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Renesas Electronics website: <http://www.renesas.com>

April 1st, 2010
Renesas Electronics Corporation

Issued by: Renesas Electronics Corporation (<http://www.renesas.com>)

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PNP SILICON EPITAXIAL POWER TRANSISTOR FOR HIGH-SPEED SWITCHING

The 2SA1843 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

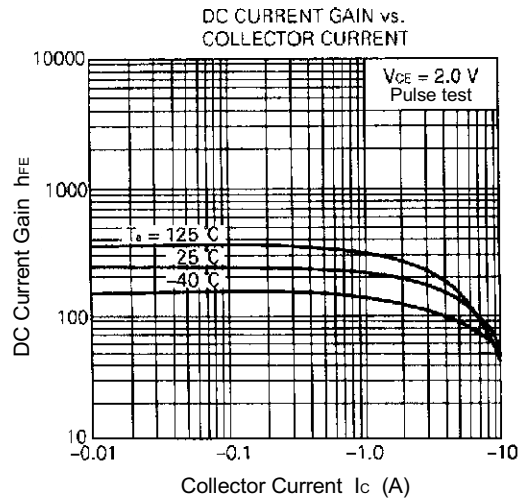
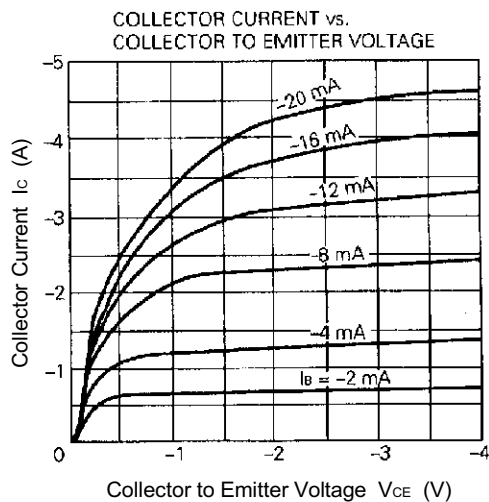
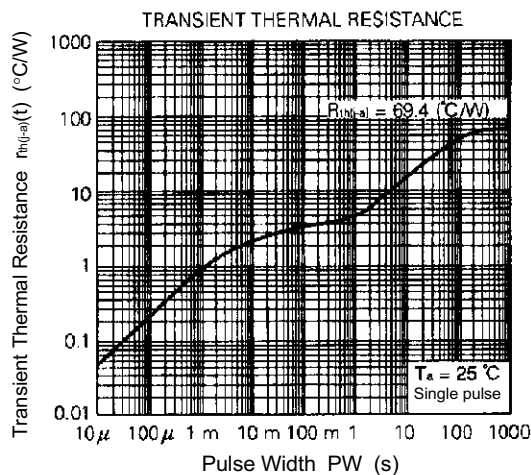
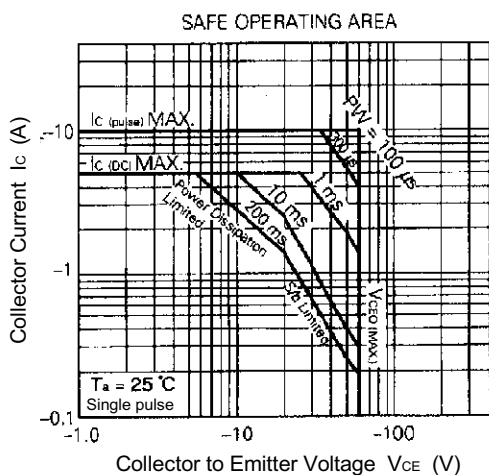
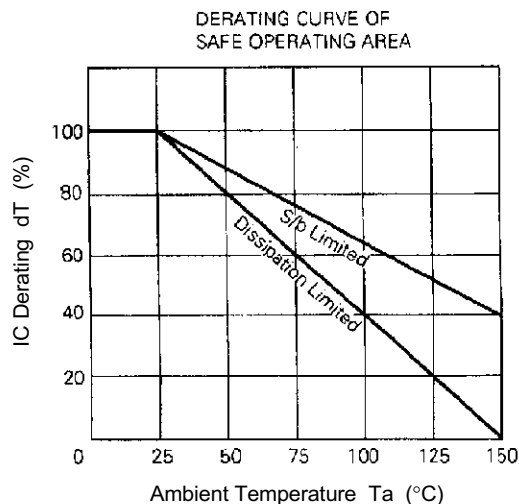
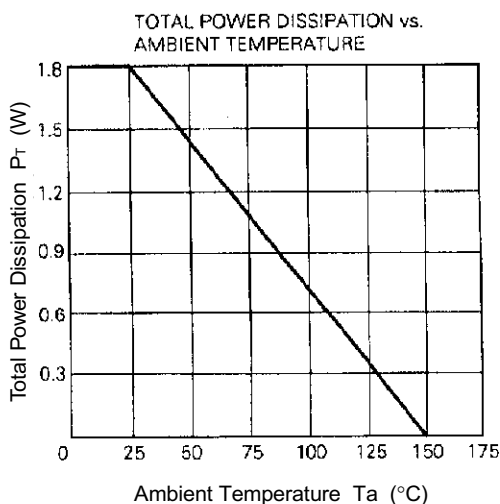
- Auto-mounting possible in radial taping specifications
- Resin-molded insulation type package with power rating of 1.8 W in stand-alone conditions
- High h_{FE} and low $V_{CE(sat)}$:
 $V_{CE(sat)} \leq -0.3 \text{ V}$ @ $I_C = -3.0 \text{ A}$, $I_B = -0.15 \text{ A}$
 $h_{FE} \geq 100$ @ $V_{CE} =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

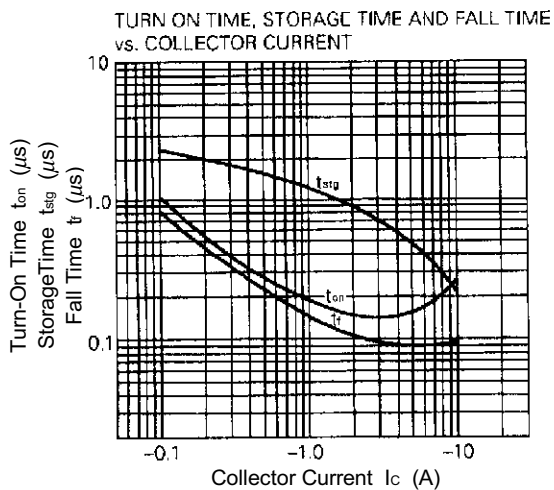
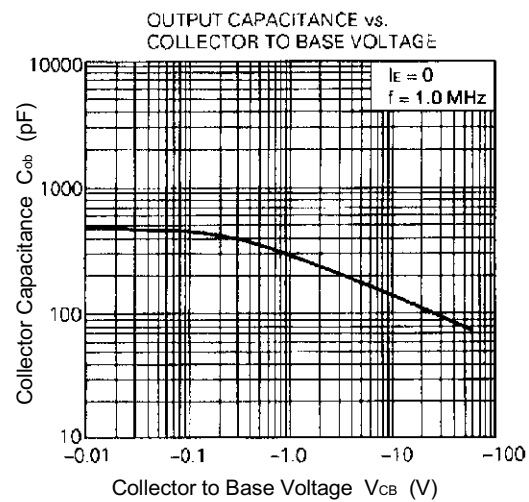
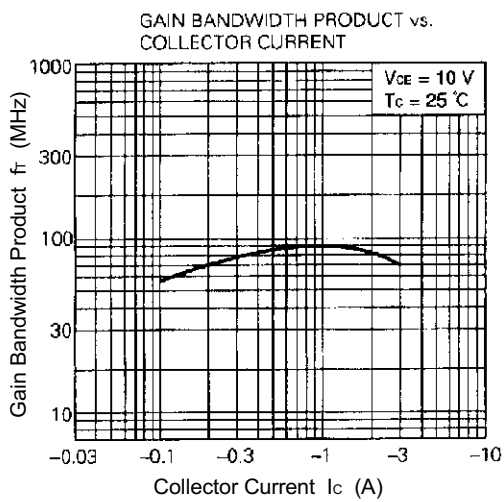
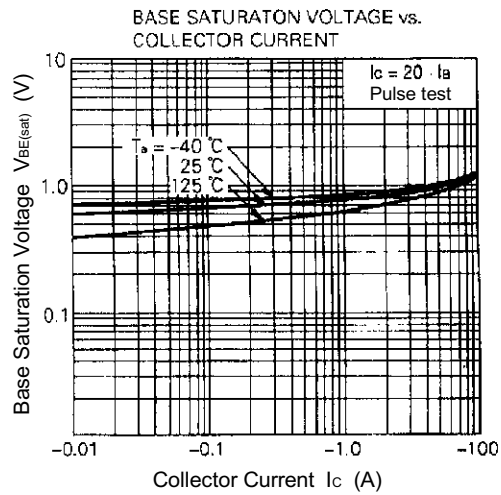
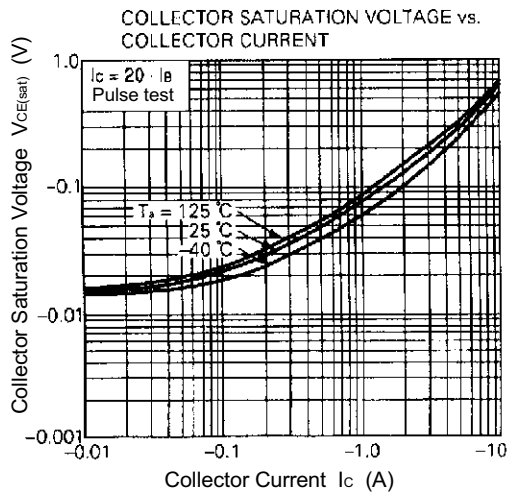
ABSOLUTE MAXIMUM RATINGS ($T_a = 25^\circ\text{C}$)

Parameter	Symbol	Conditions	Ratings	Unit
Collector to base voltage	V_{CBO}		-100	V
Collector to emitter voltage	V_{CEO}		-60	V
Emitter to base voltage	V_{EBO}		-7.0	V
Collector current (DC)	$I_{C(DC)}$		-5.0	A
Collector current (pulse)	$I_{C(pulse)}$	$PW \leq 300 \mu\text{s}$, duty cycle $\leq 2\%$	-10	A
Base current (DC)	$I_{B(DC)}$		-2.5	A
Total power dissipation	P_T	$T_a = 25^\circ\text{C}$	1.8	W
Junction temperature	T_j		150	$^\circ\text{C}$
Storage temperature	T_{stg}		-55 to +150	$^\circ\text{C}$

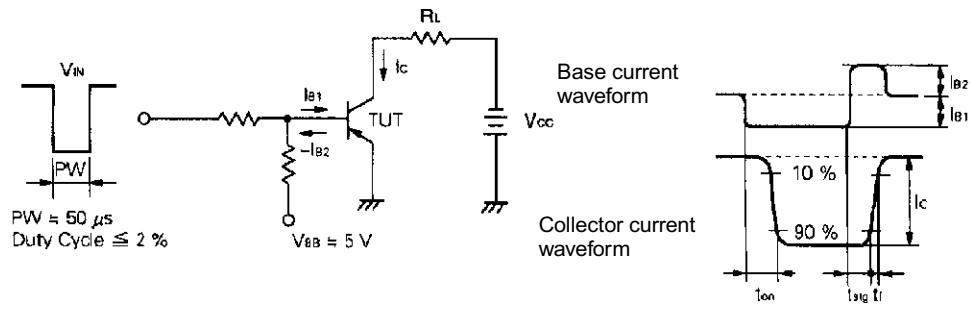
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TYPICAL CHARACTERISTICS (Ta = 25°C)





SWITCHING TIME (t_{on} , t_{stg} , t_f) TEST CIRCUIT



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