

PNP SILICON EPITAXIAL TRANSISTOR

2SA1836

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DESCRIPTION

The 2SA1836 is PNP silicon epitaxial transistor.

FEATURES

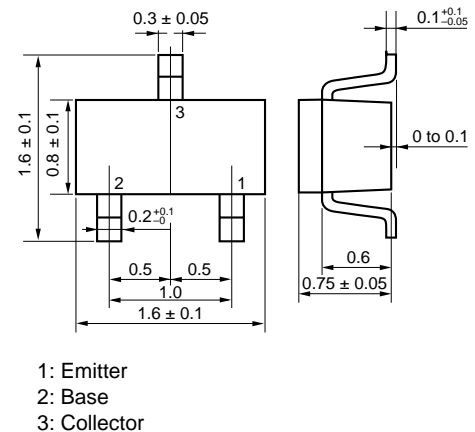
- High DC current gain: $h_{FE2} = 200$ TYP.
- High voltage: $V_{CEO} = -50$ V

ABSOLUTE MAXIMUM RATINGS ($T_A = 25^\circ\text{C}$)

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)	$I_{C(DC)}$	-100	mA
Collector Current (pulse) ^{Note1}	$I_{C(pulse)}$	-200	mA
Total Power Dissipation ($T_A = 25^\circ\text{C}$) ^{Note2}	P_T	200	mW
Junction Temperature	T_j	150	$^\circ\text{C}$
Storage Temperature Range	T_{stg}	-55 to + 150	$^\circ\text{C}$

- Notes**
1. $PW \leq 10$ ms, Duty Cycle $\leq 50\%$
 2. When mounted on ceramic substrate of $3.0 \text{ cm}^2 \times 0.64$ mm

PACKAGE DRAWING (Unit: mm)



ELECTRICAL CHARACTERISTICS ($T_A = 25^\circ\text{C}$)

CHARACTERISTICS	SYMBOL	TEST CONDITIONS	MIN.	TYP.	MAX.	UNIT
Collector Cut-off Current	I_{CBO}	$V_{CB} = -60$ V, $I_E = 0$			-100	nA
Emitter Cut-off Current	I_{EBO}	$V_{EB} = -5.0$ V, $I_C = 0$			-100	nA
DC Current Gain ^{Note}	h_{FE1}	$V_{CE} = -6.0$ V, $I_C = -0.1$ mA	50			-
	h_{FE2}	$V_{CE} = -6.0$ V, $I_C = -1.0$ mA	90	200	600	-
Base to Emitter Voltage ^{Note}	V_{BE}	$V_{CE} = -6.0$ V, $I_C = -1.0$ mA		-0.62		V
Collector Saturation Voltage ^{Note}	$V_{CE(sat)}$	$I_C = -100$ mA, $I_B = -10$ mA		-0.18	-0.3	V
Base Saturation Voltage ^{Note}	$V_{BE(sat)}$	$I_C = -100$ mA, $I_B = -10$ mA		-0.86	-1.0	V
Gain Bandwidth Product	f_T	$V_{CE} = -6.0$ V, $I_E = 10$ mA	50	180		MHz
Output Capacitance	C_{ob}	$V_{CE} = -6.0$ V, $I_E = 0$, $f = 1.0$ MHz		4.5	6.0	pF

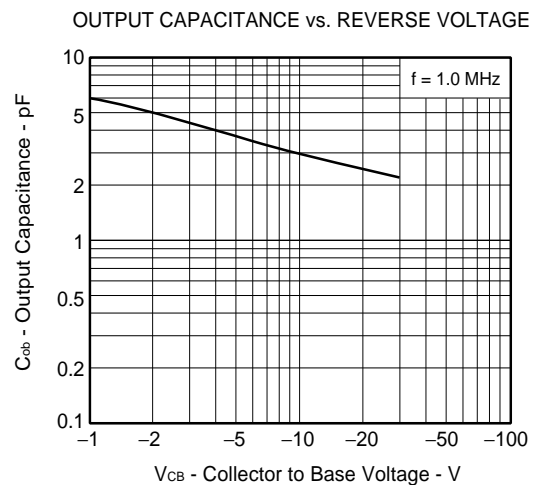
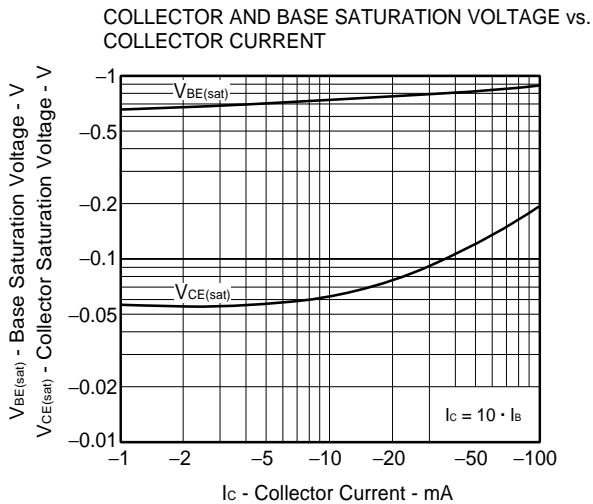
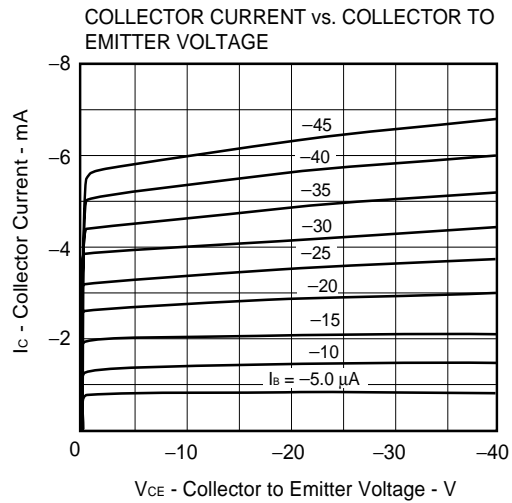
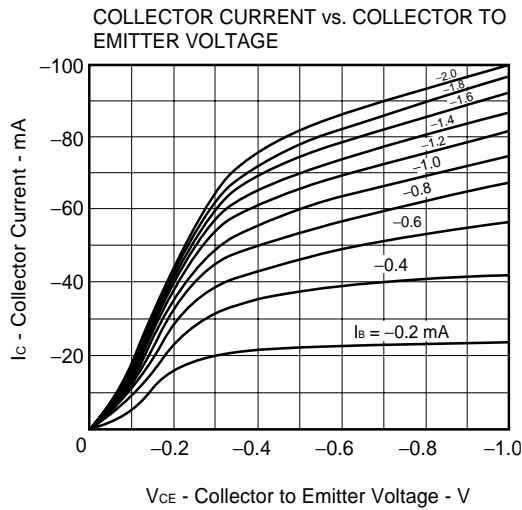
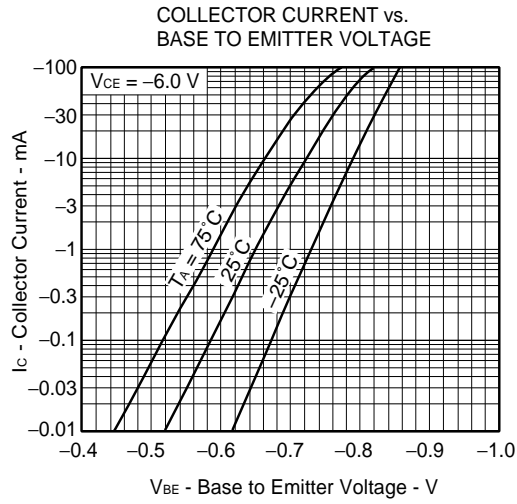
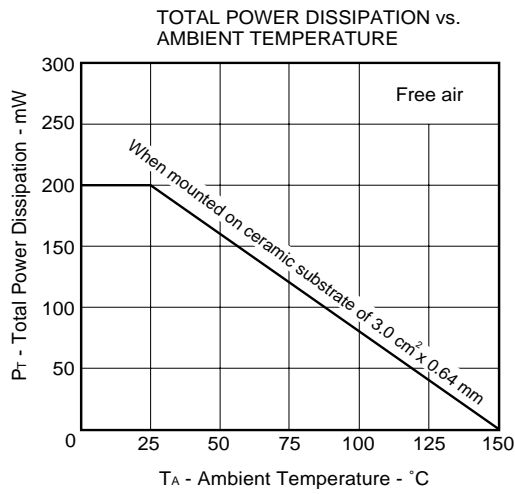
Note Pulsed: $PW \leq 350 \mu\text{s}$, Duty Cycle $\leq 2\%$

h_{FE} CLASSIFICATION

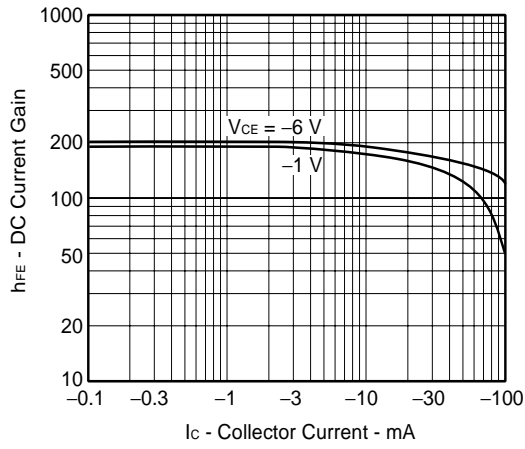
Marking	M4	M5	M6	M7
h_{FE2}	90 to 180	135 to 270	200 to 400	300 to 600

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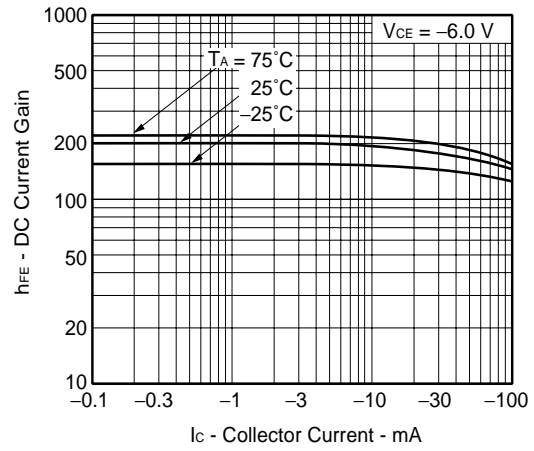
TYPICAL CHARACTERISTICS (T_A = 25°C)



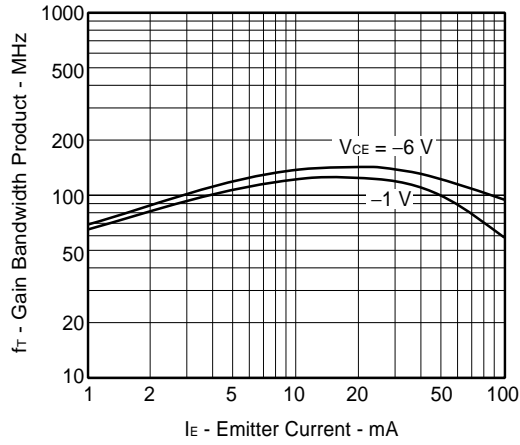
DC CURRENT GAIN vs. COLLECTOR CURRENT



DC CURRENT GAIN vs. COLLECTOR CURRENT



GAIN BANDWIDTH PRODUCT vs. EMITTER CURRENT



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