

Ordering number:ENN5613

PNP/NPN Epitaxial Planar Silicon Transistors



2SA1973/2SC5310

DC/DC Converter Applications

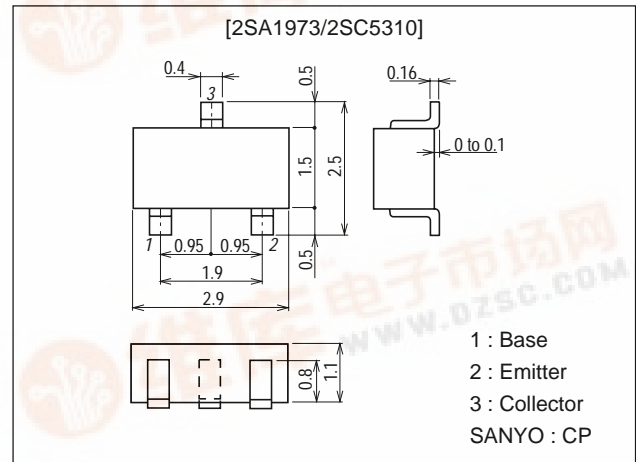
Features

- Adoption of FBET, MBIT processes.
- Large current capacitance.
- Low collector-to-emitter saturation voltage.
- High-speed switching.
- Ultrasmall package facilitates miniaturization in end products.

Package Dimensions

unit:mm

2018B



Specifications

() : 2SA1973

Absolute Maximum Ratings at Ta = 25°C

Parameter	Symbol	Conditions	Ratings	Unit
Collector-to-Base Voltage	V _{CB0}		(-)30	V
Collector-to-Emitter Voltage	V _{CEO}		(-)25	V
Emitter-to-Base Voltage	V _{EBO}		(-)6	V
Collector Current	I _C		(-)1	A
Collector Current (Pulse)	I _{CP}		(-)3	A
Base Current	I _B		(-)200	mA
Collector Dissipation	P _C	Mounted on a glass-epoxy board (20×30×1.6mm)	250	mW
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} =(-)20V, I _E =0			(-)0.1	μA
Emitter Cutoff Current	I _{EBO}	V _{EB} =(-)3V, I _C =0			(-)0.1	μA
DC Current Gain	h _{FE}	V _{CE} =(-)2V, I _C =(-)100mA	135*		400*	

* : The 2SA1973/2SC5310 are classified by 100mA h_{FE} as follows :

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Rank	5	6
h _{FE}	135 to 270	200 to 400

Marking : 2SA1973 : NS
2SC5310 : NN

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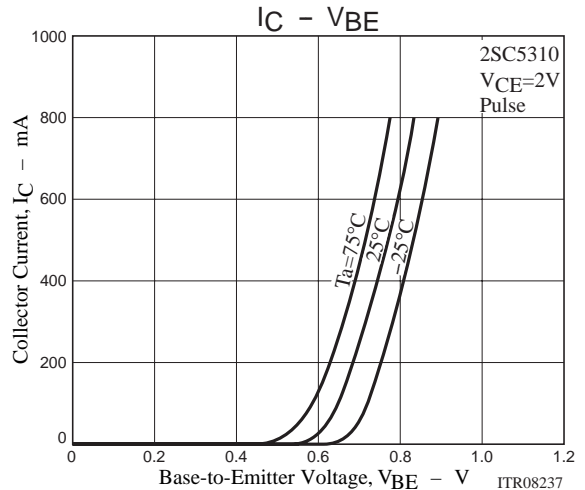
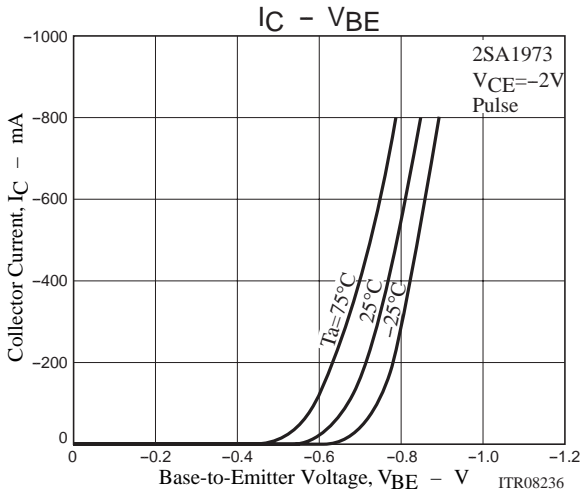
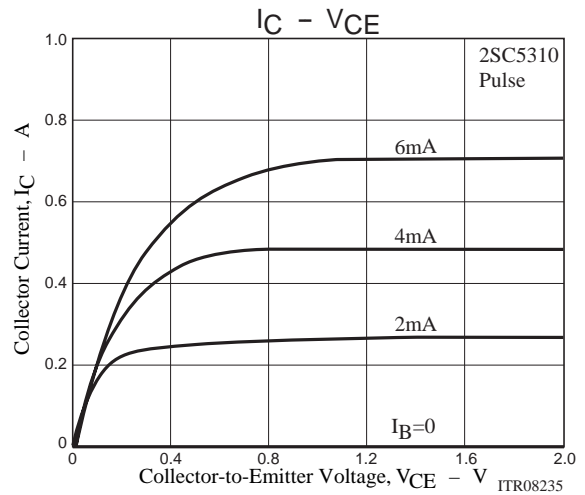
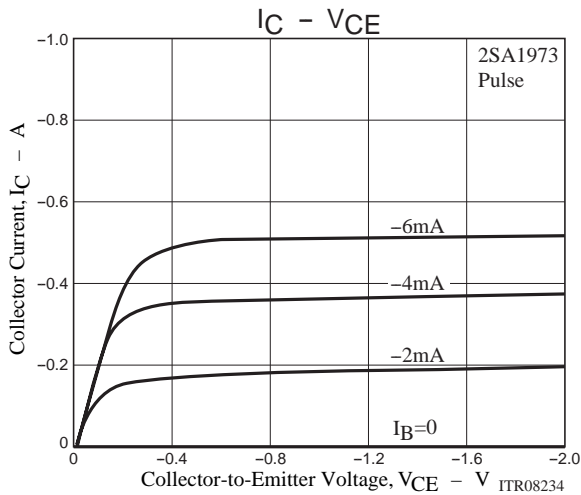
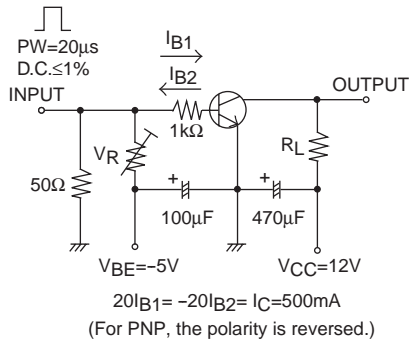


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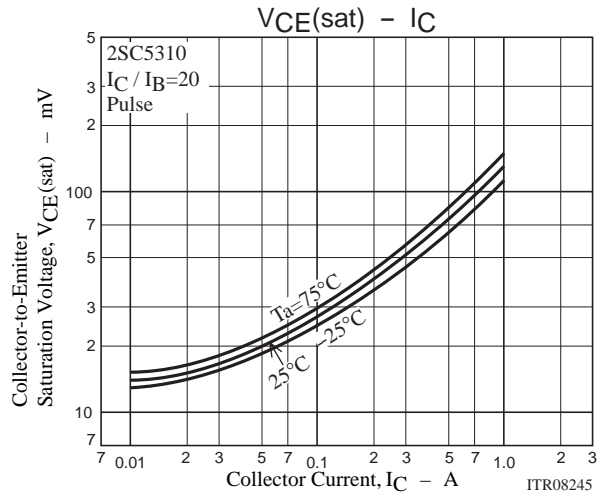
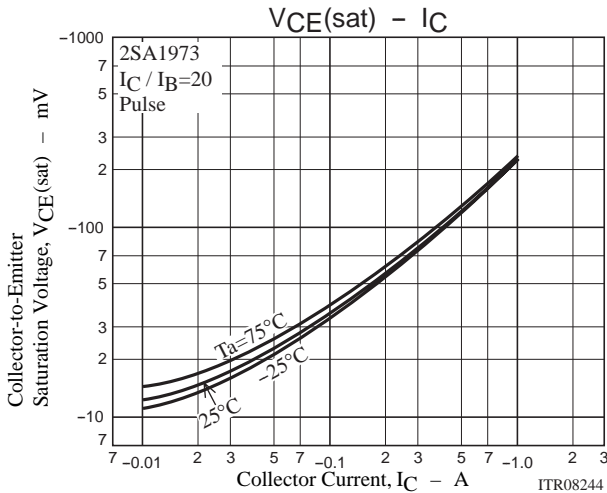
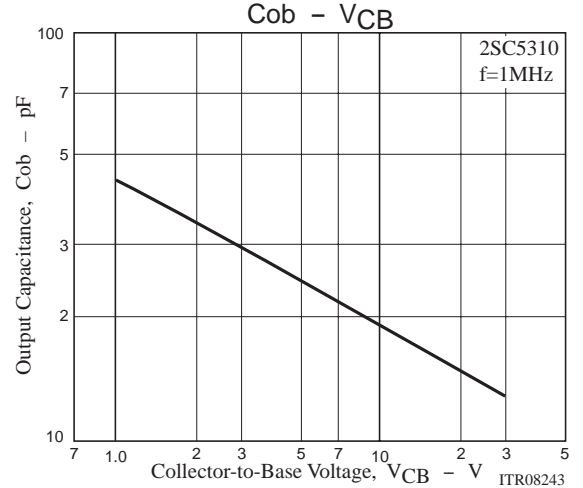
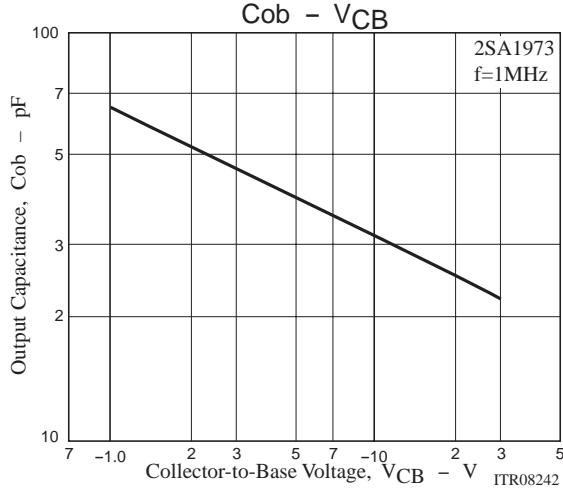
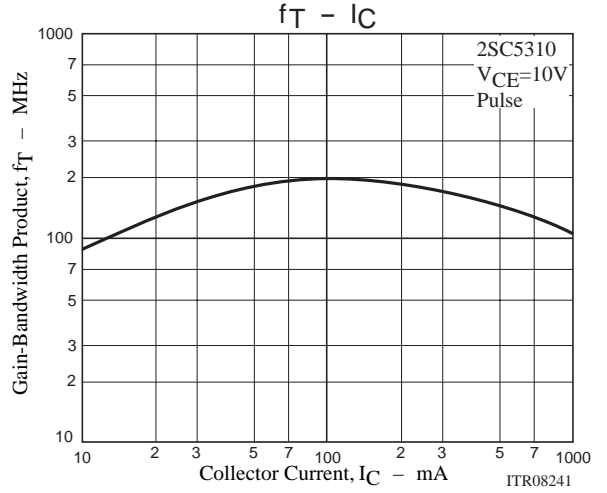
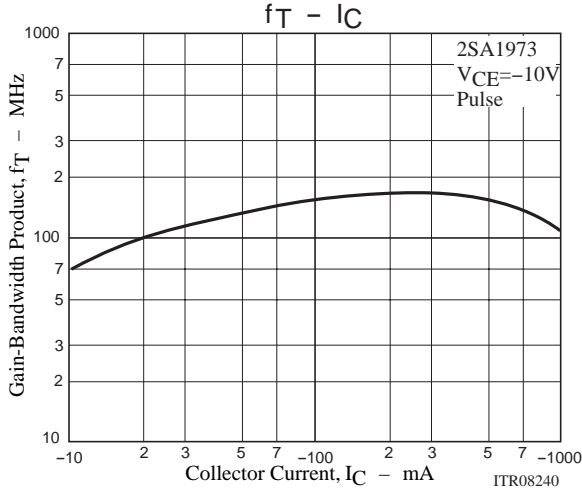
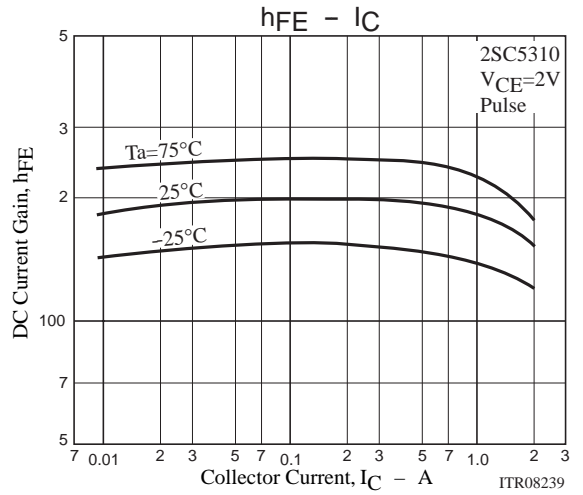
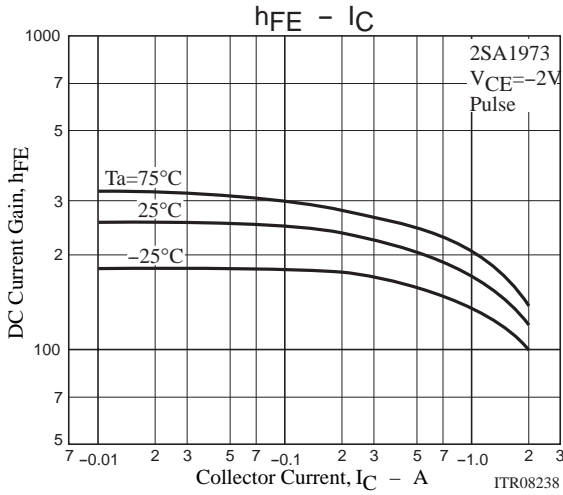
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Parameter	Symbol	Conditions	Ratings			Unit
			min	typ	max	
Gain-Bandwidth Product	f_T	$V_{CE}=(-)10V, I_C=(-)50mA$		150		MHz
Output Capacitance	C_{ob}	$V_{CB}=(-)10V, f=1MHz$		(32)19		pF
Collector-to-Emitter Saturation Voltage	$V_{CE(sat)}$	$I_C=(-)500mA, I_B=(-)25mA$		(-150)	(-300)	mV
				100	200	mV
Base-to-Emitter Saturation Voltage	$V_{BE(sat)}$	$I_C=(-)500mA, I_B=(-)25mA$		(-)0.85	(-)1.2	V
Collector-to-Base Breakdown Voltage	$V_{(BR)CBO}$	$I_C=(-)10\mu A, I_E=0$	(-)30			V
Collector-to-Emitter Breakdown Voltage	$V_{(BR)CEO}$	$I_C=(-)1mA, R_{BE}=\infty$	(-)25			V
Emitter-to-Base Breakdown Voltage	$V_{(BR)EBO}$	$I_E=(-)10\mu A, I_C=0$	(-)6			V
Turn-ON Time	t_{on}	See specified Test Circuit		(60)60		ns
Storage Time	t_{stg}	See specified Test Circuit		(350)		ns
				500		ns
Fall Time	t_f	See specified Test Circuit		(25)25		ns

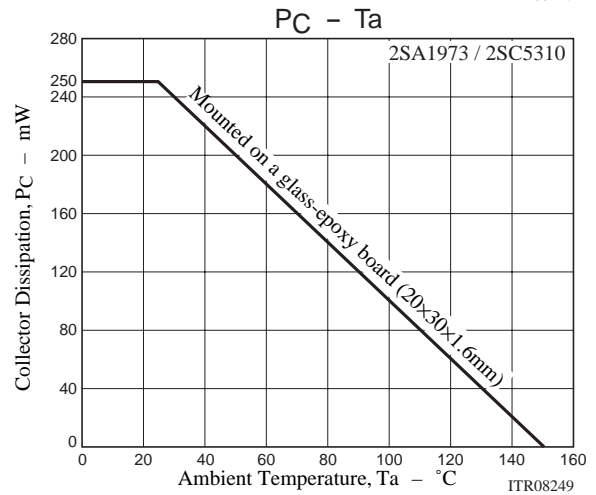
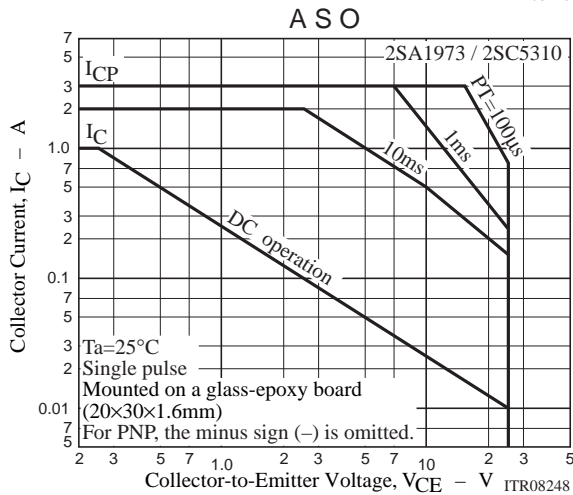
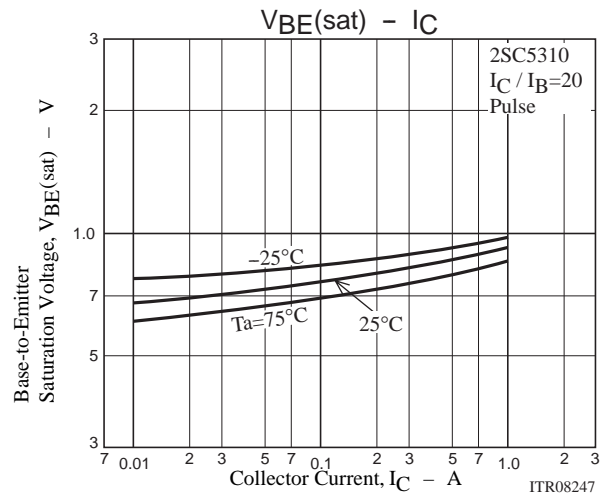
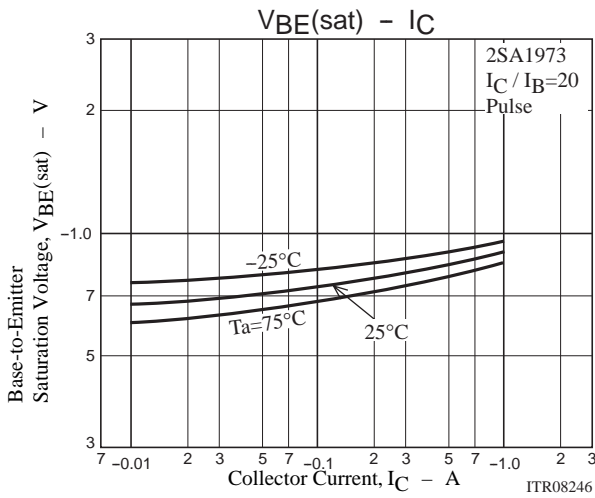
Switching Time Test Circuit



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