



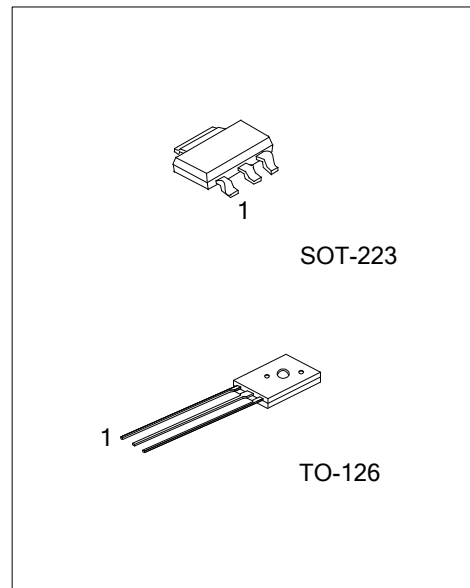
# UP1855A

## 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	
-	UP1855AG-x-AA3-R	SOT-223	B	C	E	Tape Reel
UP1855AL-x-T60-K	UP1855AG-x-T60-K	TO-126	E	C	B	Bulk

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

<p>UP1855AG-x-AA3-R</p> <p>(1) Packing Type (2) Package Type (3) Rank (4) Green Package</p>	<p>(1) R: Tape Reel, B: Bulk (2) AA3: SOT-223, T60: TO-126 (3) x: refer to Classification of <math>h_{FE3}</math> (4) G: Halogen Free and Lead Free, L: Lead Free</p>
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■ MARKING

SOT-223	TO-126
<p>UP1855AG □□□□ → Data Code</p>	<p>UTC □□□□ UP1855A □□□□ → Data Code L: Lead Free G: Halogen Free</p>

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

PARAMETER		SYMBOL	RATINGS	UNIT
Collector -Base Voltage		$V_{CB0}$	-180	V
Collector -Emitter Voltage		$V_{CE0}$	-170	V
Emitter -Base Voltage		$V_{EBO}$	-6	V
Collector Current (Pulse)		$I_{CM}$	-10	A
Collector Current (DC)		$I_C$	-4	A
Power Dissipation	SOT-223	$P_D$	1	W
	TO-126		1	
Junction Temperature		$T_J$	+150	$^\circ\text{C}$
Storage Temperature		$T_{STG}$	-40 ~ +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.

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

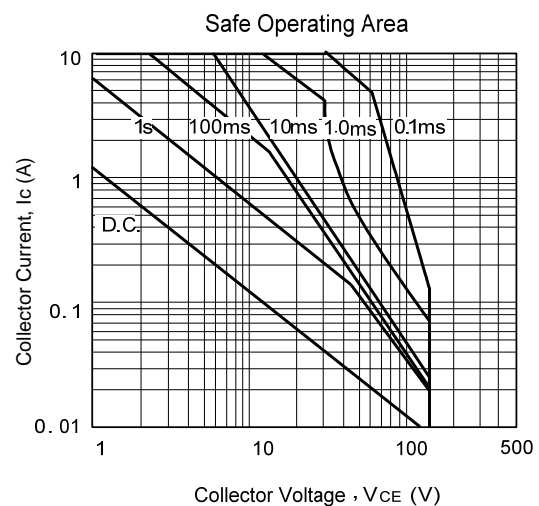
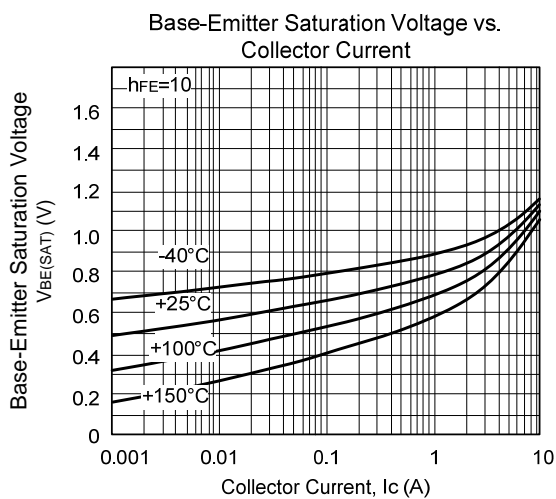
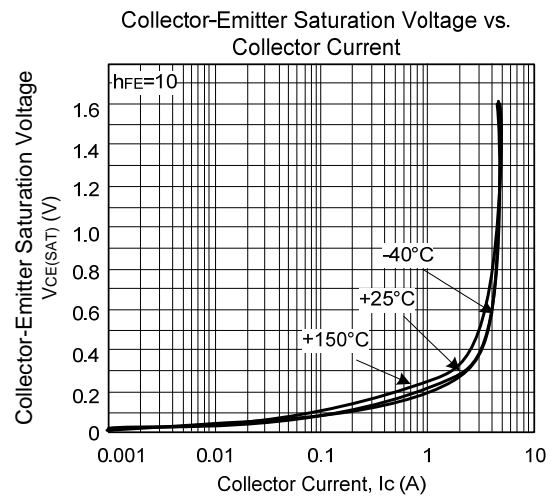
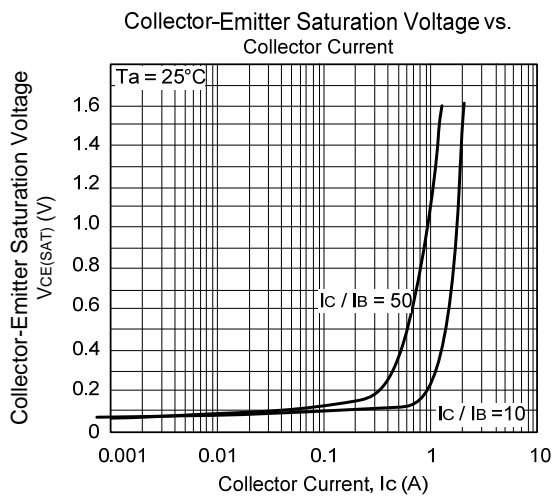
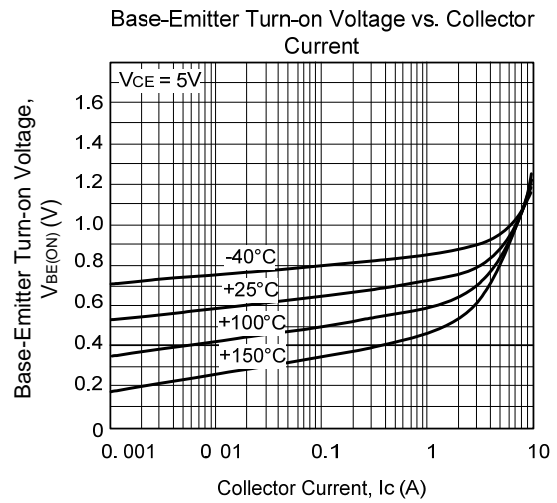
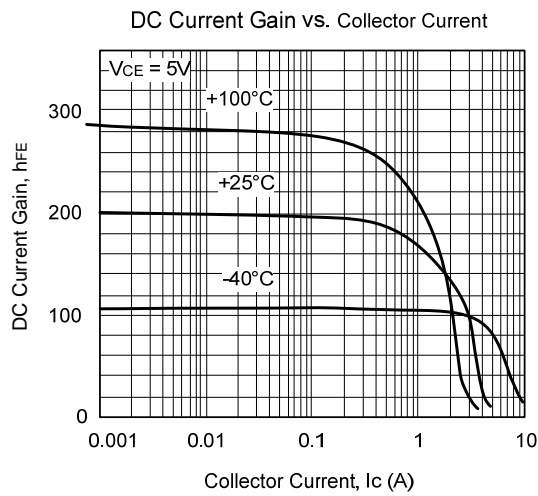
PARAMETER	SYMBOL	TEST CONDITIONS	MIN	TYP	MAX	UNIT
Collector-Base Breakdown Voltage	$BV_{CB0}$	$I_C = -100\mu\text{A}$	-180	-210		V
Collector-Emitter Breakdown Voltage	$BV_{CE0}$	$I_C = -10\text{mA}$	-170			V
Emitter-Base Breakdown Voltage	$BV_{EBO}$	$I_E = -100\mu\text{A}$	-6	-8		V
Collector Cut-off 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	$V_{CE(SAT)}$	$I_C=-100\text{mA}, I_B=-5\text{mA}$		-30	-60	mV
		$I_C=-500\text{mA}, I_B=-50\text{mA}$		-70	-120	mV
		$I_C=-1\text{A}, I_B=-100\text{mA}$		-110	-150	mV
		$I_C=-3\text{A}, I_B=-300\text{mA}$		-275	-550	mV
Base-Emitter Saturation Voltage	$V_{BE(SAT)}$	$I_C=-3\text{A}, I_B=-300\text{mA}$		-970	-1110	mV
Base-Emitter Turn-On Voltage	$V_{BE(ON)}$	$I_C=-3\text{A}, V_{CE}=-5\text{V}$		-830	-950	mV
DC Current Gain	$h_{FE1}$	$I_C=-10\text{mA}, V_{CE}=-5\text{V}$	100	200		
		$I_C=-1\text{A}, V_{CE}=-5\text{V}$	100		300	
		$I_C=-3\text{A}, V_{CE}=-5\text{V}$	28	140		
		$I_C=-10\text{A}, V_{CE}=-5\text{V}$		10		
Transition Frequency	$f_T$	$I_C=-100\text{mA}, V_{CE}=-10\text{V}, f=50\text{MHz}$		110		MHz
Output Capacitance	$C_{ob}$	$V_{CB}=-20\text{V}, f=1\text{MHz}$		40		pF
Switching Times	$t_{ON}$	$I_C=-1\text{A}, V_{CC}=-50\text{V}$		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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