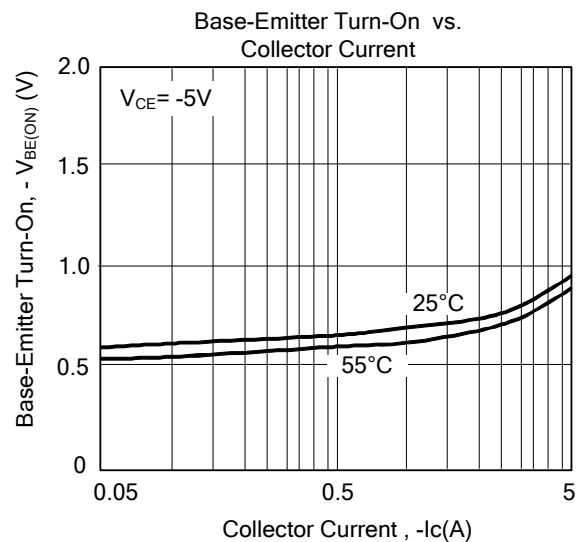
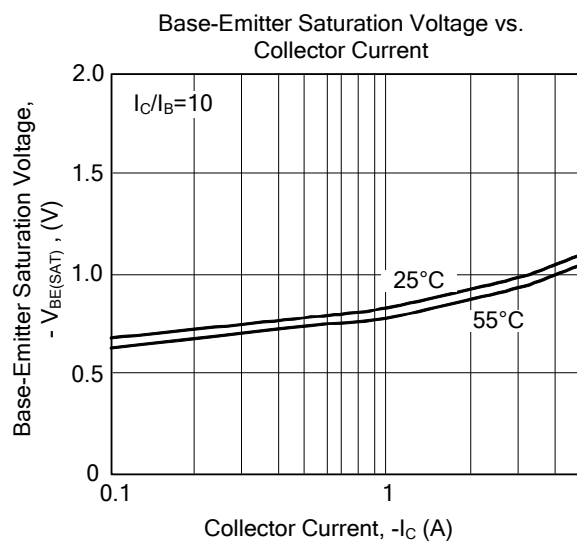
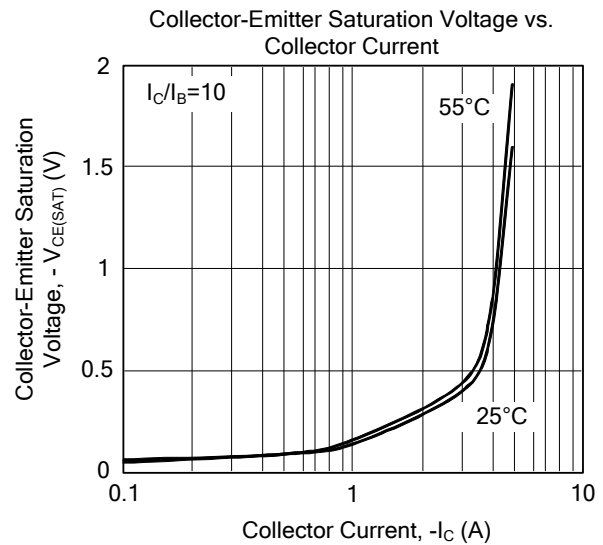
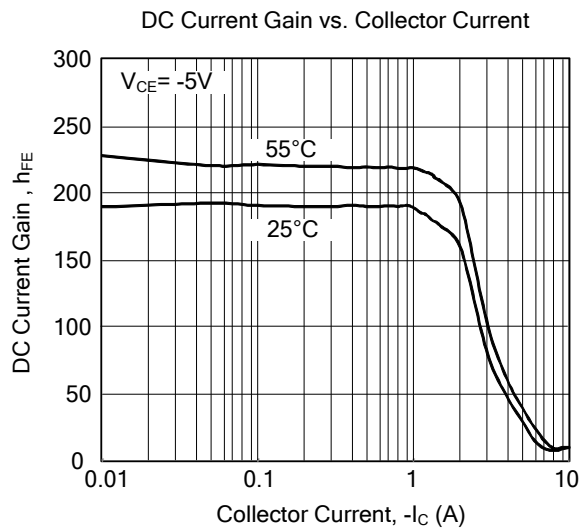
PARAMETER	SYMBOL	TEST CONDITIONS	MIN	TYP	MAX	UNIT
Collector-Base Breakdown Voltage	V_{CBO}	$I_C = -100\mu\text{A}$	-180	-200		V
Collector-Emitter Breakdown Voltage	V_{CER}	$I_C = -1\mu\text{A}$, $R_B \leq 1\text{k}\Omega$	-180	-200		V
Collector-Emitter Breakdown Voltage	V_{CEO}	$I_C = -10\text{mA}$ (Note 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	μA
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	μA
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)	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		ns

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

■ TYPICAL CHARACTERISTICS



■ TYPICAL CHARACTERISTICS (Cont.)



UTC assumes no responsibility for equipment failures that result from using products at values that exceed, even momentarily, rated values (such as maximum ratings, operating condition ranges, or other parameters) listed in products specifications of any and all UTC products described or contained herein. UTC products are not designed for use in life support appliances, devices or systems where malfunction of these products can be reasonably expected to result in personal injury. Reproduction in whole or in part is prohibited without the prior written consent of the copyright owner. UTC reserves the right to make changes to information published in this document, including without limitation specifications and product descriptions, at any time and without notice. This document supersedes and replaces all information supplied prior to the publication hereof.