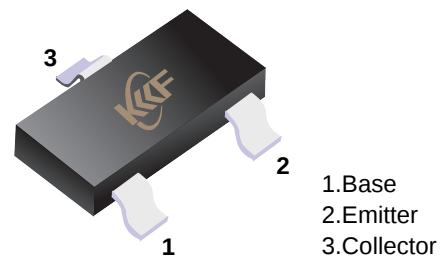


2SA812

■ PNP Silicon Epitaxial Transistor



■ Features

- High DC Current Gain: $h_{FE} = 200$ TYP. ($V_{CE} = -6.0$ V, $I_C = -1.0$ mA)
- High Voltage: $V_{CEO} = -50$ V

■ Simplified outline(SOT-23)

■ Absolute Maximum Ratings $T_a = 25^\circ\text{C}$

Parameter	Symbol	Rating	Unit
Collector to base voltage	V_{CBO}	-60	V
Collector to emitter voltage	V_{CEO}	-50	V
Emitter to base voltage	V_{EBO}	-5.0	V
Collector current (DC)	I_C	-100	mA
power dissipation	P_C	200	mW
Junction temperature	T_j	150	$^\circ\text{C}$
Storage temperature range	T_{stg}	-55 to +150	$^\circ\text{C}$

■ Electrical Characteristics $T_a = 25^\circ\text{C}$

Parameter	Symbol	Testconditions	Min	Typ	Max	Unit
Collector cutoff current	I_{CBO}	$V_{CB} = -60$ V, $I_E = 0$ A			-0.1	μA
Emitter cutoff current	I_{EBO}	$V_{EB} = -5.0$ V, $I_C = 0$ A			-0.1	μA
DC current gain *	h_{FE}	$V_{CE} = -6.0$ V, $I_C = -1.0$ mA	90	200	600	
Collector saturation voltage	$V_{CE(sat)}$	$I_C = -100$ mA, $I_B = -10$ mA		-0.18	-0.3	V
Base to emitter voltage	V_{BE}	$V_{CE} = 6.0$ V, $I_C = -1.0$ mA	-0.58	-0.62	-0.68	V
Output capacitance	C_{ob}	$V_{CE} = -10$ V, $I_E = 0$ A, $f = 1.0$ MHz		4.5		pF
Transition frequency	f_T	$V_{CE} = -6.0$ V, $I_E = 10$ mA		180		MHz

* Pulsed: $PW \leq 350 \mu\text{s}$, Duty Cycle $\leq 2\%$

■ h_{FE} Classification

Marking	M4	M5	M6	M7
h_{FE}	90~180	135~270	200~400	300~600

2SA812

■ Typical Characteristics

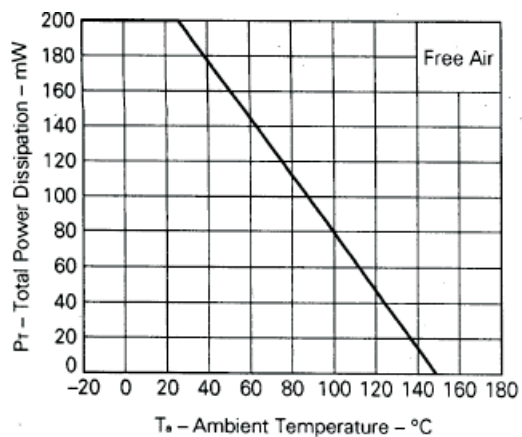


Fig.1 Total Power Dissipation vs. Ambient Temperature

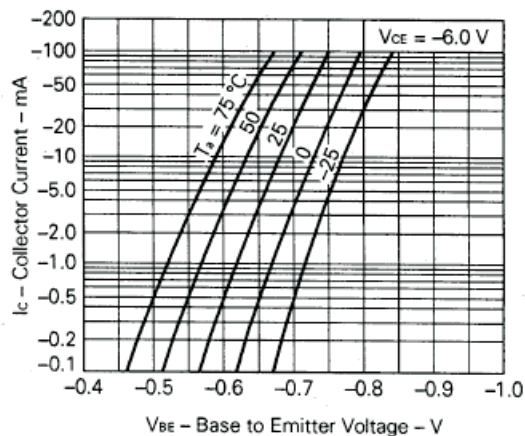


Fig.2 Collector Current vs. Base to Emitter Voltage

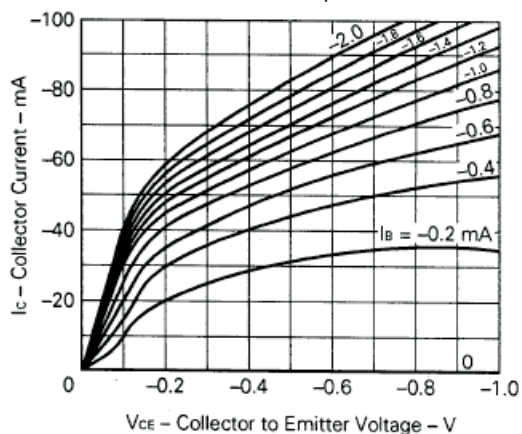


Fig.3 Collector Current vs. Collector to Emitter Voltage

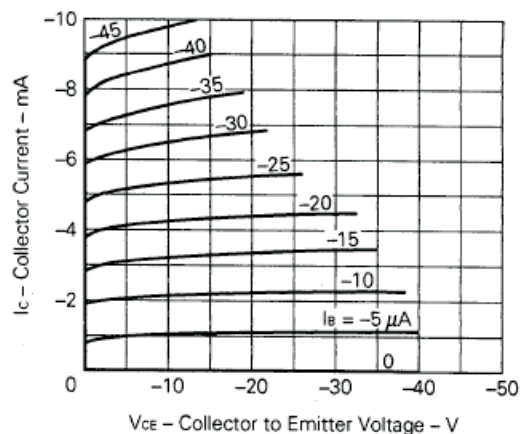


Fig.4 Collector Current vs. Collector to Emitter Voltage

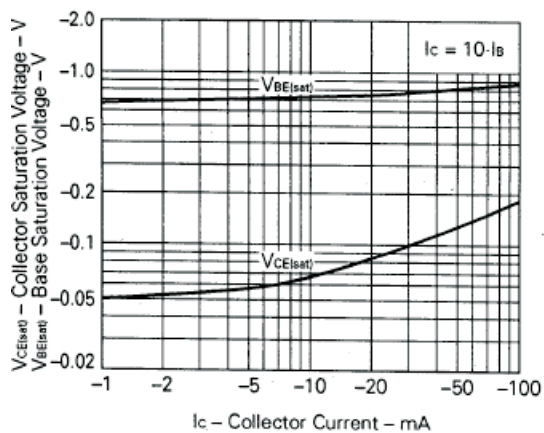


Fig.5 Base and Collector Saturation Voltage vs. Collector Current

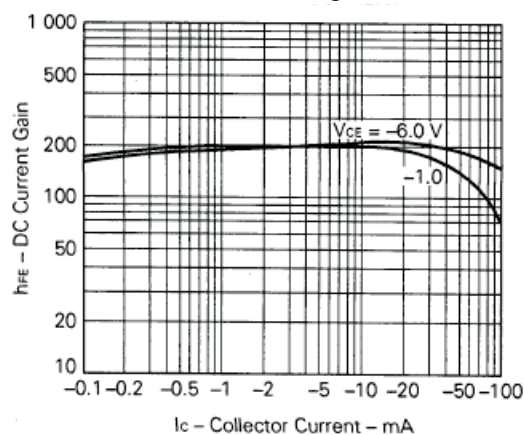
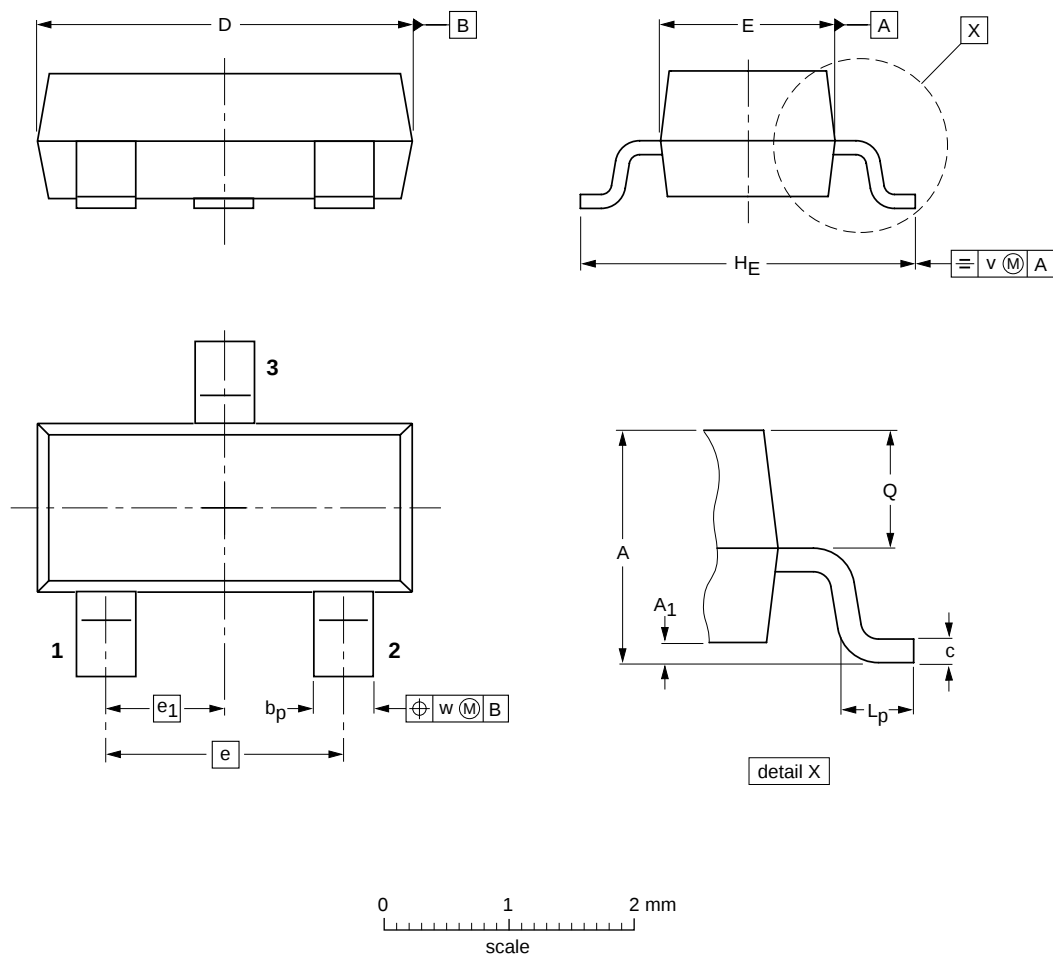


Fig.6 DC Current Gain vs. Collector Current

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■ SOT-23



DIMENSIONS (mm are the original dimensions)

UNIT	A	A ₁ max.	b _p	c	D	E	e	e ₁	H _E	L _p	Q	v	w
mm	1.1 0.9	0.1	0.48 0.38	0.15 0.09	3.0 2.8	1.4 1.2	1.9	0.95	2.5 2.1	0.45 0.15	0.55 0.45	0.2	0.1