

**PNP SILICON EPITAXIAL TRANSISTOR  
 FOR HIGH-SPEED SWITCHING**

The 2SA1845 is a power transistor developed for high-speed switching and features a high  $h_{FE}$  at low  $V_{CE(sat)}$ . This transistor is ideal for use as a driver in DC/DC converters and actuators.

In addition, this transistor features a package that can be auto-mounted in radial taping specifications, thus contributing to mounting cost reduction.

**FEATURES**

- Auto-mounting possible in radial taping specifications
- Resin-molded insulation type package with power rating of 1.8 W in stand-alone conditions
- High  $h_{FE}$  and low  $V_{CE(sat)}$ :  
 $V_{CE(sat)} \leq -0.3 \text{ V}$  @  $I_C = -3.0 \text{ A}$ ,  $I_B = -0.15 \text{ A}$   
 $h_{FE} \geq 100$  @  $V_{CE} = -2.0 \text{ V}$ ,  $I_C = -1.0 \text{ A}$
- Fast switching speed

**ABSOLUTE MAXIMUM RATINGS (Ta = 25°C)**

Parameter	Symbol	Conditions	Ratings	Unit
Collector to base voltage	$V_{CBO}$		-150	V
Collector to emitter voltage	$V_{CEO}$		-100	V
Emitter to base voltage	$V_{EBO}$		-7.0	V
Collector current (DC)	$I_{C(DC)}$		-5.0	A
Collector current (pulse)	$I_{C(pulse)}$	$PW \leq 300 \mu s$ , duty cycle $\leq 2\%$	-10	A
Base current (DC)	$I_{B(DC)}$		-2.5	A
Total power dissipation	$P_T$	$T_a = 25^\circ C$	1.8	W
Junction temperature	$T_j$		150	$^\circ C$
Storage temperature	$T_{stg}$		-55 to +150	$^\circ C$

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ELECTRICAL CHARACTERISTICS (Ta = 25°C)

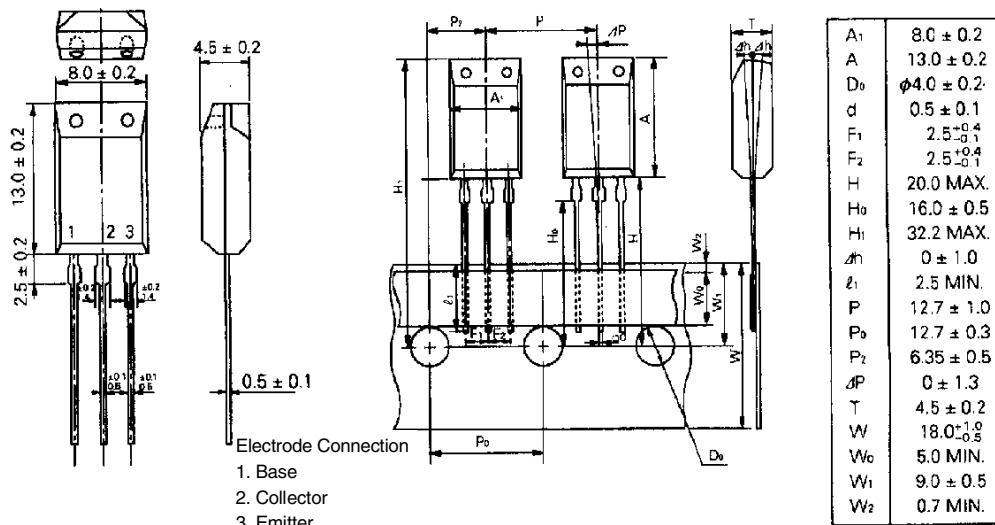
Parameter	Symbol	Conditions	MIN.	TYP.	MAX.	Unit
Collector cutoff current	ICBO	V <sub>CB</sub> = -100 V, I <sub>E</sub> = 0			-10	μA
Collector cutoff current	ICER	V <sub>CE</sub> = -100 V, R <sub>EB</sub> = 50 Ω Ta = 125°C			-1.0	mA
Collector cutoff current	ICEX1	V <sub>CE</sub> = -100 V, V <sub>BE(off)</sub> = 1.5 V			-10	μA
Collector cutoff current	ICEX2	V <sub>CE</sub> = -100 V, V <sub>BE(off)</sub> = 1.5 V Ta = 125°C			-1.0	mA
Emitter cutoff current	IEBO	V <sub>EB</sub> = -5.0 V, I <sub>C</sub> = 0			-10	μA
DC current gain	h <sub>FE1</sub> *	V <sub>CE</sub> = -2.0 V, I <sub>C</sub> = -0.5 A	100			-
DC current gain	h <sub>FE2</sub> *	V <sub>CE</sub> = -2.0 V, I <sub>C</sub> = -1.0 A	100		400	-
DC current gain	h <sub>FE3</sub> *	V <sub>CE</sub> = -2.0 V, I <sub>C</sub> = -3.0 A	60			-
Collector saturation voltage	V <sub>CE(sat)1</sub> *	I <sub>C</sub> = -3.0 A, I <sub>B</sub> = -0.15 A			-0.3	V
Collector saturation voltage	V <sub>CE(sat)2</sub> *	I <sub>C</sub> = -4.0 A, I <sub>B</sub> = -0.2 A			-0.5	V
Base saturation voltage	V <sub>BE(sat)1</sub> *	I <sub>C</sub> = -3.0 A, I <sub>B</sub> = -0.15 A			-1.2	V
Base saturation voltage	V <sub>BE(sat)2</sub> *	I <sub>C</sub> = -4.0 A, I <sub>B</sub> = -0.2 A			-1.5	V
Gain bandwidth product	f <sub>T</sub>	V <sub>CE</sub> = -10 V, I <sub>C</sub> = -0.5 A		150		MHz
Collector capacitance	C <sub>ob</sub>	V <sub>CB</sub> = -10 V, I <sub>E</sub> = 0, f = 1 MHz		130		pF
Turn-on time	t <sub>on</sub>	I <sub>C</sub> = -3.0 A			0.3	μs
Storage time	t <sub>stg</sub>	I <sub>B1</sub> = -I <sub>B2</sub> = -0.15 A R <sub>L</sub> = 16.7 Ω, V <sub>CC</sub> = -50 V			1.4	μs
Fall time	t <sub>f</sub>				0.4	μs

\* Pulse test PW ≤ 350 μs, duty cycle ≤ 2%

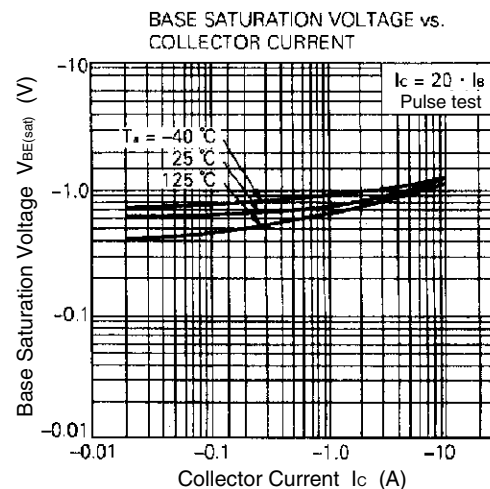
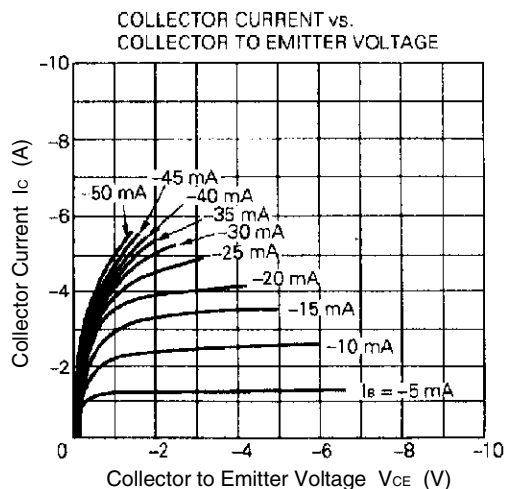
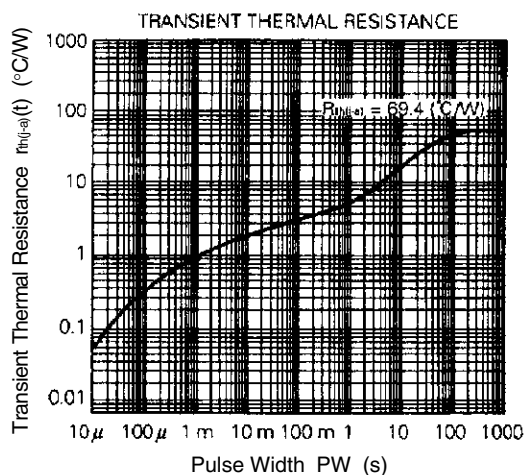
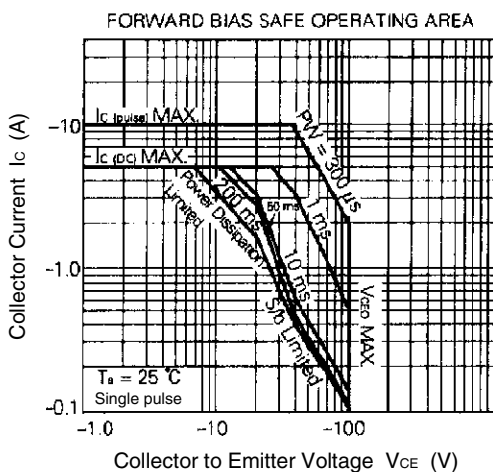
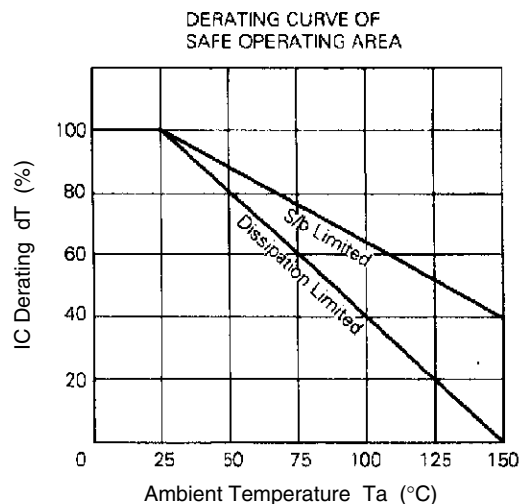
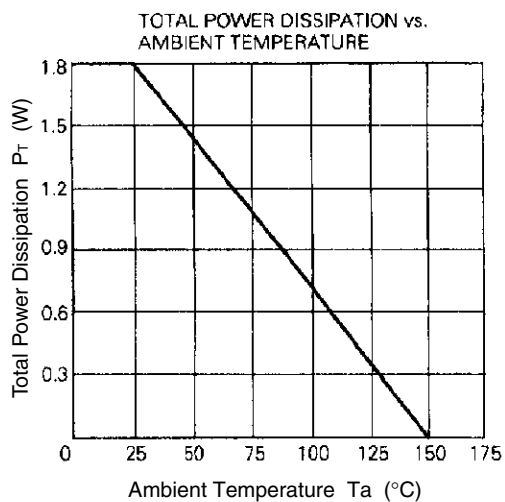
h<sub>FE</sub> CLASSIFICATION

Marking	M	L	K
h <sub>FE</sub>	100 to 200	150 to 300	200 to 400

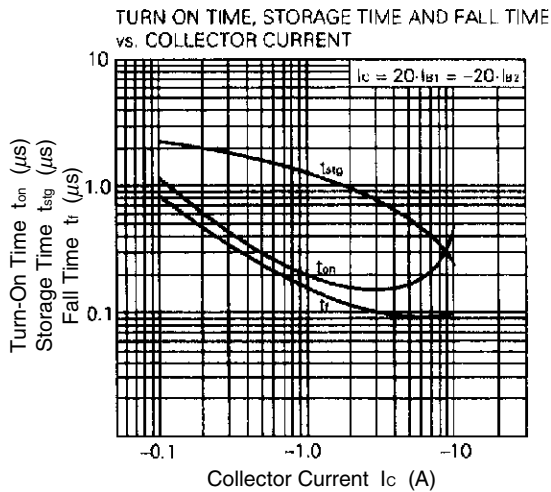
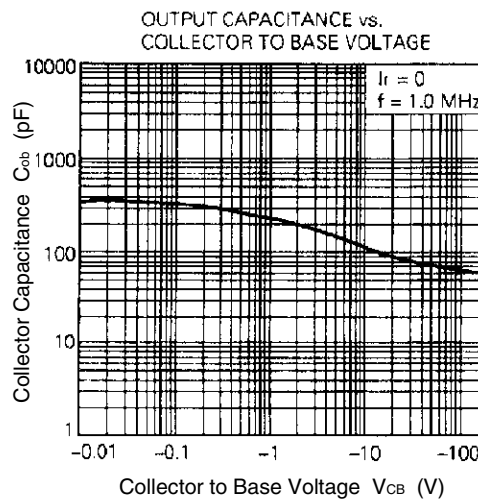
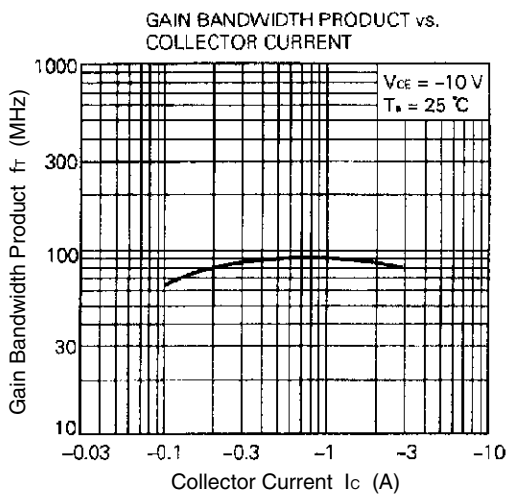
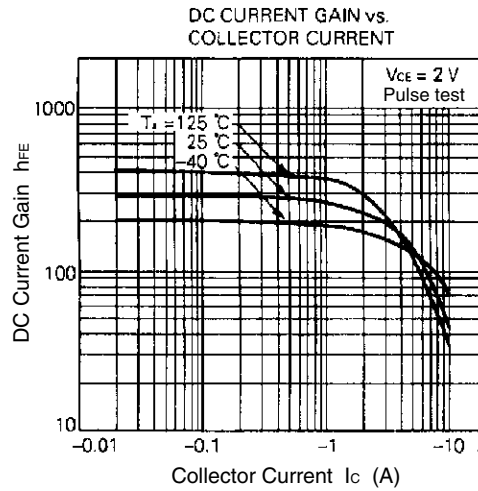
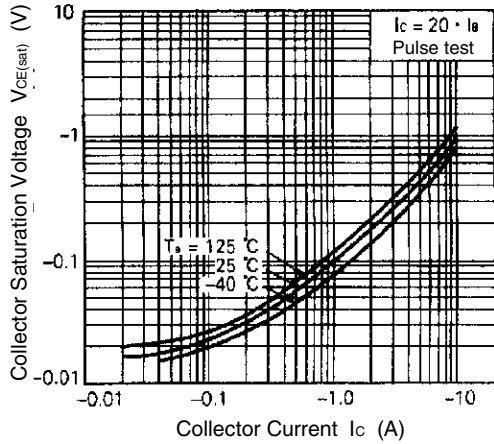
PACKAGE DRAWING (UNIT: mm) TAPING SPECIFICATION



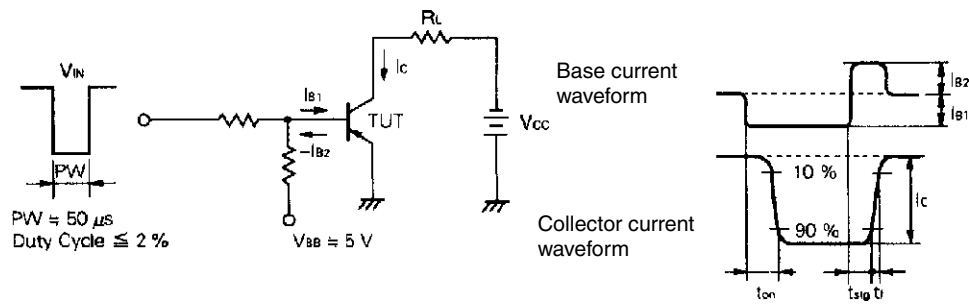
查询"2SA1845"供应商 TYPICAL CHARACTERISTICS (Ta = 25°C)



查询"2SA1845"供应商 **COLLECTOR SATURATION VOLTAGE vs. COLLECTOR CURRENT**



[查询2SA1845供应商](#) SWITCHING TIME ( $t_{on}$ ,  $t_{stg}$ ,  $t_f$ ) TEST CIRCUIT



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