

2SA2117 / 2SC5934



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

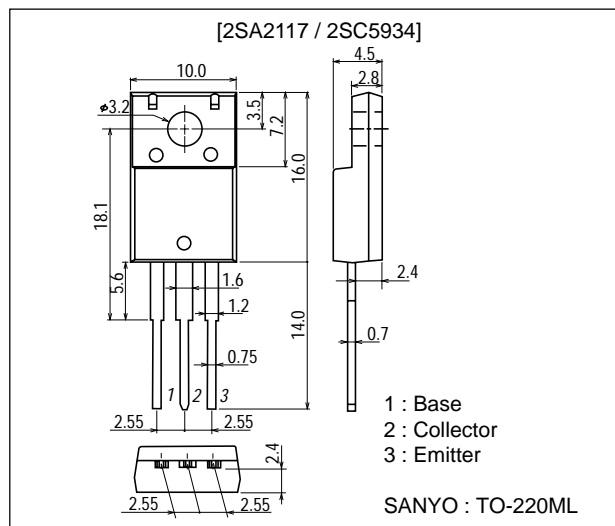
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Absolute Maximum Ratings at Ta=25°C

Parameter	Symbol	Conditions	Ratings	Unit
Collector-to-Base Voltage	V _{CB0}		(-50)60	V
Collector-to-Emitter Voltage	V _{CEO}		(-)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

Package Dimensions

unit : mm
2041A



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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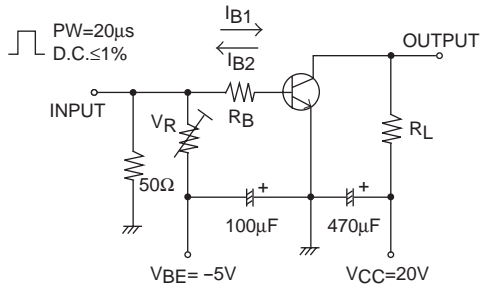
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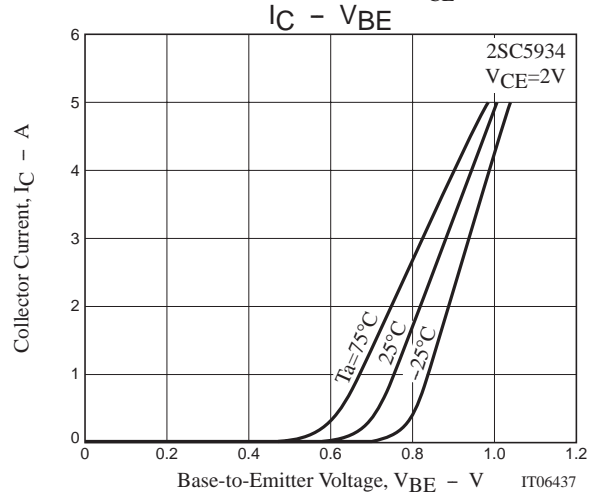
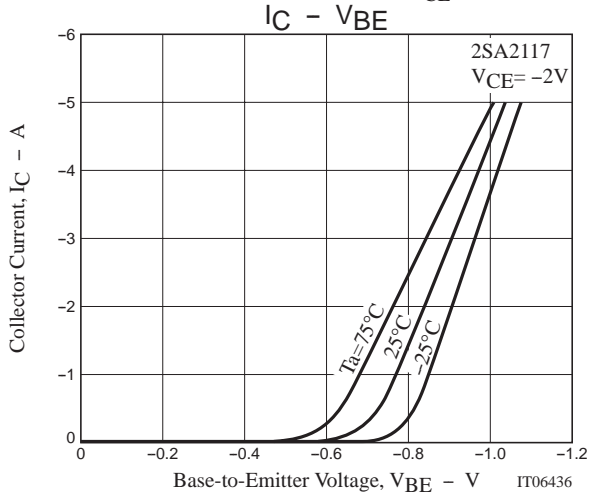
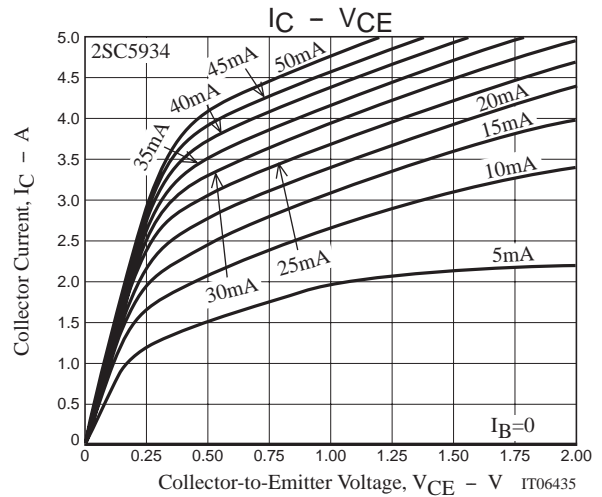
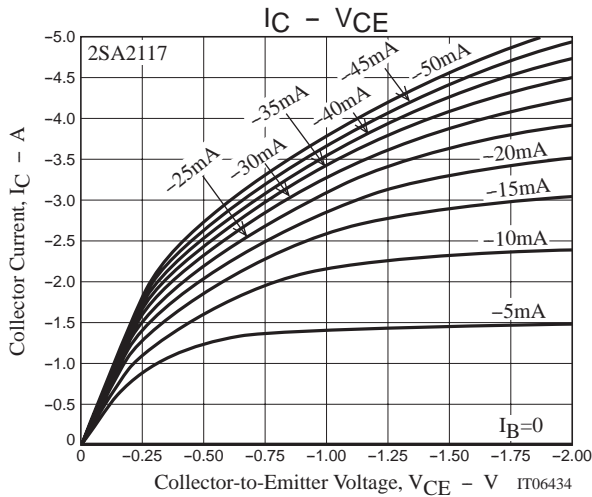
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Parameter	Symbol	Conditions	Ratings			Unit
			min	typ	max	
Output Capacitance	Cob	V _{CB} =(-)10V, f=1MHz		(55)35		pF
Collector-to-Emitter Saturation Voltage	V _{CE(sat)}	I _C =(-)2.5A, I _B =(-)125mA		(-280)180	(-560)360	mV
Base-to-Emitter Saturation 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 =(-)100μA, I _E =0	(-50)60			V
Collector-to-Emitter Breakdown Voltage	V _{(BR)CEO}	I _C =(-)1mA, R _{BE} =∞	(-)50			V
Emitter-to-Base Breakdown Voltage	V _{(BR)EBO}	I _E =(-)100μA, 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

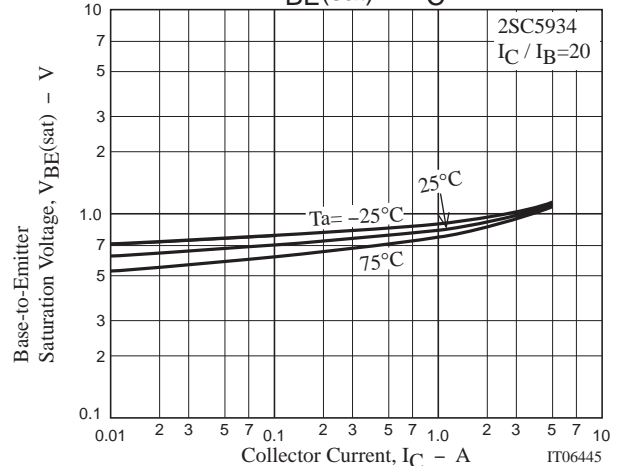
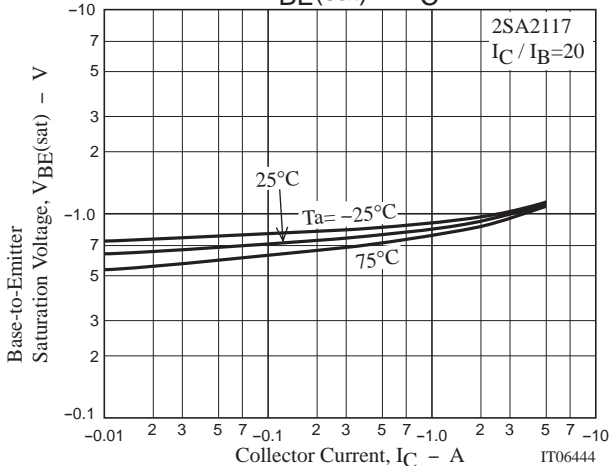
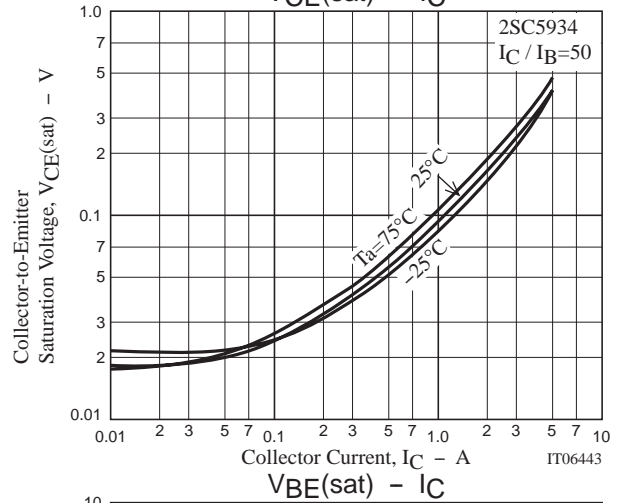
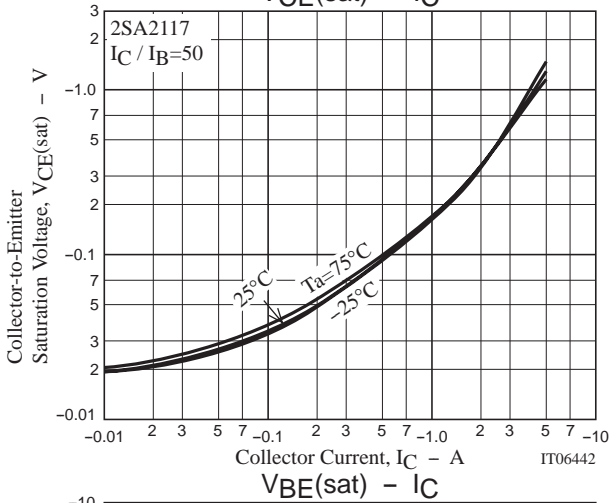
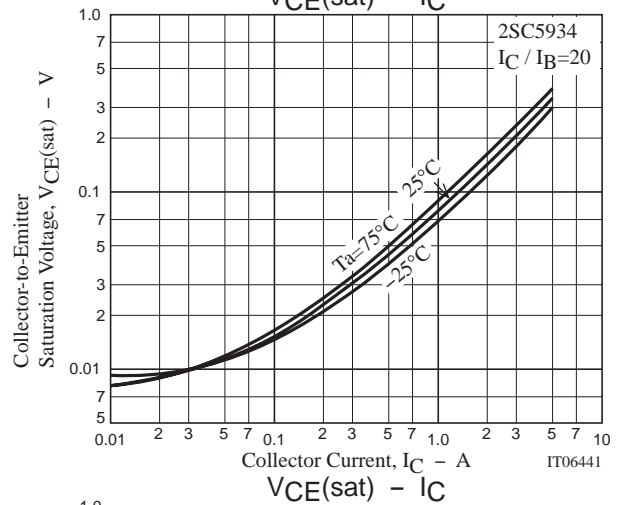
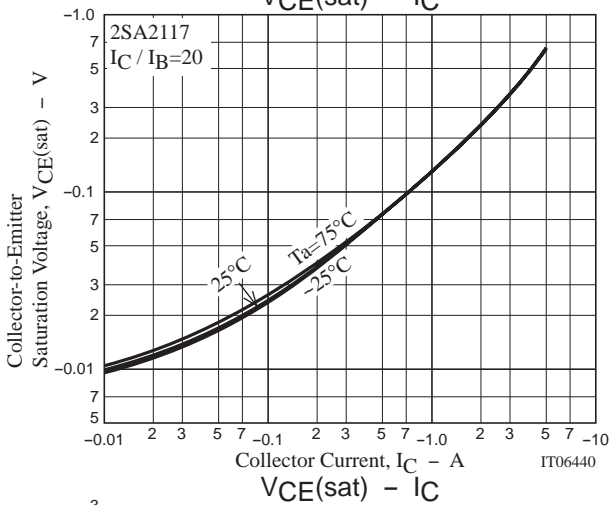
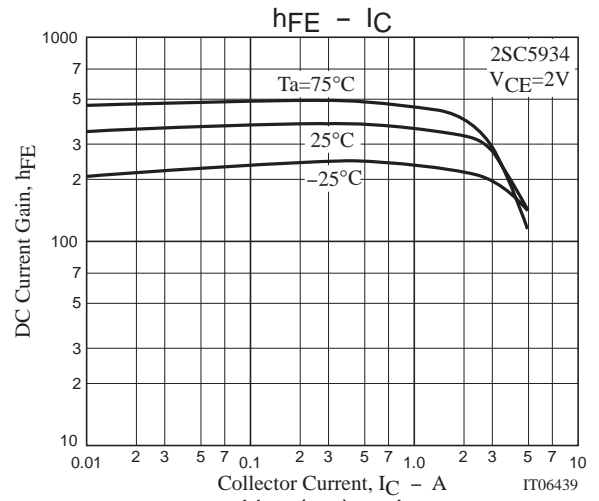
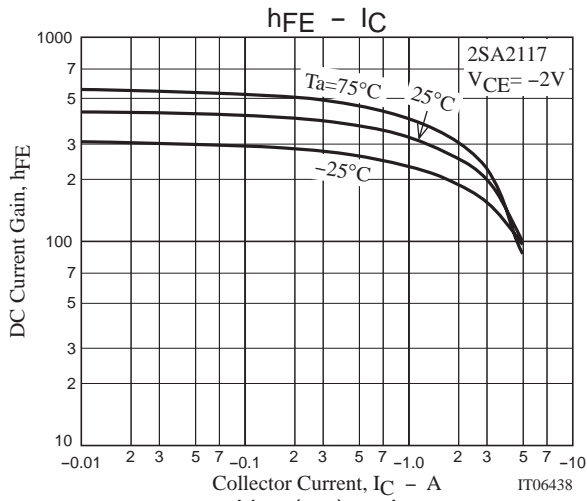
Switching Time Test Circuit



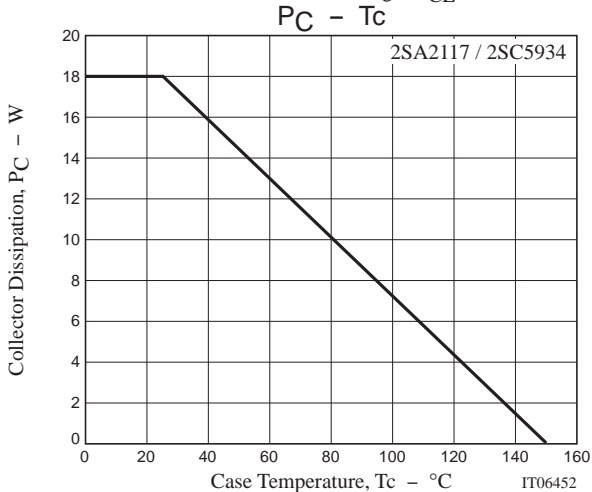
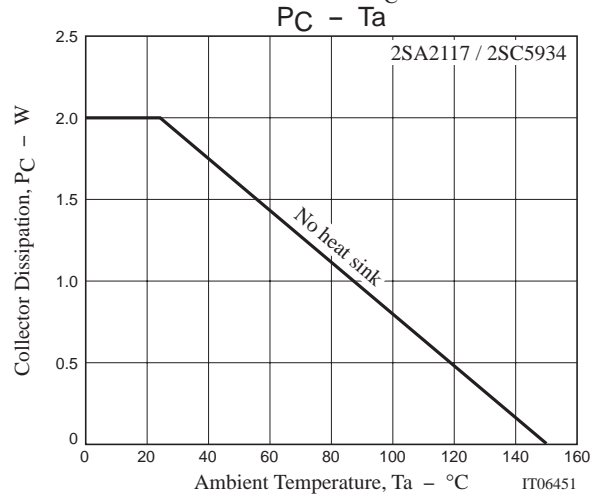
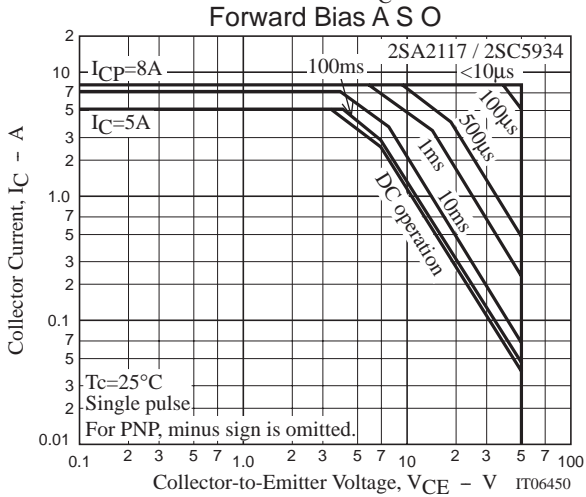
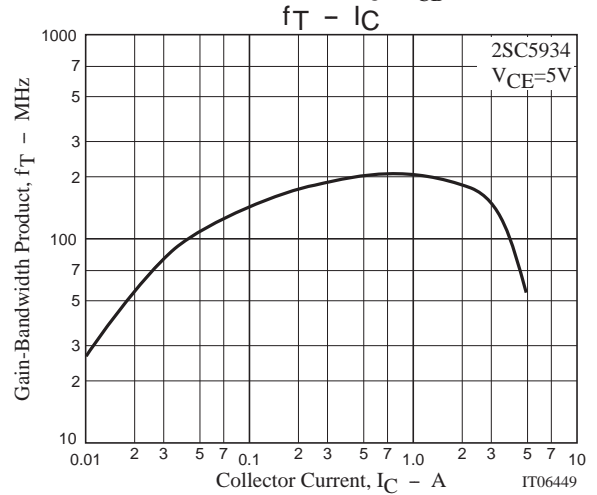
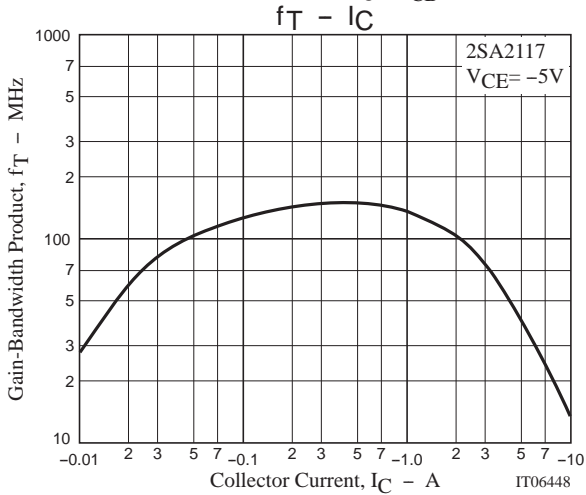
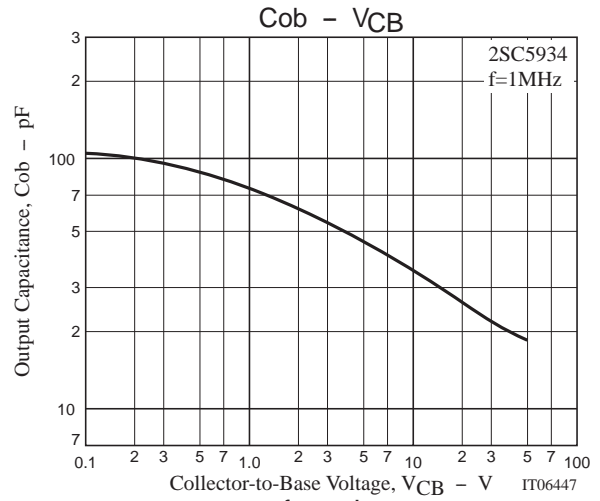
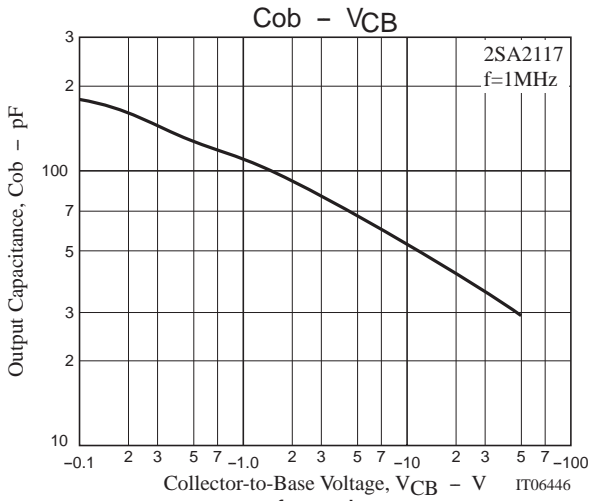
$I_C = 20I_{B1} = -20I_{B2} = 1A$
 (For PNP, minus sign is omitted.)



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