



SANYO Semiconductors

## DATA SHEET

# 2SA1730

 — PNP Epitaxial Planar Silicon Transistor  
**High-Speed Switching Applications**

## Features

- Adoption of FBET, MBIT processes.
- Large current capacity.
- Low collector-to-emitter saturation voltage.
- High-speed switching.
- Small-sized package.

## Specifications

**Absolute Maximum Ratings** at  $T_a=25^\circ\text{C}$ 

Parameter	Symbol	Conditions	Ratings	Unit
Collector-to-Base Voltage	$V_{CB0}$		-50	V
Collector-to-Emitter Voltage	$V_{CEO}$		-40	V
Emitter-to-Base Voltage	$V_{EBO}$		-5	V
Collector Current	$I_C$		-3	A
Collector Current (Pulse)	$I_{CP}$		-6	A
Collector Dissipation	$P_C$	Mounted on a ceramic board (250mm <sup>2</sup> ×0.8mm)	1.5	W
Junction Temperature	$T_j$		150	°C
Storage Temperature	$T_{stg}$		-55 to +150	°C

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

Parameter	Symbol	Conditions	Ratings			Unit
			min	typ	max	
Collector Cutoff Current	$I_{CBO}$	$V_{CB}=-40\text{V}, I_E=0\text{A}$			-1	$\mu\text{A}$
Emitter Cutoff Current	$I_{EBO}$	$V_{EB}=-3\text{V}, I_C=0\text{A}$			-1	$\mu\text{A}$

Marking : AH

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Parameter	Symbol	Conditions	Ratings			Unit
			min	typ	max	
DC Current Gain	$h_{FE1}$	$V_{CE}=-2V, I_C=-500mA$	70*		280*	
	$h_{FE2}$	$V_{CE}=-2V, I_C=-3A$	25			
Gain-Bandwidth Product	$f_T$	$V_{CE}=-2V, I_C=-500mA$		300		MHz
Output Capacitance	$C_{ob}$	$V_{CB}=-10V, f=1MHz$		35		pF
Collector-to-Emitter Saturation Voltage	$V_{CE(sat)}$	$I_C=-1.5A, I_B=-75mA$		-0.3	-0.8	V
Base-to-Emitter Saturation Voltage	$V_{BE(sat)}$	$I_C=-1.5A, I_B=-75mA$		-0.95	-1.3	V
Collector-to-Base Breakdown Voltage	$V_{(BR)CBO}$	$I_C=-10\mu A, I_E=0A$	-50			V
Collector-to-Emitter Breakdown Voltage	$V_{(BR)CEO}$	$I_C=-1mA, R_{BE}=\infty$	-40			V
Emitter-to-Base Breakdown Voltage	$V_{(BR)EBO}$	$I_E=-10\mu A, I_C=0A$	-5			V
Turn-ON Time	$t_{on}$	See specified Test Circuit.		50	100	ns
Storage Time	$t_{stg}$	See specified Test Circuit.		120	220	ns
Turn-OFF Time	$t_{off}$	See specified Test Circuit.		150	300	ns

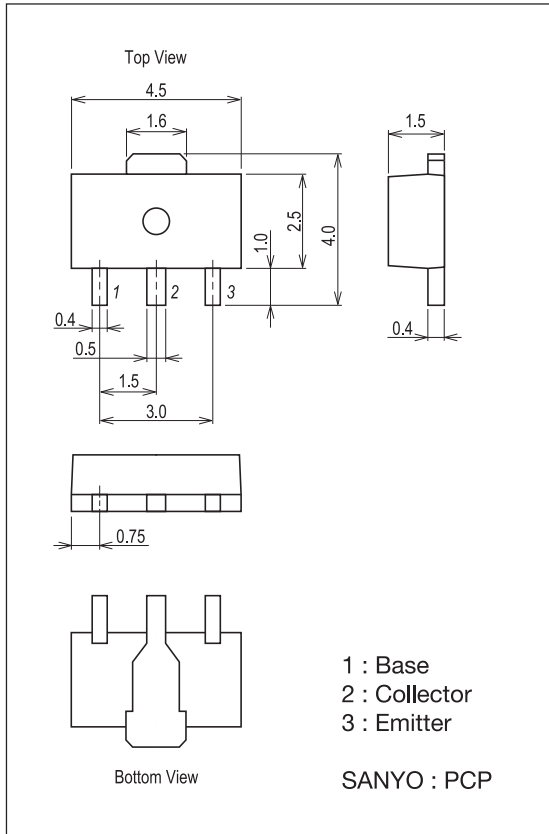
\*: The 2SA1730 is classified by 500mA  $h_{FE}$  as follows:

Rank	Q	R	S
$h_{FE}$	70 to 140	100 to 200	140 to 280

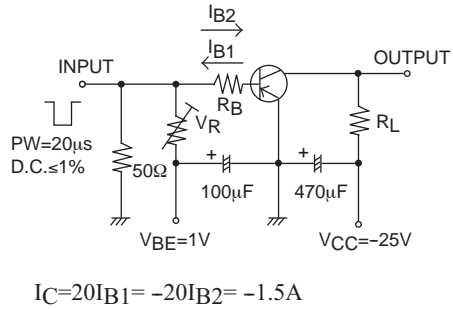
**Package Dimensions**

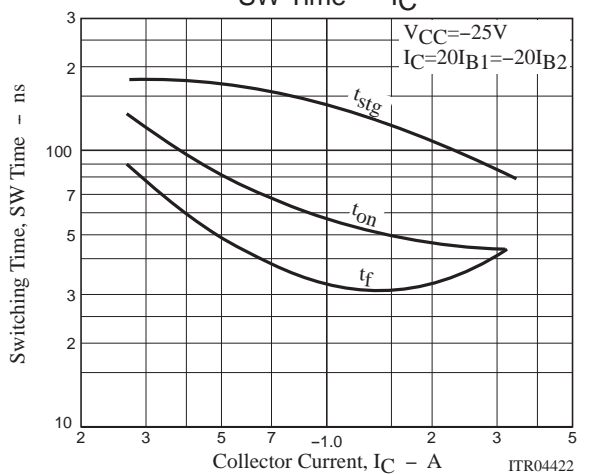
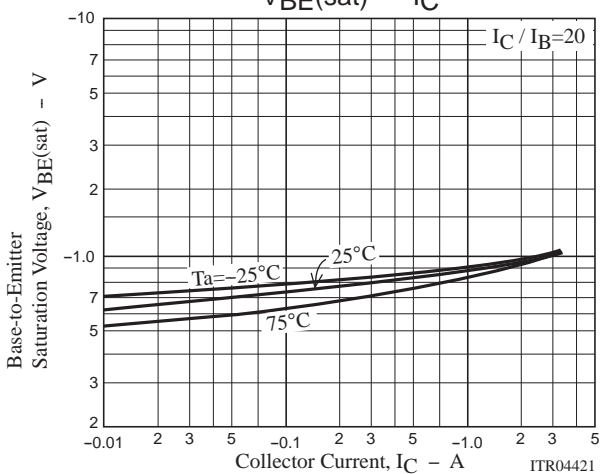
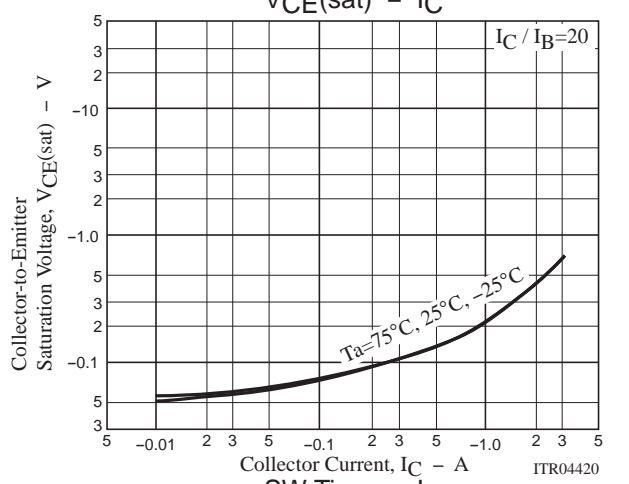
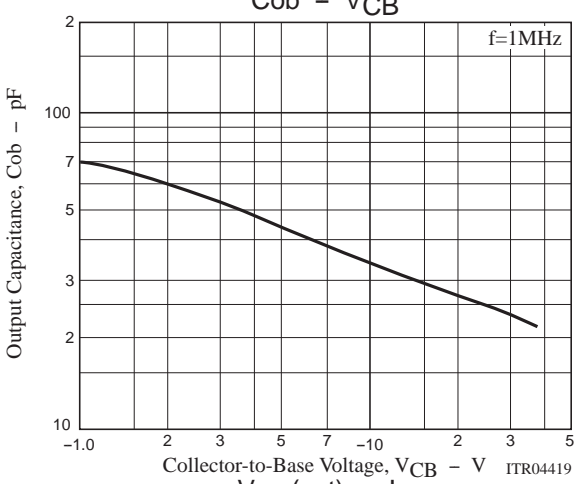
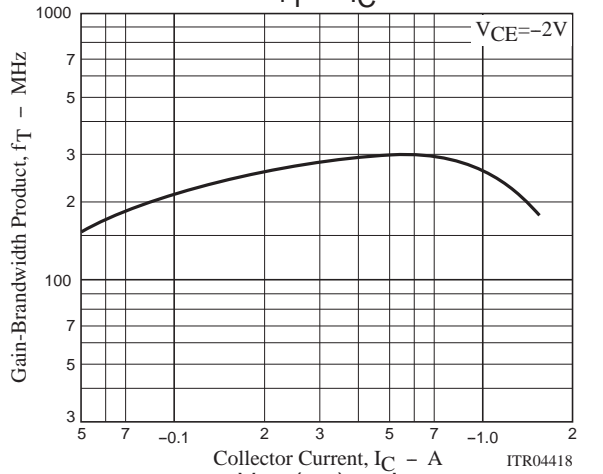
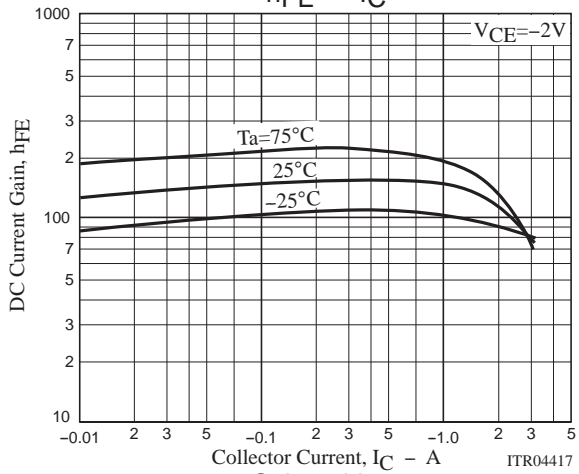
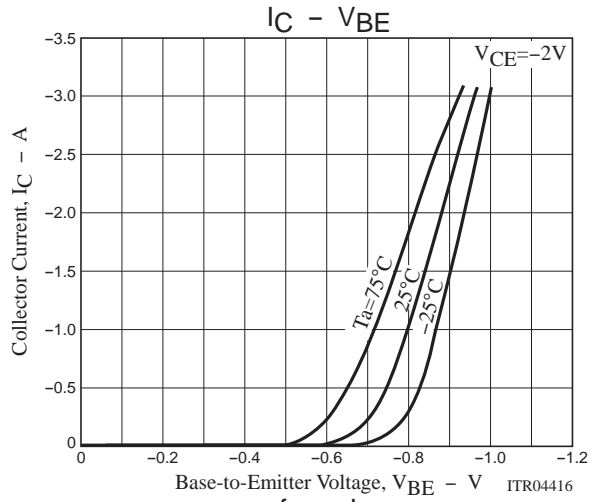
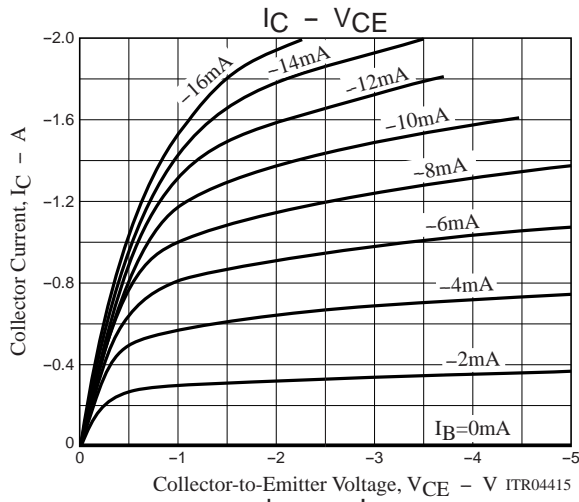
unit : mm (typ)

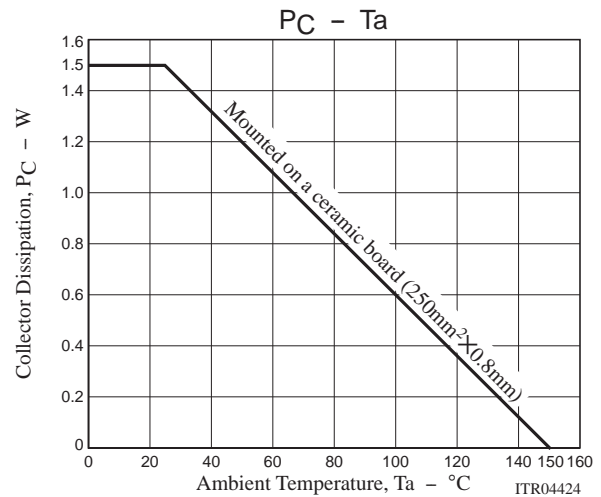
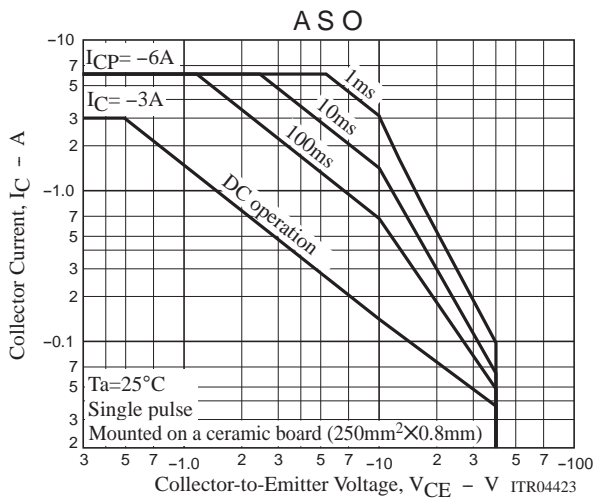
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**Switching Time Test Circuit**







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