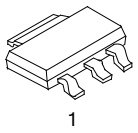
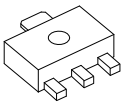
UP1868

PNP SILICON TRANSISTOR

LOW SATURATION VOLTAGE PNP POWER TRANSISTOR



SOT-223



SOT-89

■ FEATURES

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

■ ORDERING INFORMATION

Order Number		Package	Pin Assignment			Packing
Lead Free	Halogen Free		1	2	3	
UP1868-AA3-R	UP1868L-AA3-F-R	SOT-223	B	C	E	Tape Reel
UP1868-AB3-R	UP1868L-AB3-F-R	SOT-89	B	C	E	Tape Reel

UP1868L-AA3-R (1)Packing Type (2)Package Type (3)Lead Free	(1) R: Tape Reel (2) AA3: SOT-223, AB3: SOT-89 (3) L: Lead Free, G: Halogen Free

■ ABSOLUTE MAXIMUM RATINGS (T_A=25°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	P_C	3	W
	SOT-89		0.75	W
Junction Temperature		T_J	+150	°C
Storage Temperature		T_{STG}	-40 ~ +150	°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.

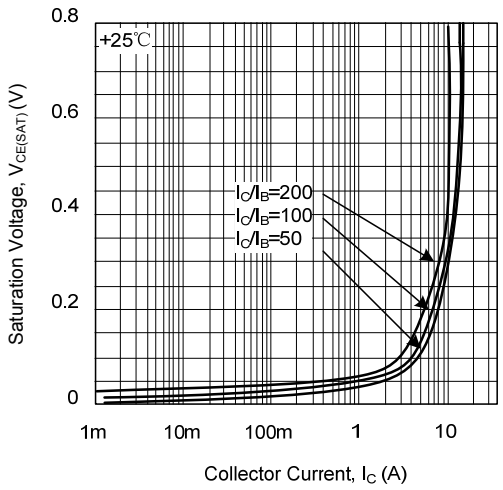
■ ELECTRICAL CHARACTERISTICS (T_A=25°C, unless otherwise specified)

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

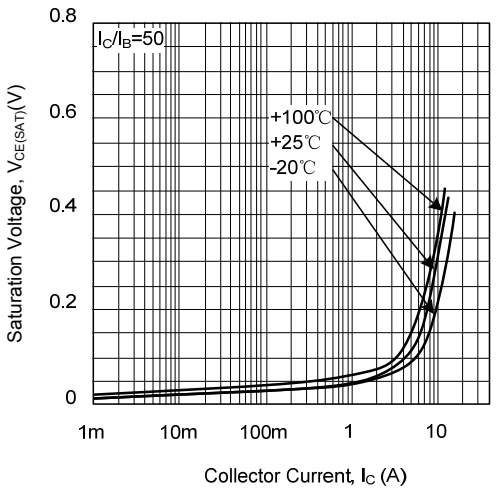
Note: Pulse test: Pulse Width=300μs, Duty Cycle≦2%

■ TYPICAL CHARACTERISTICS

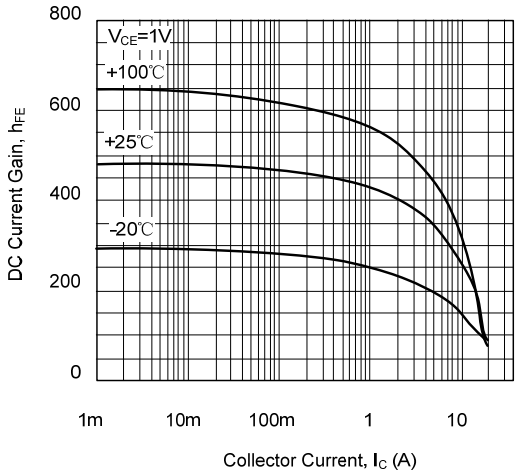
$V_{CE(SAT)}$ vs I_C



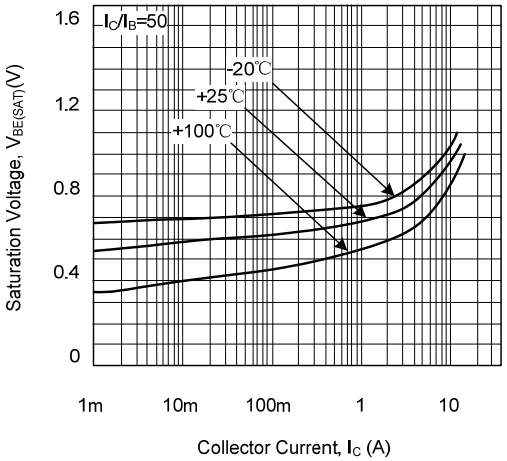
$V_{CE(SAT)}$ vs I_C



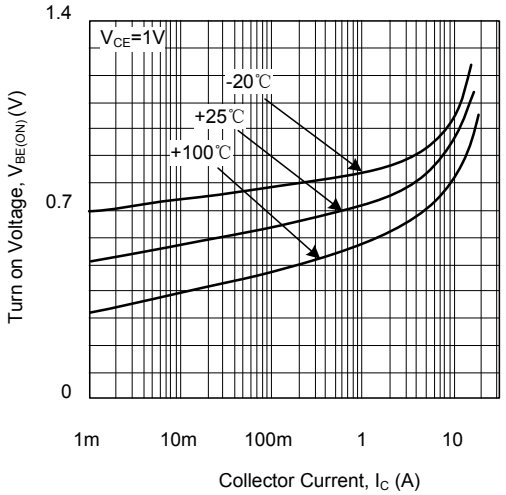
h_{FE} vs. I_C



$V_{BE(SAT)}$ vs. I_C



$V_{BE(ON)}$ vs I_C



Safe Operating Area