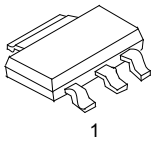
UP1851

PNP SILICON TRANSISTOR

HIGH CURRENT (HIGH PERFORMANCE) TRANSISTORS



SOT-223

■ FEATURES

* 5 A continuous current , up to 15 A peak current
* Very low saturation voltages
* Excellent gain characteristics specified up to 10A
* P_D = 3W

■ ORDERING INFORMATION

Ordering Number		Package	Pin Assignment			Packing
Lead Free	Halogen Free		1	2	3	
UP1851L-AA3-R	UP1851G-AA3-R	SOT-223	B	C	E	Tape Reel

UP1851L-AA3-R (1)Packing Type (2)Package Type (3)Lead Free	(1) R: Tape Reel (2) AA3: SOT-223 (3) G: Halogen Free, L: Lead Free

■ ABSOLUTE MAXIMUM RATINGS

PARAMETER	SYMBOL	RATINGS	UNIT
Collector-Base Voltage	V_{CBO}	-100	V
Collector-Emitter Voltage	V_{CEO}	-60	V
Emitter-Base Voltage	V_{EBO}	-6	V
Peak Pulse Current	I_{CM}	-15	A
Continuous Collector Current	I_C	-5	A
Power Dissipation (T_A=25°C)	P_D	3	W
Junction Temperature	T_J	+150	℃
Storage Temperature	T_{STG}	-55 ~ +150	℃

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.

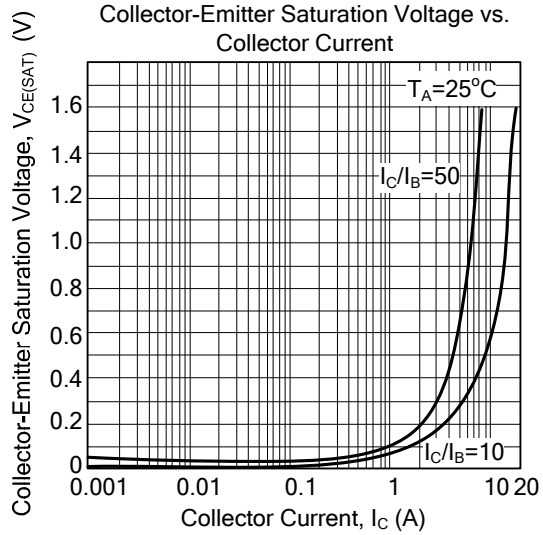
■ ELECTRICAL CHARACTERISTICS (T_A = 25°C, unless otherwise specified)

PARAMETER	SYMBOL	TEST CONDITIONS	MIN	TYP	MAX	UNIT
Collector-Base Breakdown Voltage	BV_{CBO}	I_C=-100μ A	-100	-140		V
Collector-Emitter Breakdown Voltage	BV_{CER}	I_C=-1μA, $R_B \leqq$1KΩ	-100	-140		V
Collector-Emitter Breakdown Voltage	BV_{CEO}	I_C=-10mA (Note)	-60	-90		V
Emitter-Base Breakdown Voltage	BV_{EBO}	I_E=-100μA	-6	-8		V
Collector Cut-Off Current	I_{CBO}	V_{CB}=-80V			-150	nA
Collector Cut-Off Current	I_{CER}	V_{CB}=-80V, R≤1kΩ			-150	nA
Emitter Cut-Off Current	I_{EBO}	V_{EB}=-6V			-50	nA
Collector-Emitter Saturation Voltage (Note)	$V_{CE(SAT)}$	I_C=-100mA, I_B=-10mA		-20	-50	mV
		I_C=-1A, I_B=-100mA		-85	-140	
		I_C=-2A, I_B=-200mA		-155	-210	
		I_C=-5A, I_B=-500mA		-370	-460	
Base-Emitter Saturation Voltage	$V_{BE(SAT)}$	I_C=-5A, I_B=-500mA (Note)		-1080	-1240	mV
Base-Emitter Turn-On Voltage	$V_{BE(ON)}$	I_C=-5A, V_{CE}=-1V (Note)		-935	-1070	mV
DC Current Gain (Note)	h_{FE}	I_C=-10mA, V_{CE}=-1V	100	200		
		I_C=-2A, V_{CE}=-1V	100	200	300	
		I_C=-5A, V_{CE}=-1V	75	90		
		I_C=-10A, V_{CE}=-1V	10	25		
Transition Frequency	f_T	I_C=-100mA, V_{CE}=-10V, f=50MHz		120		MHz
Output Capacitance	C_{OBO}	V_{CB}=-10V, f=1MHz		74		pF
Switching Times	t_{ON}	I_C=-2A, I_{B1}=-200mA		82		ns
	t_{OFF}	I_{B2}=200mA, V_{CC}=-10V		350		

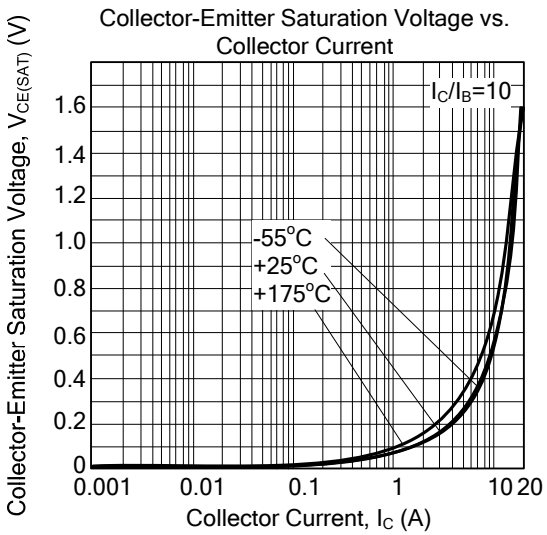
Note: Pulse width=300μs. Duty cycle≤2%

■ TYPICAL CHARACTERISTICS

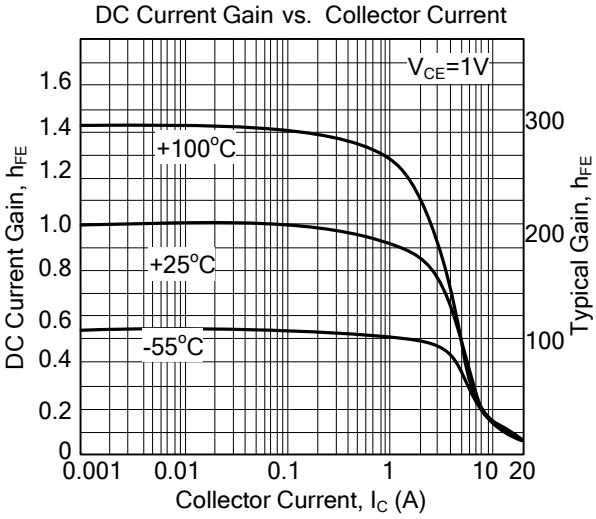
Collector-Emitter Saturation Voltage vs. Collector Current



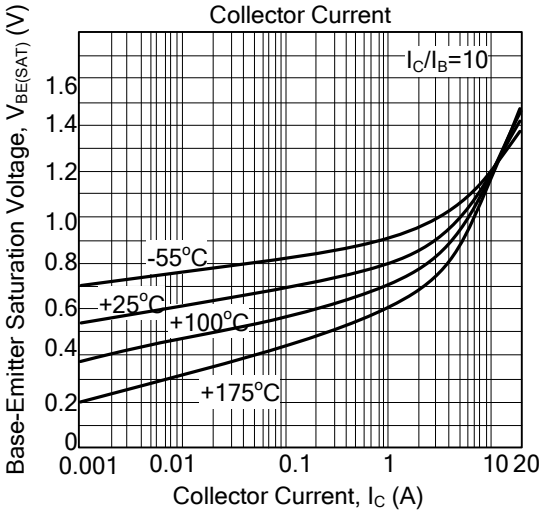
Collector-Emitter Saturation Voltage vs. Collector Current



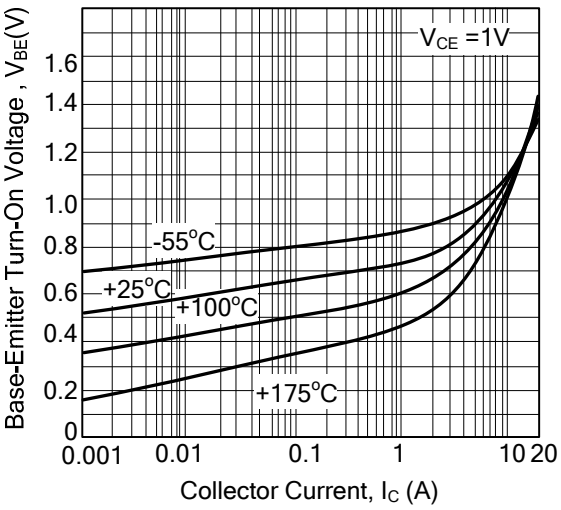
DC Current Gain vs. Collector Current



Base-Emitter Saturation Voltage vs. Collector Current



Base-Emitter Turn-On Voltage vs. Collector Current



Safe Operating Area
Single Pulse Test at T_A=25°C