



SANYO Semiconductors

DATA SHEET

2SA2117 / 2SC5934

PNP / NPN Epitaxial Planar Silicon Transistors

High Current Switching Applications

Applications

- Relay drivers, lamp drivers, motor drivers.

Features

- Adoption of MBIT process.
- High-speed switching.
- Large current capacitance.
- Low collector-to-emitter saturation voltage.

Specifications

() : 2SA2117

Absolute Maximum Ratings at Ta=25°C

Parameter	Symbol	Conditions	Ratings	Unit
Collector-to-Base Voltage	V _{CB0}		(-50)60	V
Collector-to-Emitter Voltage	V _{CE0}		(-)50	V
Emitter-to-Base Voltage	V _{EB0}		(-)6	V
Collector Current	I _C		(-)5	A
Collector Current (Pulse)	I _{CP}		(-)8	A
Base Current	I _B		(-)1	A
Collector Dissipation	P _C		2	W
		T _C =25°C	18	W
Junction Temperature	T _J		150	°C
Storage Temperature	T _{stg}		-55 to +150	°C

Electrical Characteristics at Ta=25°C

Parameter	Symbol	Conditions	Ratings			Unit
			min	typ	max	
Collector Cutoff Current	I _{CB0}	V _{CB} =(-)40V, I _E =0			(-)10	μA
Emitter Cutoff Current	I _{EB0}	V _{EB} =(-)4V, I _C =0			(-)10	μA
DC Current Gain	h _{FE}	V _{CE} =(-)2V, I _C =(-)1A	200		(560)700	
Gain-Bandwidth Product	f _T	V _{CE} =(-)5V, I _C =(-)1A		(130)200		MHz

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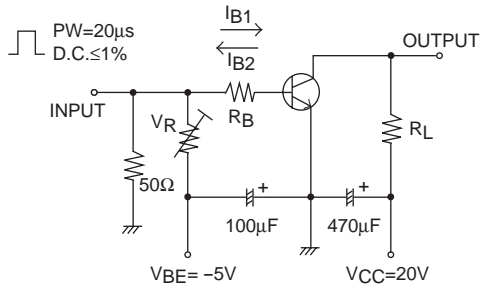
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Parameter	Symbol	Conditions	Ratings			Unit
			min	typ	max	
Output Capacitance	C_{ob}	$V_{CB} = (-)10V, f = 1MHz$		(55)35		pF
Collector-to-Emitter Saturation Voltage	$V_{CE(sat)}$	$I_C = (-)2.5A, I_B = (-)125mA$		(-280)180	(-560)360	mV
Base-to-Emitter Saturation Voltage	$V_{BE(sat)}$	$I_C = (-)2.5A, I_B = (-)125mA$		(-)0.93	(-)1.4	V
Collector-to-Base Breakdown Voltage	$V_{(BR)CBO}$	$I_C = (-)100\mu A, I_E = 0$	(-50)60			V
Collector-to-Emitter Breakdown Voltage	$V_{(BR)CEO}$	$I_C = (-)1mA, R_{BE} = \infty$	(-)50			V
Emitter-to-Base Breakdown Voltage	$V_{(BR)EBO}$	$I_E = (-)100\mu A, I_C = 0$	(-)6			V
Turn-ON Time	t_{on}	See specified Test Circuit.		150		ns
Storage Time	t_{stg}	See specified Test Circuit.		1000		ns
Fall Time	t_f	See specified Test Circuit.		50		ns

Switching Time Test Circuit

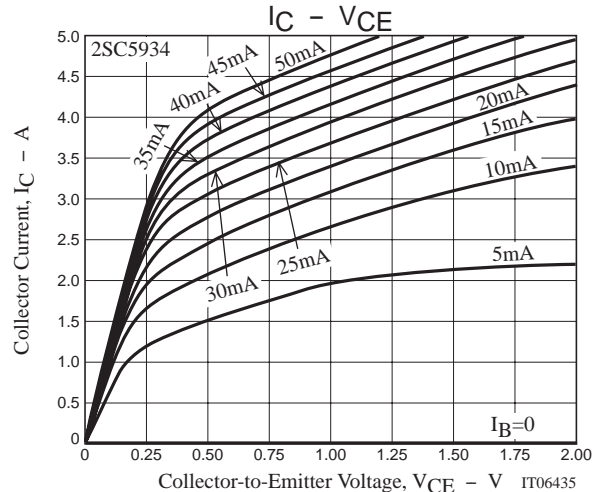
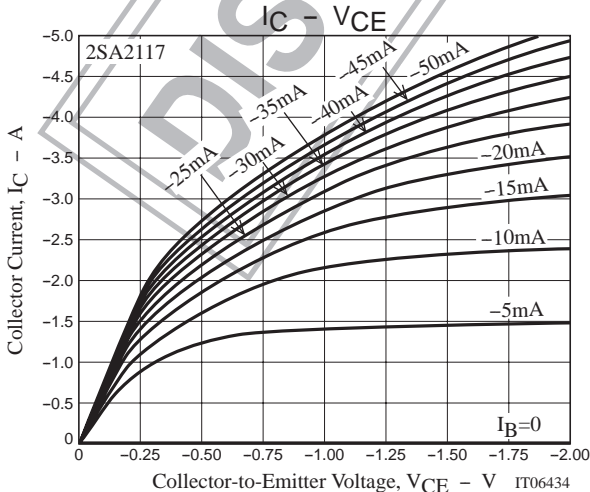
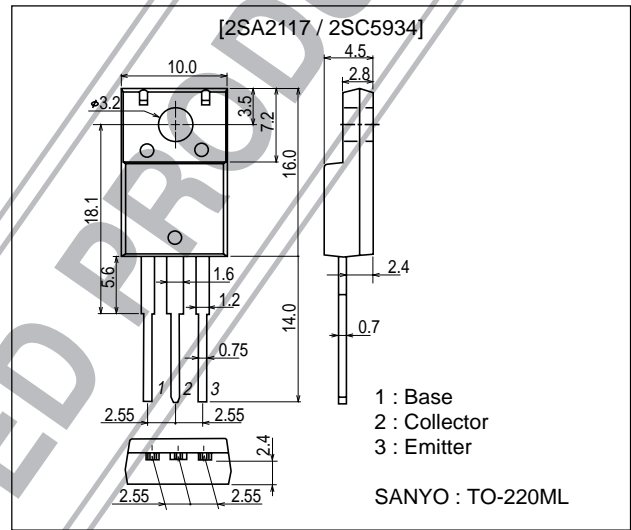


$I_C = 20I_B1 = -20I_B2 = 1A$
(For PNP, minus sign is omitted.)

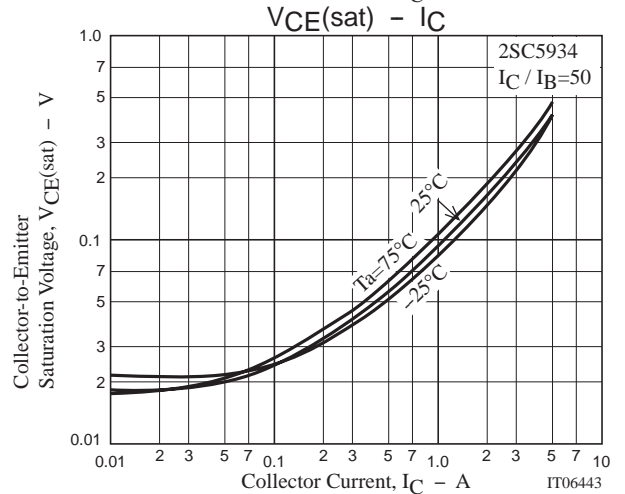
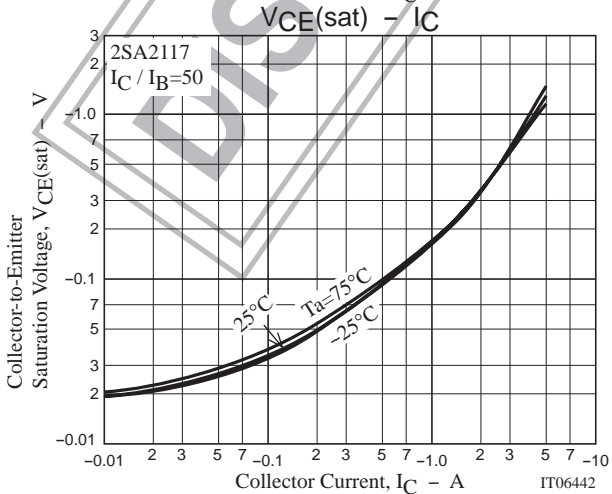
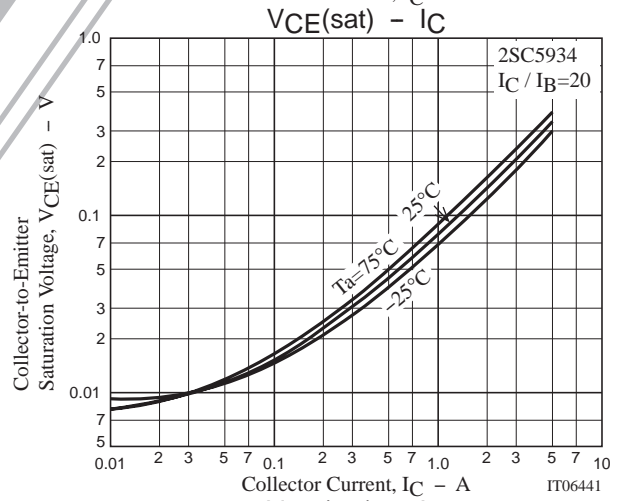
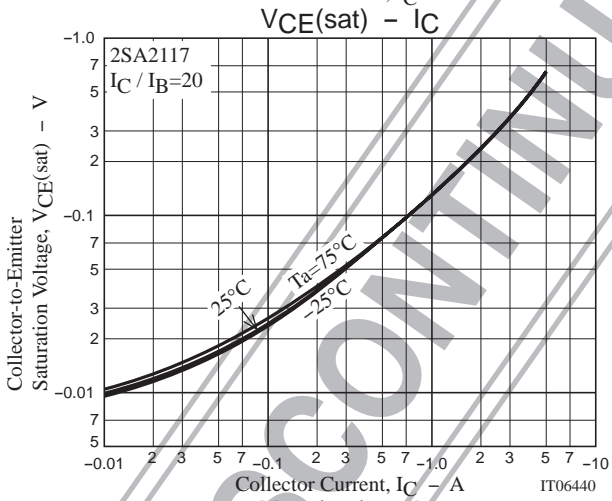
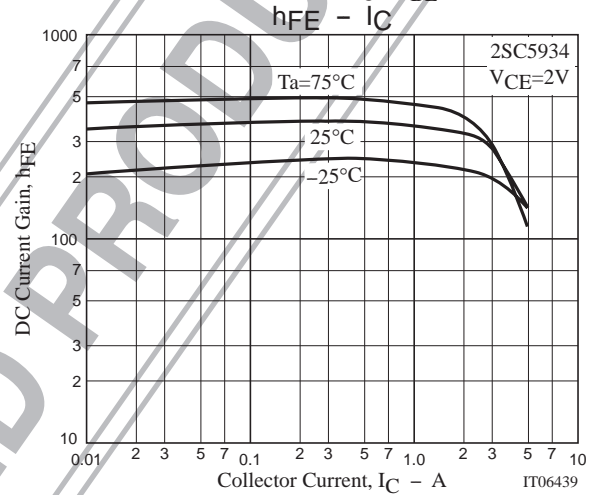
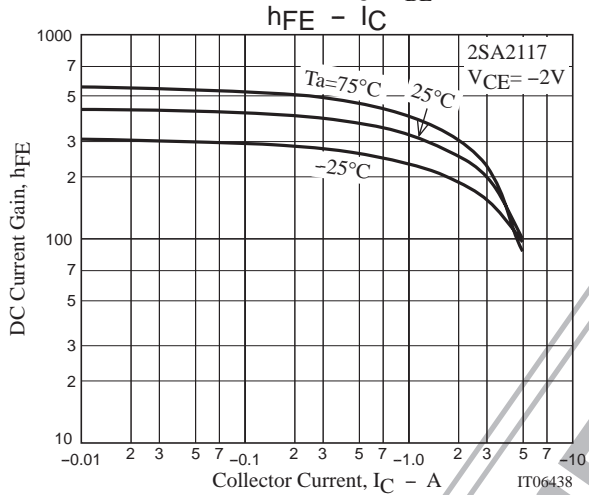
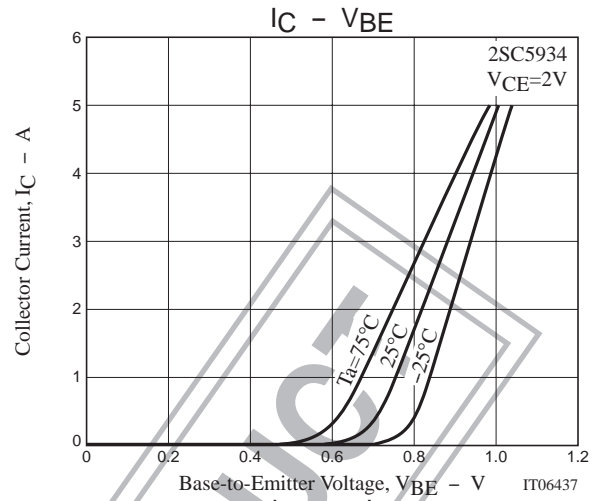
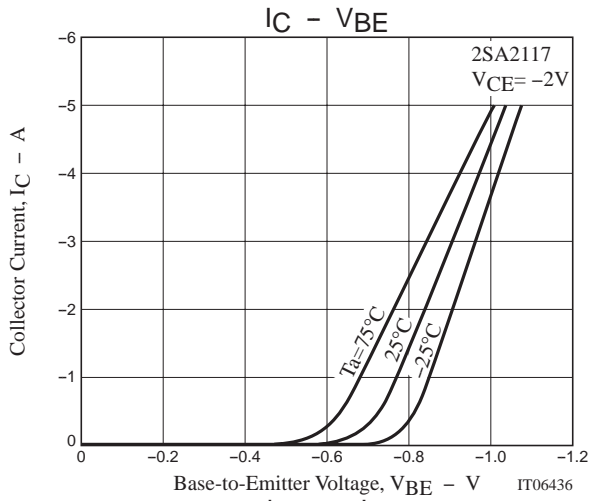
Package Dimensions

unit : mm

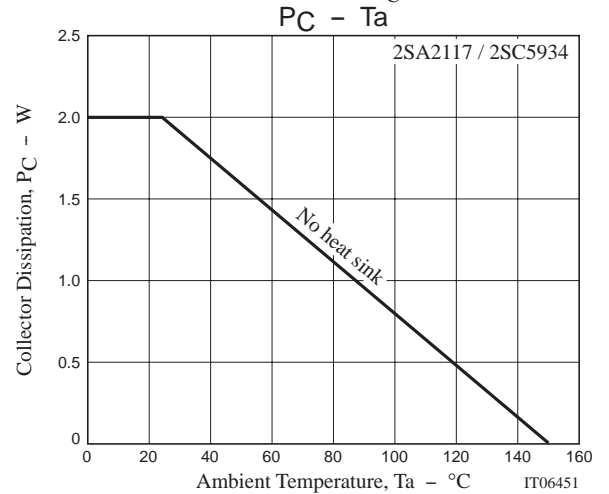
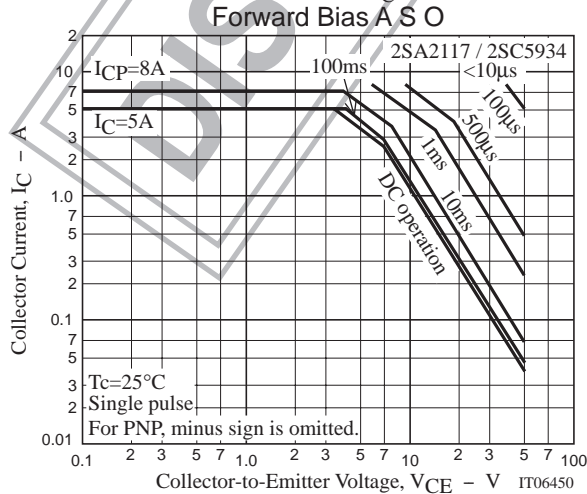
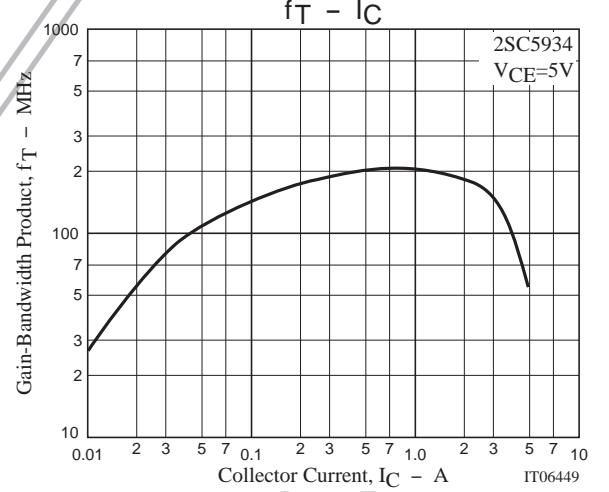
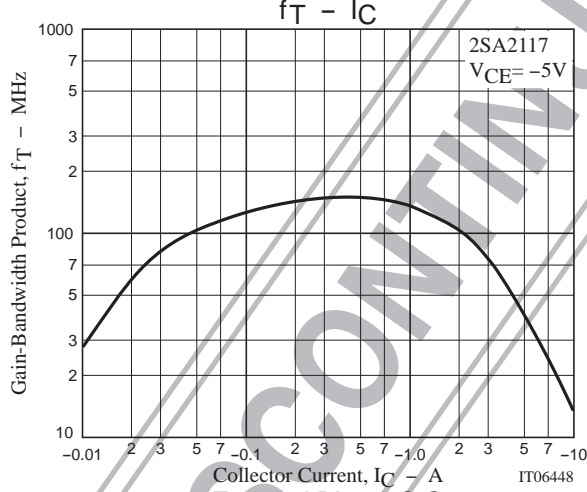
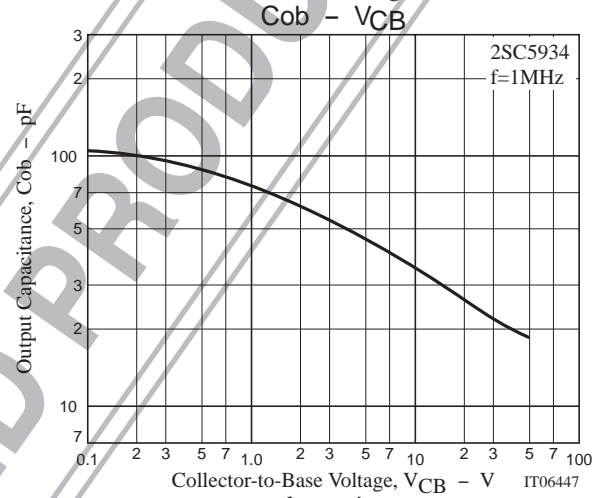
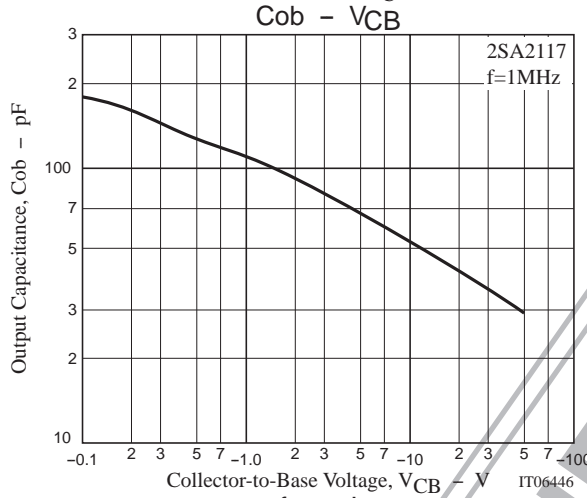
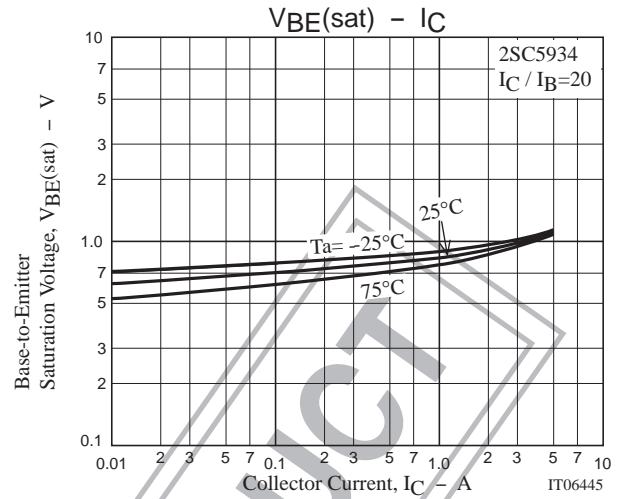
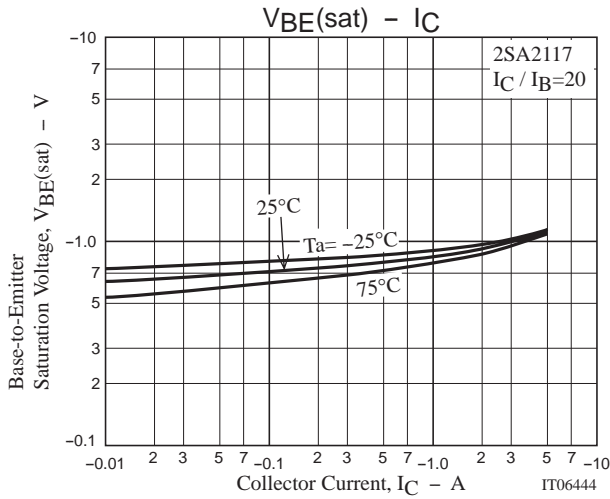
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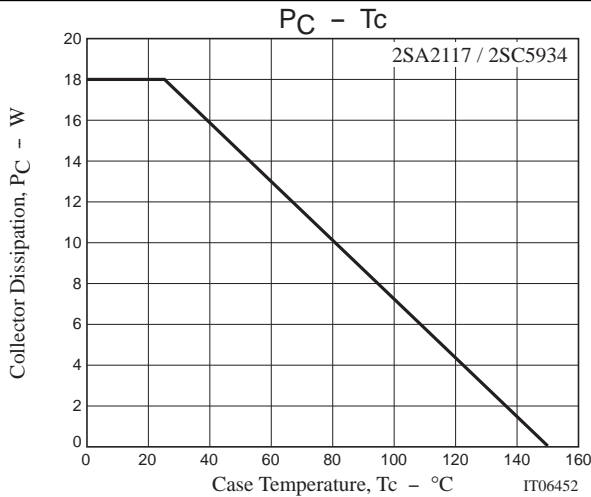


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