



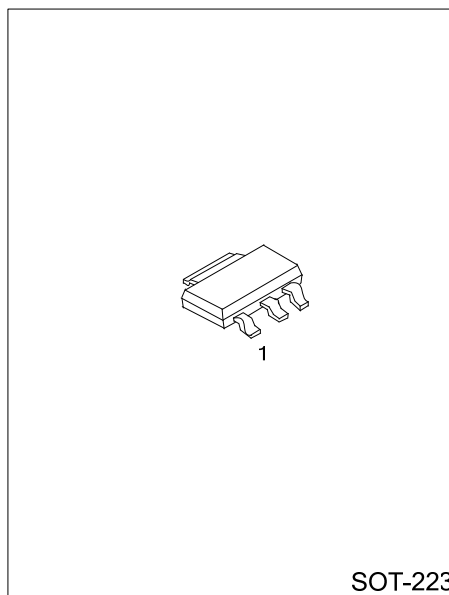
## UP1855

PNP SILICON TRANSISTOR

### HIGH CURRENT TRANSISTOR

#### FEATURES

- \* High current switching
- \* Low  $V_{CE(SAT)}$
- \* High  $h_{FE}$



#### ORDERING INFORMATION

Ordering Number		Package	Pin Assignment			Packing
Lead Free	Halogen Free		1	2	3	
UP1855L-x-AA3-R	UP1855G-x-AA3-R	SOT-223	B	C	E	Tape Reel

<p>UP1855L-x-AA3-R</p> <p>(1) Packing Type (2) Package Type (3) Rank (4) Lead Plating</p>	<p>(1) R: Tape Reel (2) AA3: SOT-223 (3) x: refer to Classification of <math>h_{FE2}</math> (4) G: Halogen Free, L: Lead Free</p>
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■ ABSOLUTE MAXIMUM RATINGS ( $T_a = 25^\circ\text{C}$ )

PARAMETER	SYMBOL	RATINGS	UNIT
Collector-Base Voltage	$V_{CBO}$	-180	V
Collector-Emitter Voltage	$V_{CEO}$	-140	V
Emitter-Base Voltage	$V_{EBO}$	-6	V
Peak Pulse Current	$I_{CM}$	-10	A
Continuous Collector Current	$I_C$	-4	A
Power Dissipation ( $T_a = 25^\circ\text{C}$ ) (Note 2)	$P_D$	3	W
Junction Temperature	$T_J$	+150	$^\circ\text{C}$
Storage Temperature	$T_{STG}$	-40 ~ +150	$^\circ\text{C}$

Note: 1. 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.

2. The power which can be dissipated assuming the device is mounted in a typical manner on a P.C.B. with copper equal to 4 square inch minimum

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

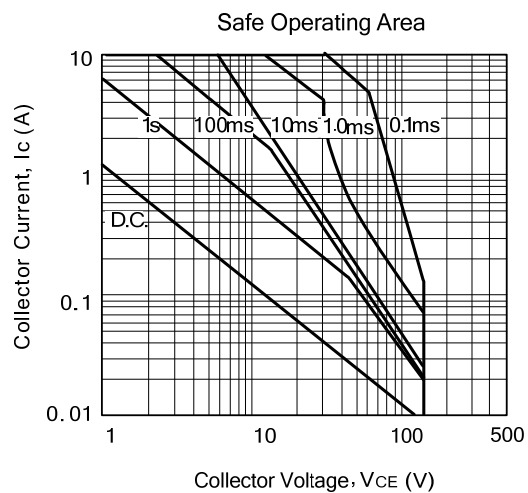
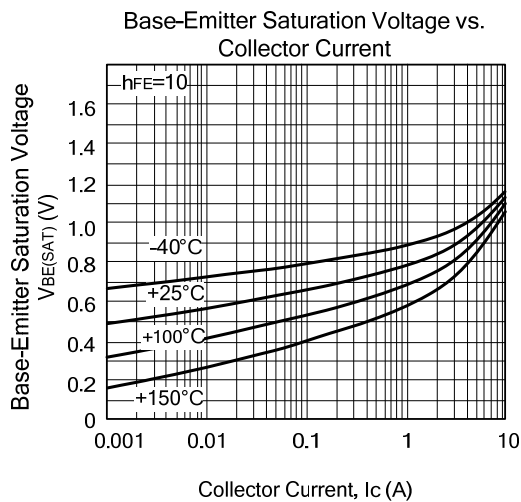
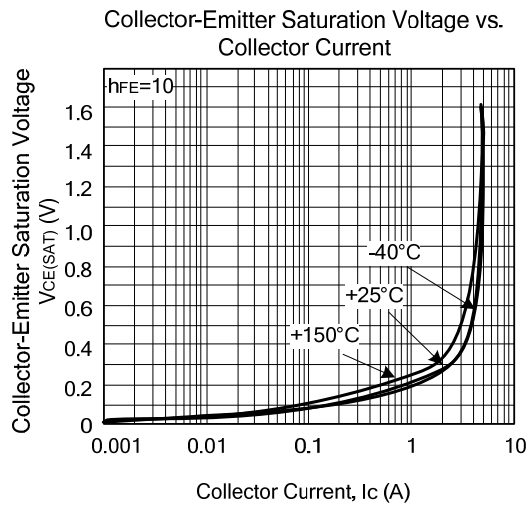
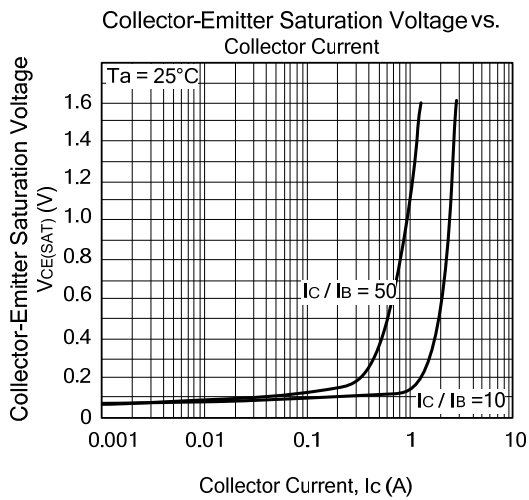
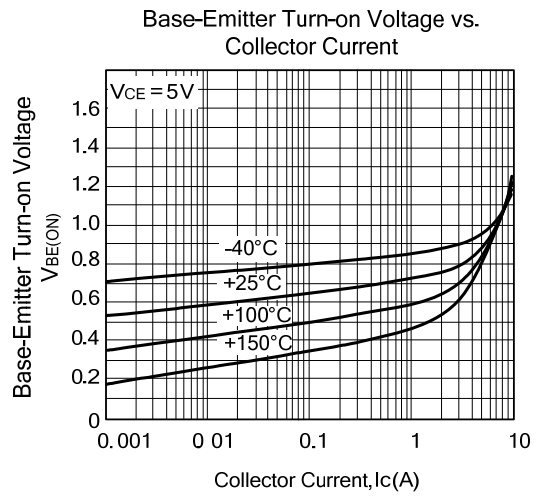
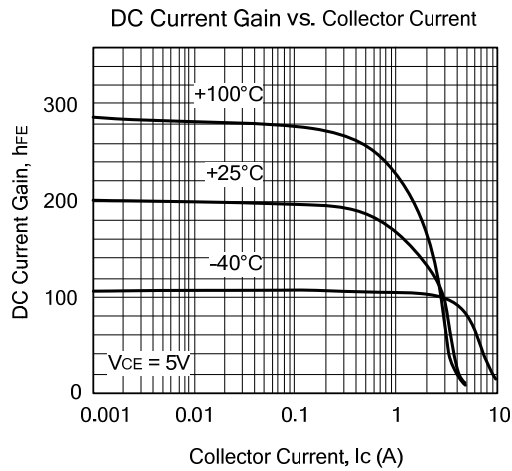
PARAMETER	SYMBOL	TEST CONDITIONS	MIN	TYP	MAX	UNIT
Collector-Base Breakdown Voltage	$BV_{CBO}$	$I_C = -100\mu\text{A}$	-180	-210		V
Collector-Emitter Breakdown Voltage	$BV_{CEO}$	$I_C = -10\text{mA}$	-140	-170		V
Emitter-Base Breakdown Voltage	$BV_{EBO}$	$I_E = -100\mu\text{A}$ (Note)	-6	-8		V
Collector Cut-off Current	$I_{CBO}$	$V_{CB} = -150\text{V}$			-50	nA
		$V_{CB} = -150\text{V}$ , $T_a = 100^\circ\text{C}$			-1	$\mu\text{A}$
Emitter Cut-off Current	$I_{EBO}$	$V_{EB} = -6\text{V}$			-10	nA
Collector-Emitter Saturation Voltage	$V_{CE(SAT)}$	$I_C = -100\text{mA}$ , $I_B = -5\text{mA}$ (Note)		-30	-60	mV
		$I_C = -500\text{mA}$ , $I_B = -50\text{mA}$ (Note)		-70	-120	mV
		$I_C = -1\text{A}$ , $I_B = -100\text{mA}$ (Note)		-110	-150	mV
		$I_C = -3\text{A}$ , $I_B = -300\text{mA}$ (Note)		-275	-550	mV
Base-Emitter Saturation Voltage	$V_{BE(SAT)}$	$I_C = -3\text{A}$ , $I_B = -300\text{mA}$ (Note)		-970	-1110	mV
Base-Emitter Turn-On Voltage	$V_{BE(ON)}$	$V_{CE} = -5\text{V}$ , $I_C = -3\text{A}$ (Note)		-830	-950	mV
DC Current Gain	$h_{FE1}$	$V_{CE} = -5\text{V}$ , $I_C = -10\text{mA}$ (Note)	100	200		
		$V_{CE} = -5\text{V}$ , $I_C = -1\text{A}$ (Note)	100		300	
		$V_{CE} = -5\text{V}$ , $I_C = -3\text{A}$ (Note)	28	140		
		$V_{CE} = -5\text{V}$ , $I_C = -10\text{A}$ (Note)		10		
Transition Frequency	$f_T$	$V_{CE} = -10\text{V}$ , $I_C = -100\text{mA}$ , $f = 50\text{MHz}$		110		MHz
Output Capacitance	$C_{ob}$	$V_{CB} = -20\text{V}$ , $f = 1\text{MHz}$		40		pF
Switching Times	$t_{ON}$	$V_{CC} = -50\text{V}$ , $I_C = -1\text{A}$		68		ns
	$t_{OFF}$	$I_{B1} = -100\text{mA}$ , $I_{B2} = 100\text{mA}$		1030		ns

Note: Pulse test:  $t_P \leq 300\mu\text{s}$ , Duty cycle  $\leq 2\%$

■ CLASSIFICATION OF  $h_{FE3}$

RANK	A	B
RANGE	28~75	75(MIN.)

## TYPICAL CHARACTERISTICS



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