



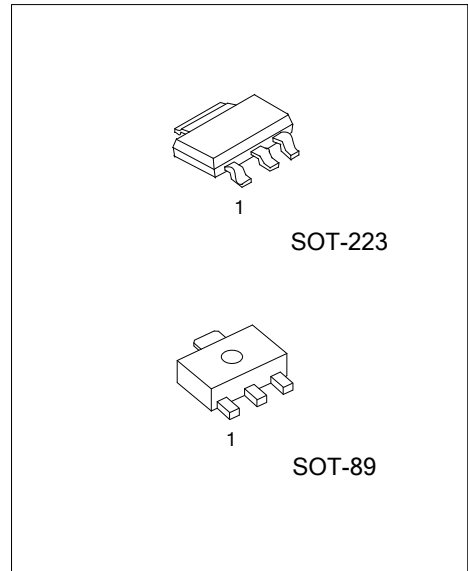
UP1868

PNP SILICON TRANSISTOR

LOW SATURATION VOLTAGE PNP POWER TRANSISTOR

FEATURES

- * Low saturation voltage with equivalent on-resistance be $R_{CE(SAT)}$ about 40m Ω at 5A)
- * High gain that can be replace parts for power MOSFET.



ORDERING INFORMATION

Order Number	Package	Pin Assignment			Packing
		1	2	3	
UP1868G-AA3-R	SOT-223	B	C	E	Tape Reel
UP1868G-AB3-R	SOT-89	B	C	E	Tape Reel

<p>UP1868G-AA3-R</p> <p>(1)Packing Type (2)Package Type (3)Green Package</p>	<p>(1) R: Tape Reel (2) AA3: SOT-223, AB3: SOT-89 (3) G: Halogen Free and Lead Free</p>
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MARKING

SOT-89	SOT-223

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

PARAMETER	SYMBOL	RATINGS	UNIT
Collector-Base Voltage	V_{CBO}	-15	V
Collector-Emitter Voltage	V_{CEO}	-12	V
Emitter-Base Voltage	V_{EBO}	-6	V
Peak Pulse Current	$I_{C(PEAK)}$	-20	A
Continuous Collector Current	I_C	-6	A
Power Dissipation	SOT-223	3	W
	SOT-89	0.75	W
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.

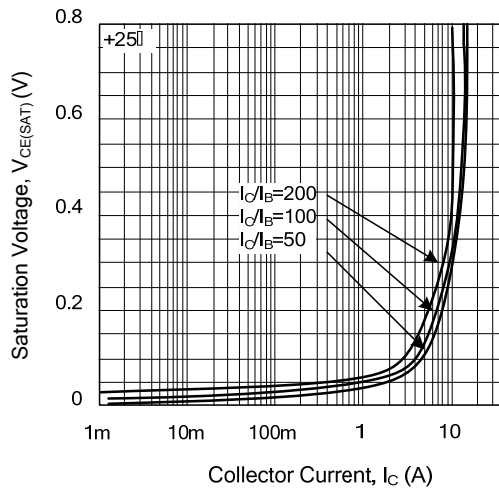
■ ELECTRICAL CHARACTERISTICS ($T_A=25^\circ\text{C}$, unless otherwise specified)

PARAMETER	SYMBOL	TEST CONDITIONS	MIN	TYP	MAX	UNIT
Breakdown Voltage (Note)	BV_{CBO}	$I_C=-100\mu\text{A}$	-15			V
	BV_{CEO}	$I_C=-10\text{mA}$	-12			V
	BV_{EBO}	$I_E=-100\mu\text{A}$	-6			V
Collector-Emitter Saturation Voltage (Note)	$V_{CE(SAT)}$	$I_C=-500\text{mA}, I_B=-5\text{mA}$		-55	-100	mV
		$I_C=-2\text{A}, I_B=-50\text{mA}$		-132	-160	mV
		$I_C=-6\text{A}, I_B=-250\text{mA}$			-440	mV
Base-Emitter Saturation Voltage	$V_{BE(SAT)}$	$I_C=-6\text{A}, I_B=-250\text{mA}$		-1050	-1200	mV
Base-Emitter Turn-On Voltage (Note)	$V_{BE(ON)}$	$V_{CE}=-1\text{V}, I_C=-6\text{A}$		-950	-1050	mV
Collector Cut-Off Current	I_{CBO}	$V_{CB}=-12\text{V}$			-10	nA
		$V_{CB}=-12\text{V}, T_A=100^\circ\text{C}$			-1.0	μA
Emitter Cut-Off Current	I_{EBO}	$V_{EB}=-6\text{V}$			-10	nA
DC Current Gain (Note)	h_{FE1}	$V_{CE}=-1\text{V}, I_C=-10\text{mA}$	300			
	h_{FE2}	$V_{CE}=-1\text{V}, I_C=-500\text{mA}$	300		1000	
	h_{FE3}	$V_{CE}=-1\text{V}, I_C=-5\text{mA}$	200			
	h_{FE4}	$V_{CE}=-1\text{V}, I_C=-10\text{A}$	150			
Current Gain Bandwidth Product	f_T	$V_{CE}=-10\text{V}, I_C=-100\text{mA}, f=50\text{MHz}$		80		MHz
Output Capacitance	C_{ob}	$V_{CB}=-20\text{V}, f=1\text{MHz}$		161		pF
Switching Times	t_{ON}	$I_C=-4\text{A}, I_{B1}=-400\text{mA}$		120		ns
	t_{OFF}	$I_{B2}=400\text{mA}, V_{CC}=-10\text{V}$		116		ns

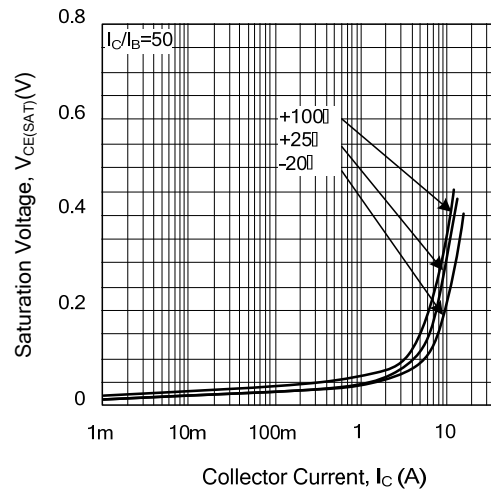
Note: Pulse test: Pulse Width=300 μs , Duty Cycle $\leq 2\%$

TYPICAL CHARACTERISTICS

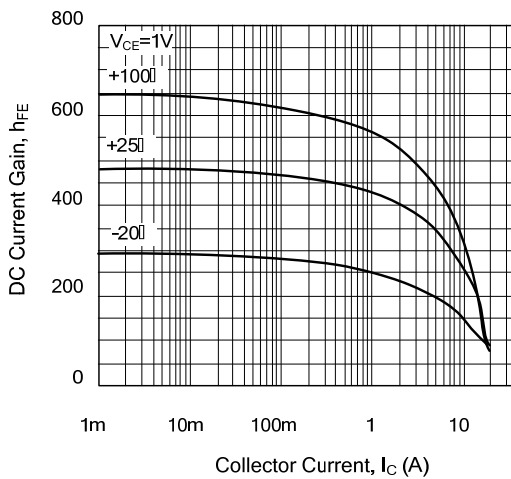
Saturation Voltage vs. Collector Current



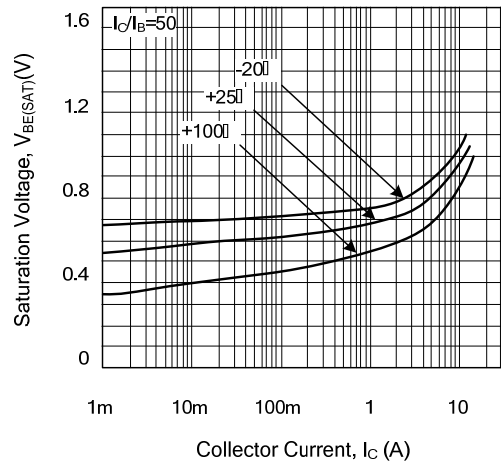
Saturation Voltage vs. Collector Current



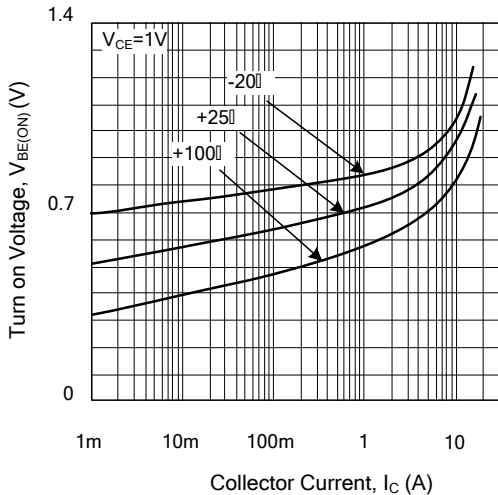
DC Current Gain vs. Collector Current



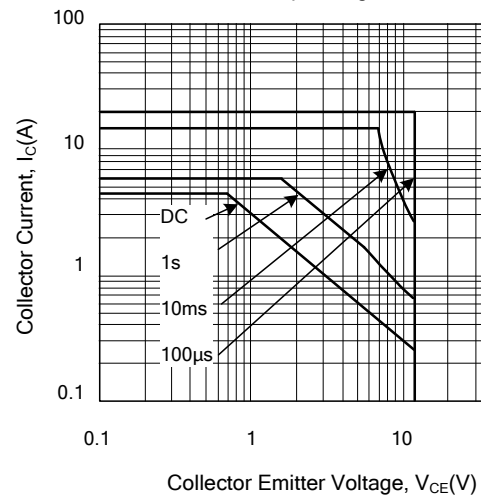
Saturation Voltage vs. Collector Current



Turn on Voltage vs. Collector Current



Safe Operating Area



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