

**DC / DC Converter Applications****Applications**

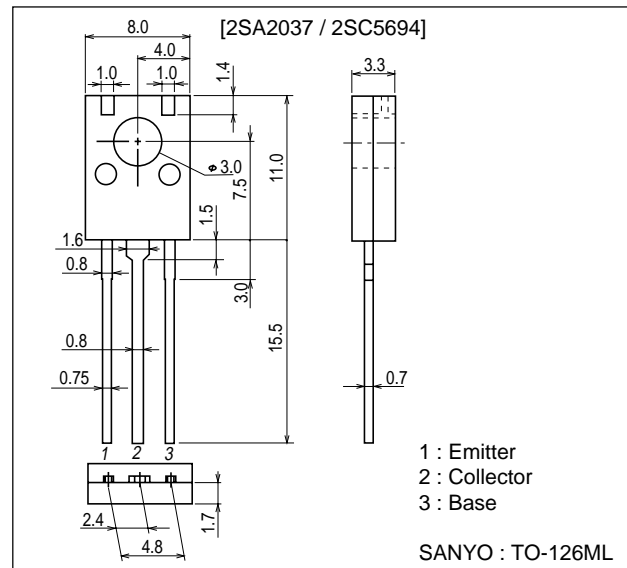
- Relay drivers, lamp drivers, motor drivers and printer drivers.

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 $T_a=25^\circ\text{C}$

Parameter	Symbol	Conditions	Ratings	Unit
Collector-to-Base Voltage	V_{CBO}		(-50)60	V
Collector-to-Emitter Voltage	V_{CEO}		(-50)	V
Emitter-to-Base Voltage	V_{EBO}		(-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
		$T_c=25^\circ\text{C}$	10	W
Junction Temperature	T_j		150	$^\circ\text{C}$
Storage Temperature	T_{stg}		-55 to +150	$^\circ\text{C}$

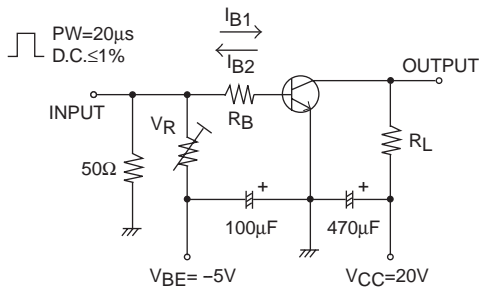
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Electrical Characteristics at Ta=25°C

Parameter	Symbol	Conditions	Ratings			Unit
			min	typ	max	
Collector Cutoff Current	ICBO	V _{CB} =(-)40V, I _E =0			(-)0.1	μA
Emitter Cutoff Current	IEBO	V _{EB} =(-)4V, I _C =0			(-)0.1	μA
DC Current Gain	h _{FE}	V _{CE} =(-)2V, I _C =(-)1A	150		300	
Gain-Bandwidth Product	f _T	V _{CE} =(-)10V, I _C =(-)500mA		(290)330		MHz
Output Capacitance	C _{ob}	V _{CB} =(-)10V, f=1MHz		(50)28		pF
Collector-to-Emitter Saturation Voltage	V _{CE(sat)}	I _C =(-)2.5A, I _B =(-)125mA		(-150)130	(-300)260	mV
Base-to-Emitter Saturation Voltage	V _{BE(sat)}	I _C =(-)2.5A, I _B =(-)125mA		(-)0.85	(-)1.2	V
Collector-to-Base Breakdown Voltage	V _{(BR)CBO}	I _C =(-)10μA, 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 =(-)10μA, 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

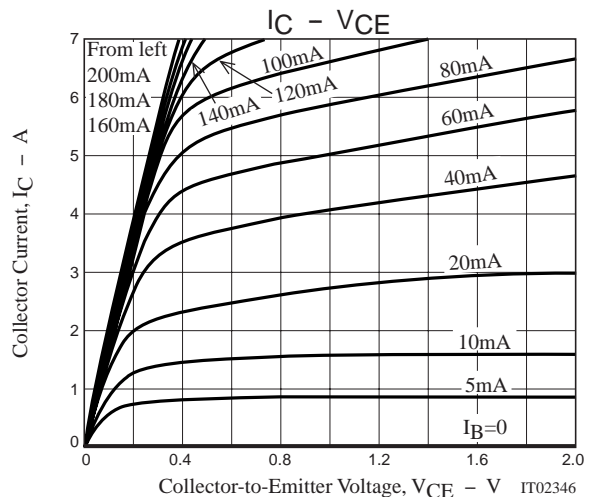
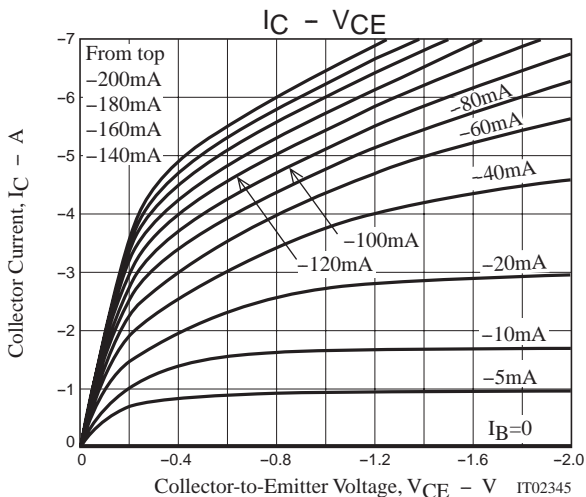
Swicthing Time Test Circuit

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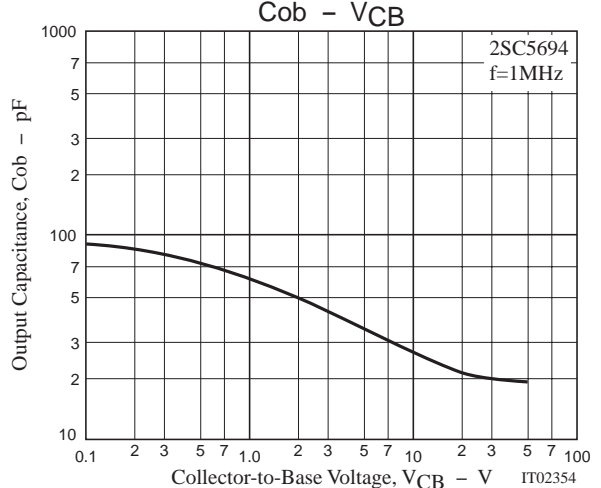
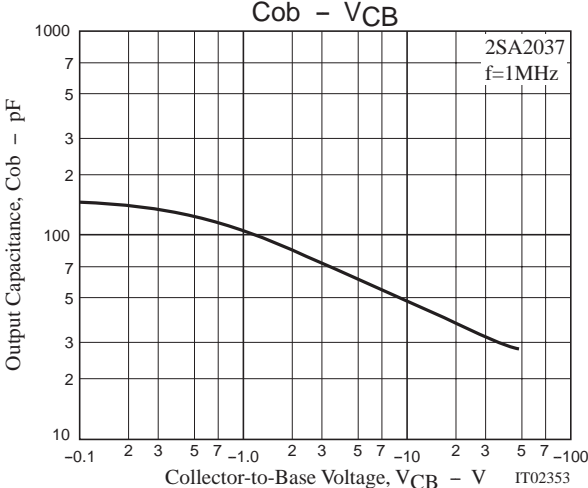
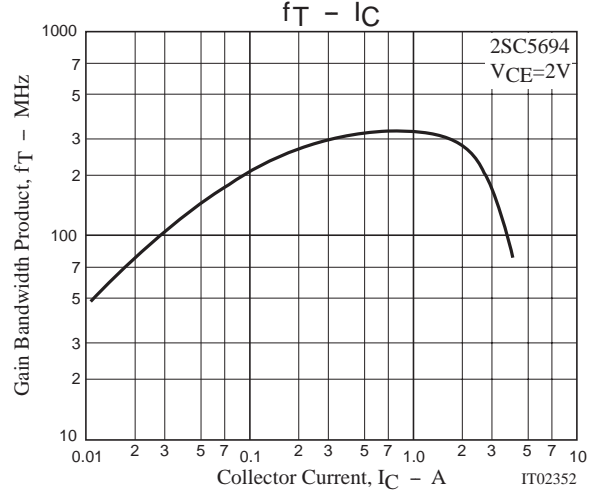
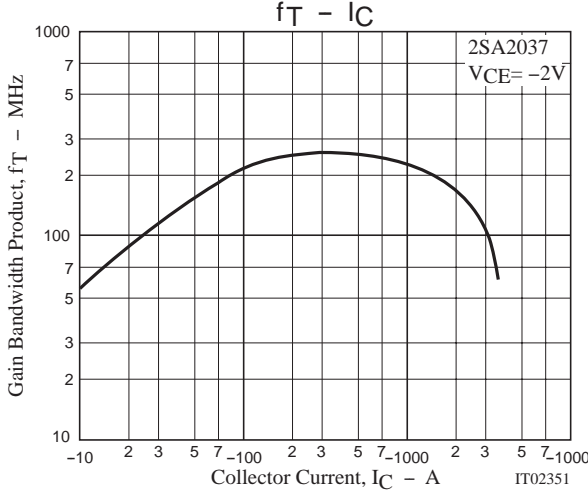
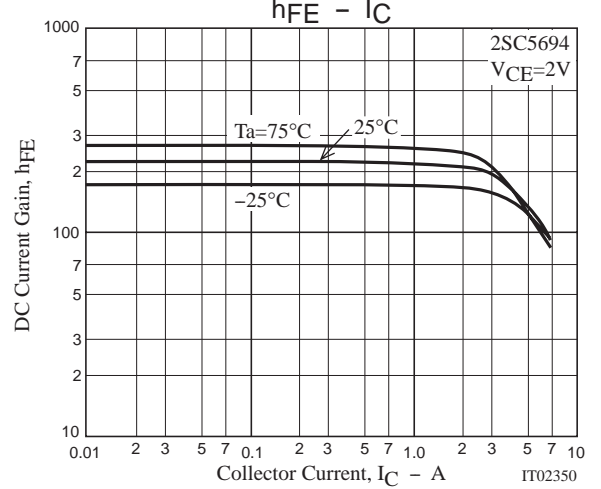
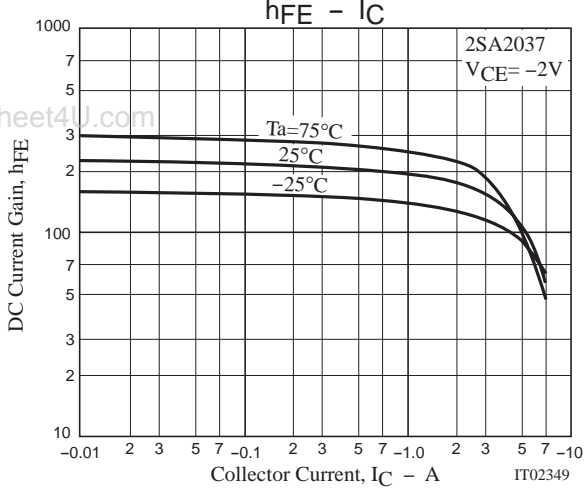
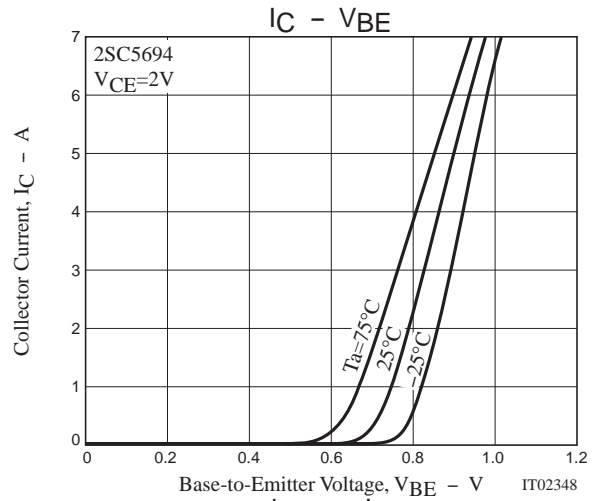
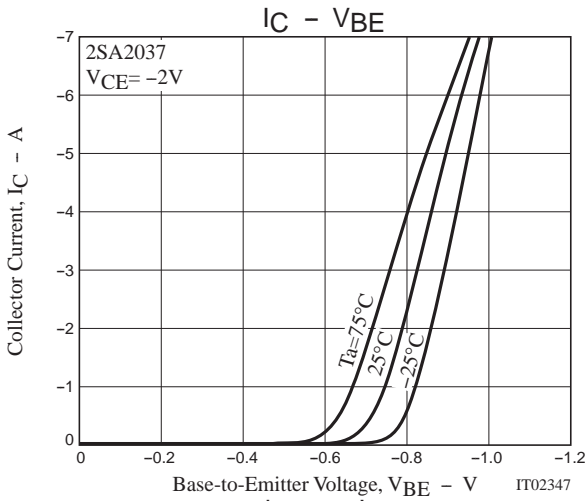


$10I_{B1} = -10I_{B2} = I_C = 2A$

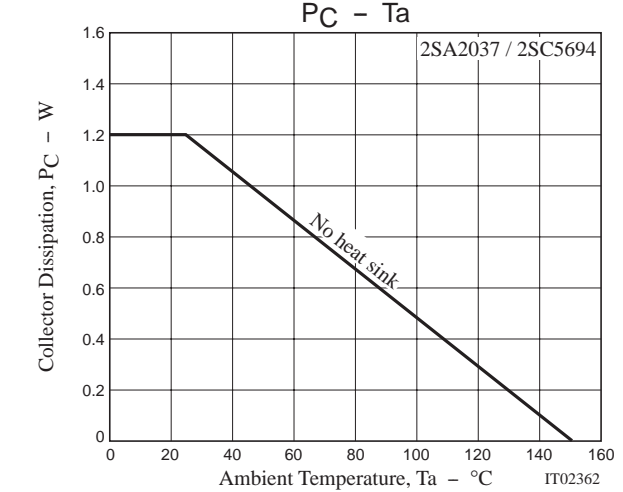
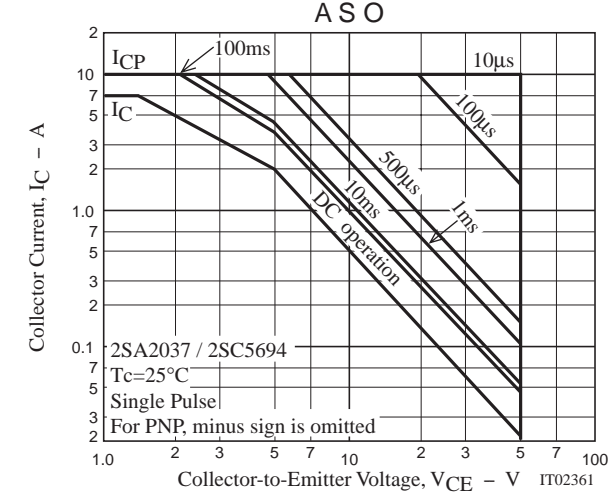
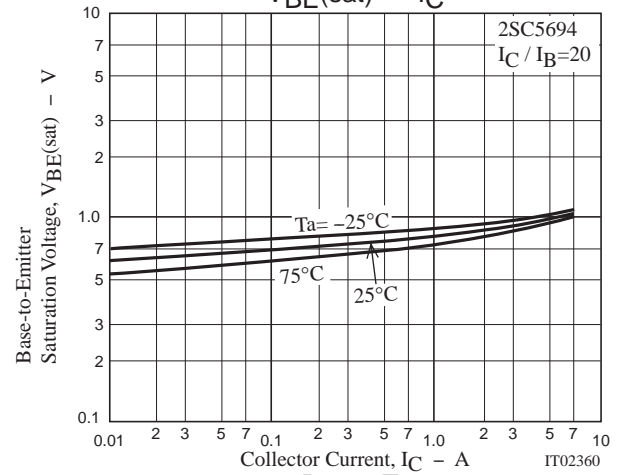
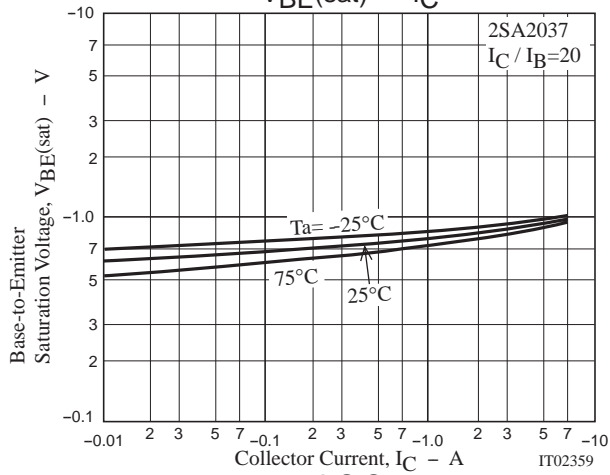
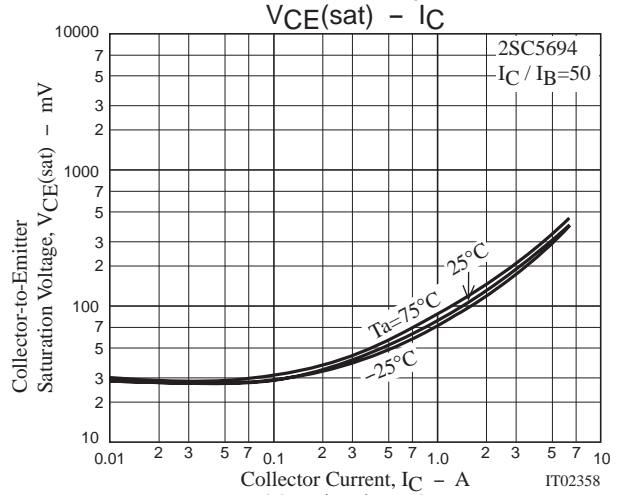
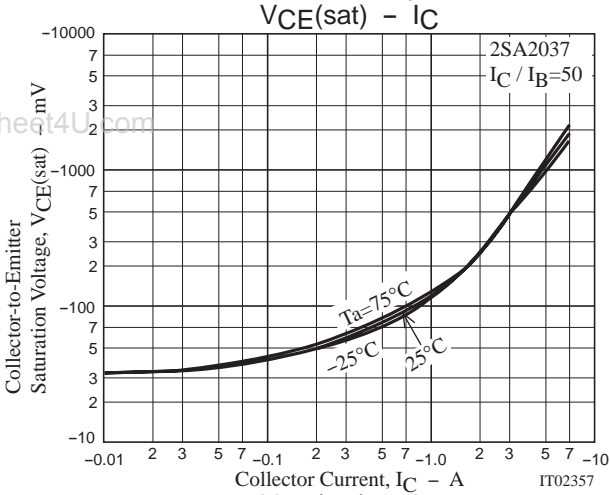
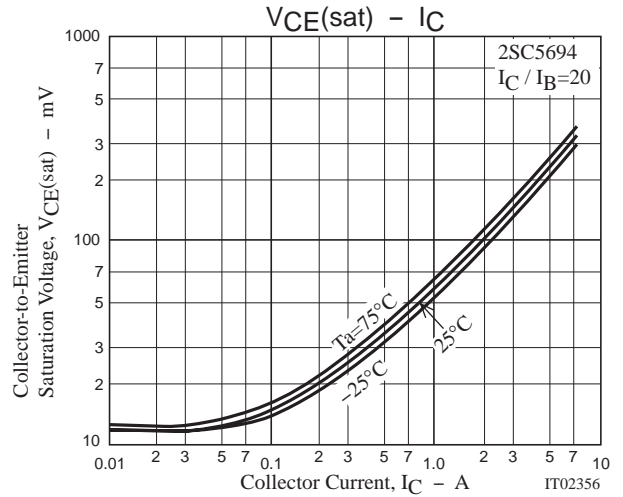
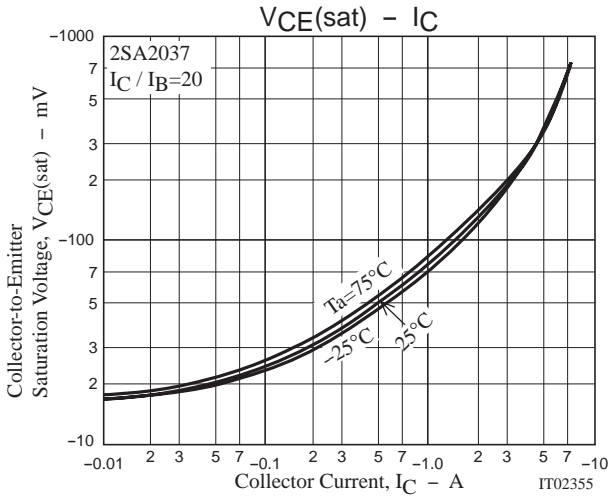
For PNP, the polarity is reversed.



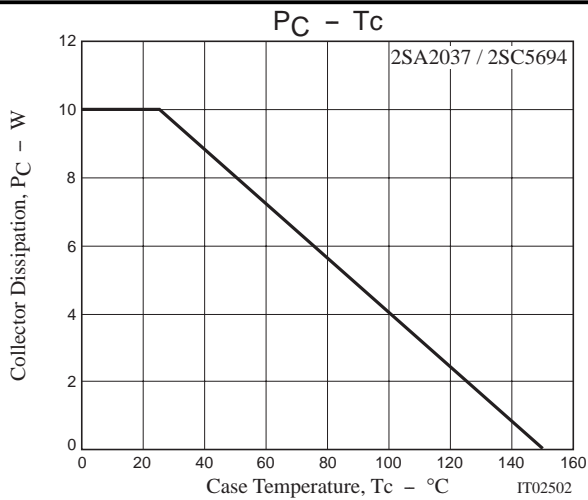
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