

Ordering number : ENN6587

PNP / NPN Epitaxial Planar Silicon Transistors



2SA2037 / 2SC5694

DC / DC Converter Applications

Applications

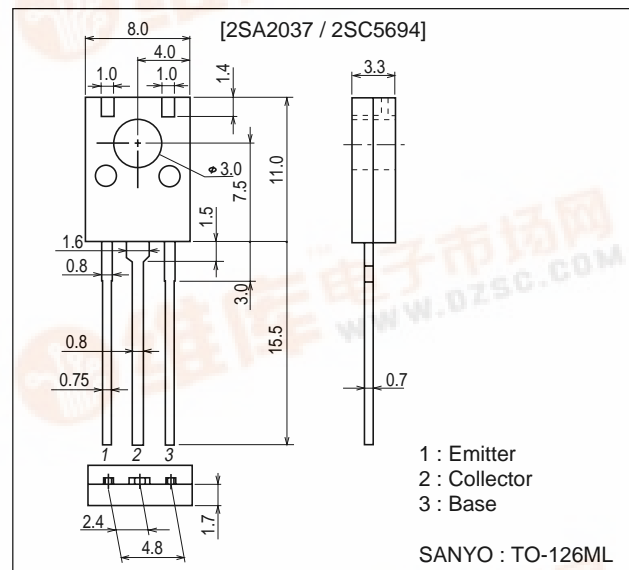
- Relay drivers, lamp drivers, motor drivers and printer drivers.

Features

- Adoption of MBIT process.
- Large current capacity.
- Low collector-to-emitter saturation voltage.
- High-speed switching.
- High allowable power dissipation.

Package Dimensions

unit : mm
2042B



Specifications

():2SA2037

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		(-7)	A
Collector Current (Pulse)	I _{CP}		(-10)	A
Base Current	I _B		(-1.2)	A
Collector Dissipation	P _C		1.2	W
		T _c =25°C	10	W
Junction Temperature	T _J		150	°C
Storage Temperature	T _{stg}		-55 to +150	°C

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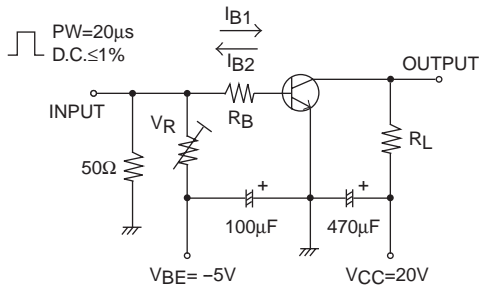


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Electrical Characteristics at $T_a=25^\circ\text{C}$

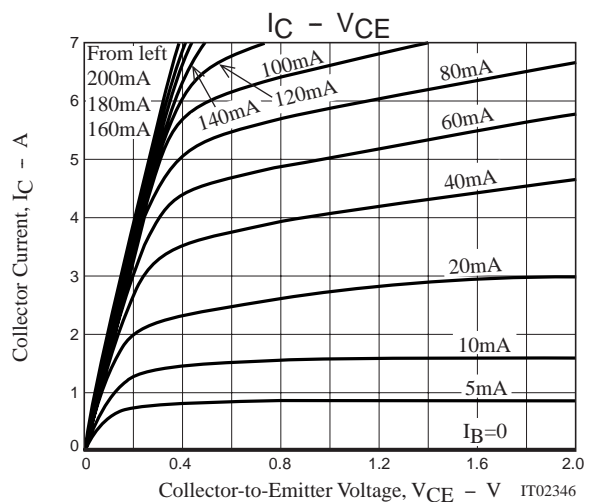
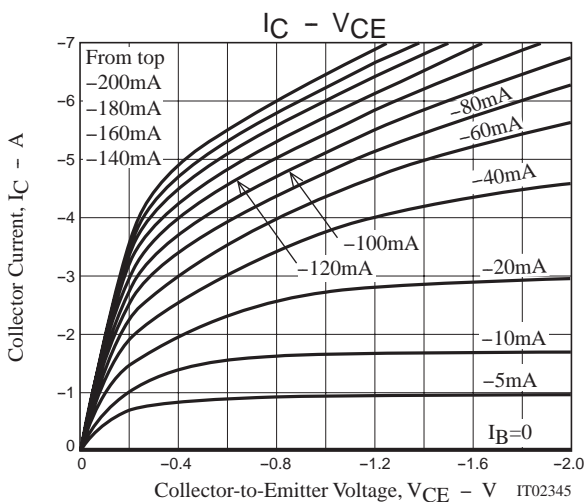
Parameter	Symbol	Conditions	Ratings			Unit
			min	typ	max	
Collector Cutoff Current	I_{CBO}	$V_{CB}=(-)40\text{V}, I_E=0$			(-)0.1	μA
Emitter Cutoff Current	I_{EBO}	$V_{EB}=(-)4\text{V}, I_C=0$			(-)0.1	μA
DC Current Gain	h_{FE}	$V_{CE}=(-)2\text{V}, I_C=(-)1\text{A}$	150		300	
Gain-Bandwidth Product	f_T	$V_{CE}=(-)10\text{V}, I_C=(-)500\text{mA}$		(290)330		MHz
Output Capacitance	C_{ob}	$V_{CB}=(-)10\text{V}, f=1\text{MHz}$		(50)28		pF
Collector-to-Emitter Saturation Voltage	$V_{CE(sat)}$	$I_C=(-)2.5\text{A}, I_B=(-)125\text{mA}$		(-150)130	(-300)260	mV
Base-to-Emitter Saturation Voltage	$V_{BE(sat)}$	$I_C=(-)2.5\text{A}, I_B=(-)125\text{mA}$		(-)0.85	(-)1.2	V
Collector-to-Base Breakdown Voltage	$V_{(BR)CBO}$	$I_C=(-)10\mu\text{A}, I_E=0$	(-50)60			V
Collector-to-Emitter Breakdown Voltage	$V_{(BR)CEO}$	$I_C=(-)1\text{mA}, R_{BE}=\infty$	(-)50			V
Emitter-to-Base Breakdown Voltage	$V_{(BR)EBO}$	$I_E=(-)10\mu\text{A}, I_C=0$	(-)6			V
Turn-On Time	t_{on}	See specified test circuit.		30		ns
Storage Time	t_{stg}	See specified test circuit.		(250)300		ns
Fall Time	t_f	See specified test circuit.		15		ns

Swicthing Time Test Circuit

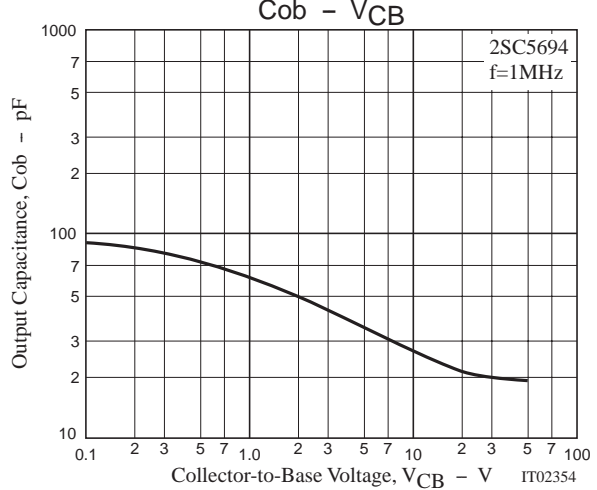
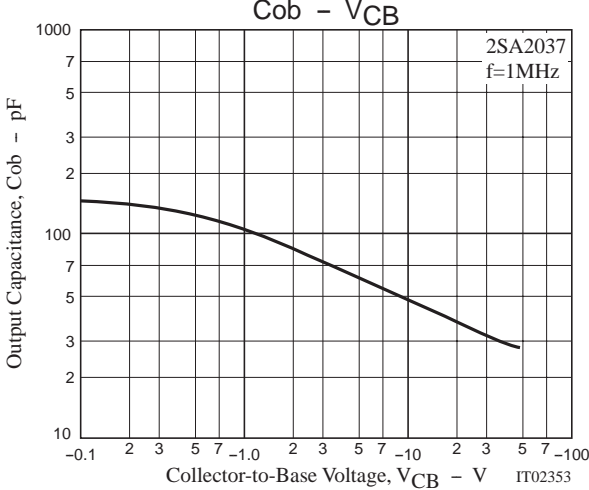
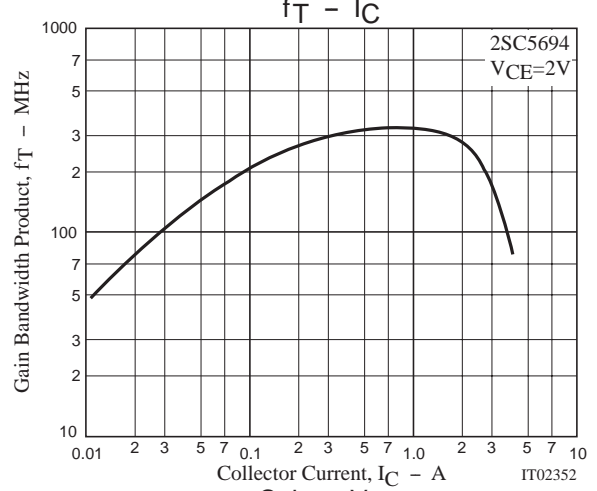
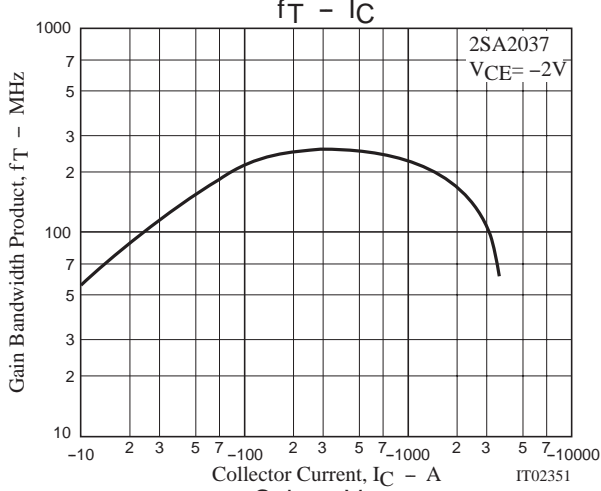
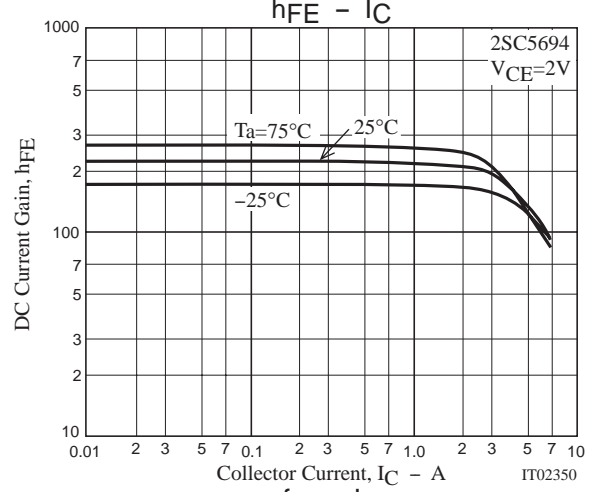
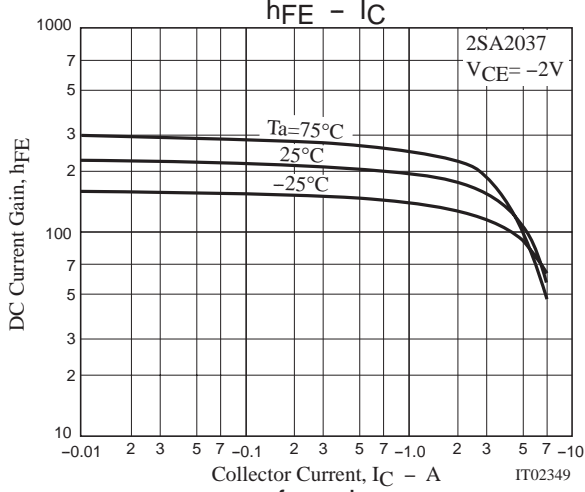
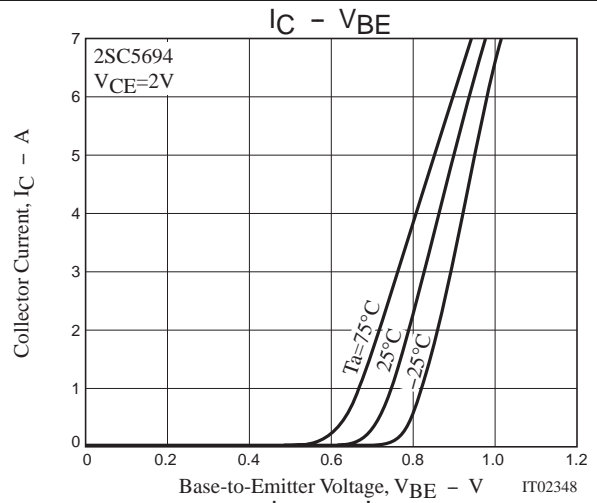
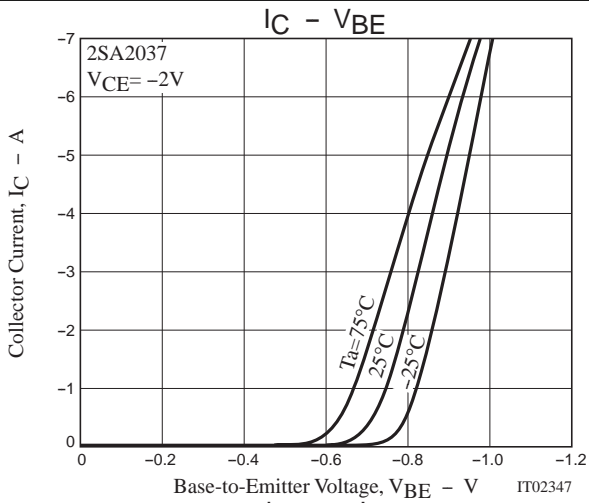


$$10I_{B1} = -10I_{B2} = I_C = 2\text{A}$$

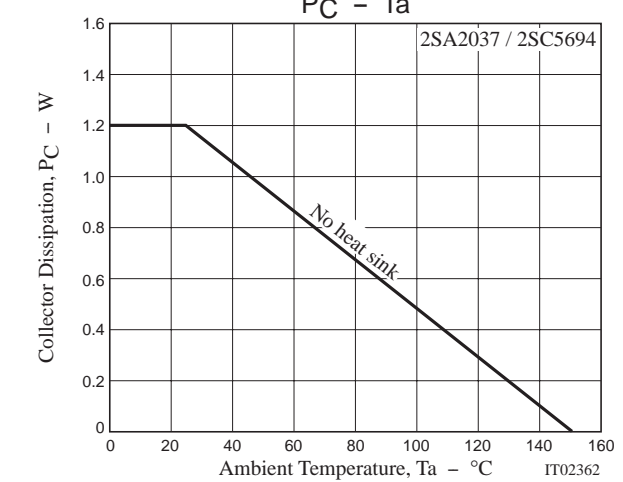
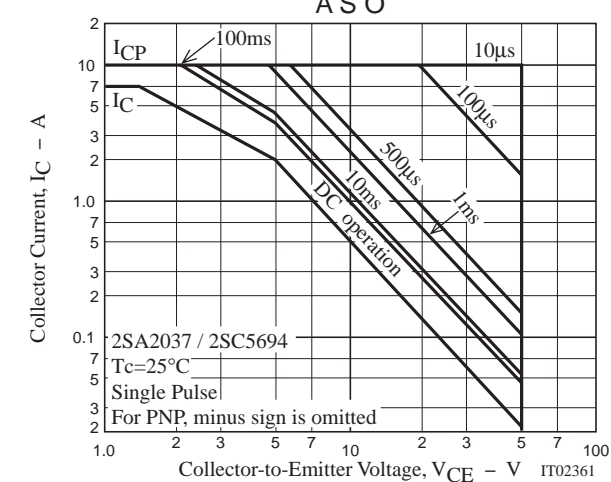
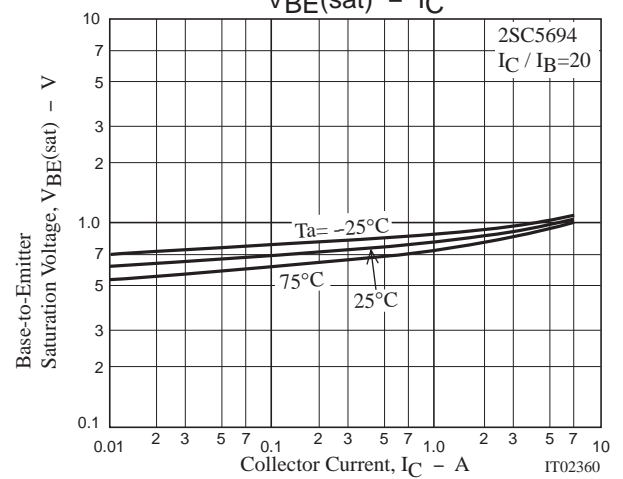
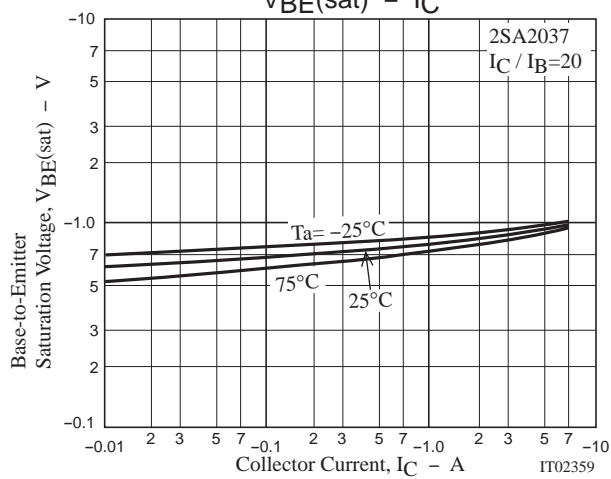
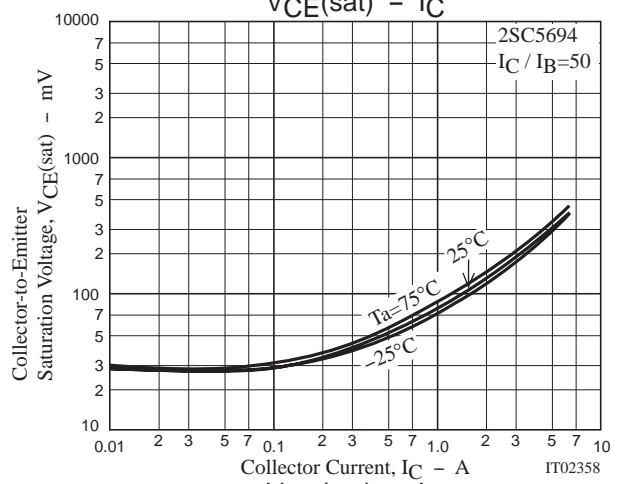
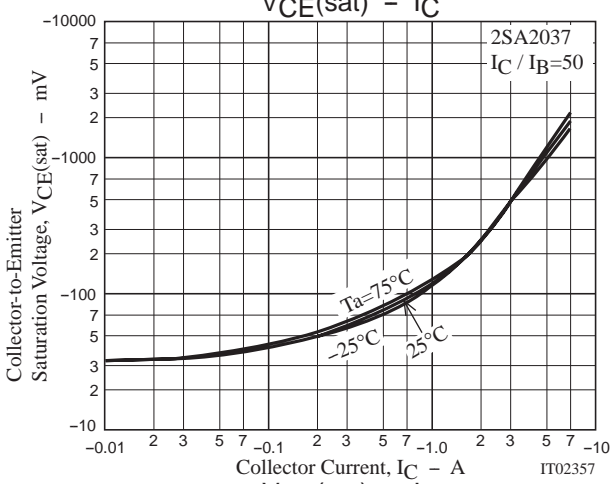
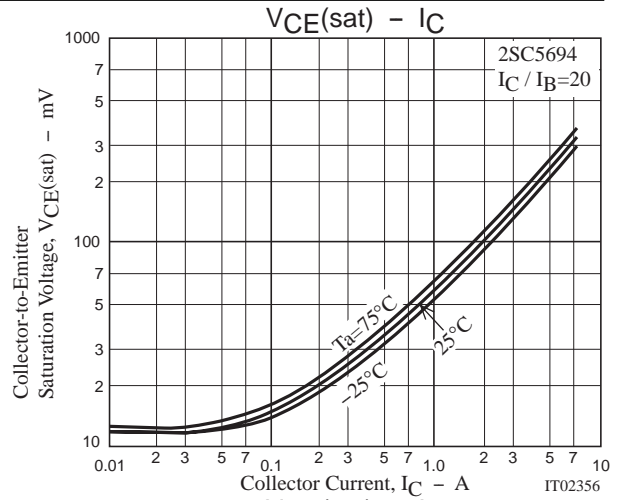
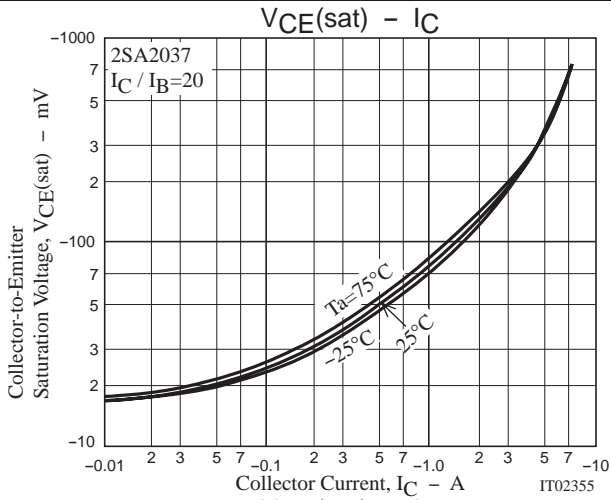
For PNP, the polarity is reversed.



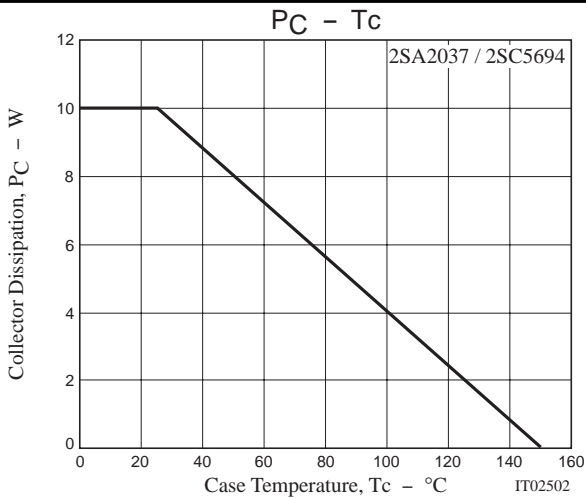
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