

**2SA1729**

High-Speed Switching Applications

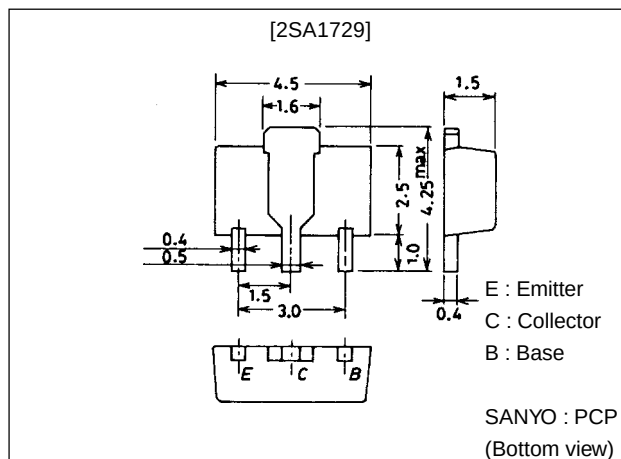
Features

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

Package Dimensions

unit:mm

2038



Specifications

Absolute Maximum Ratings at Ta = 25°C

Parameter	Symbol	Conditions	Ratings	Unit
Collector-to-Base Voltage	V_{CBO}		-50	V
Collector-to-Emitter Voltage	V_{CEO}		-40	V
Emitter-to-Base Voltage	V_{EBO}		-5	V
Collector Current	I_C		-1.5	A
Collector Current (Pulse)	I_{CP}		-3	A
Collector Dissipation	P_C	Mounted on ceramic board (250mm ² ×0.8mm)	1.3	W
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_{CBO}	$V_{CB} = -40V, I_E = 0$			-1	μA
Emitter Cutoff Current	I_{EBO}	$V_{EB} = -3V, I_C = 0$			-1	μA
DC Current Gain	h_{FE1}	$V_{CE} = -2V, I_C = -100mA$	70*		280*	
	h_{FE2}	$V_{CE} = -2V, I_C = -1.5A$	25			
Gain-Bandwidth Product	f_T	$V_{CE} = -2V, I_C = -100mA$		300		MHz
Output Capacitance	C_{ob}	$V_{CB} = -10V, f = 1MHz$		18		pF
Collector-to-Emitter Saturation Voltage	$V_{CE(sat)}$	$I_C = -800mA, I_B = -40mA$		-0.3	-0.8	V
Base-to-Emitter Saturation Voltage	$V_{BE(sat)}$	$I_C = -800mA, I_B = -40mA$		-0.9	-1.3	V

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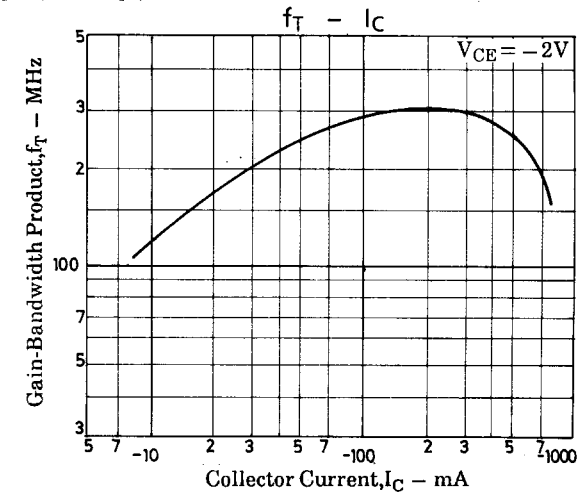
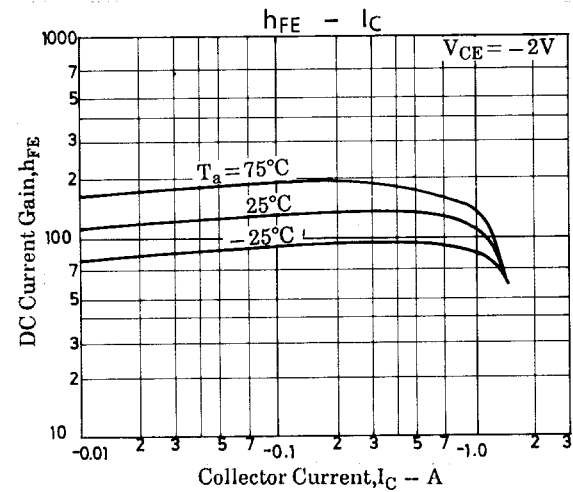
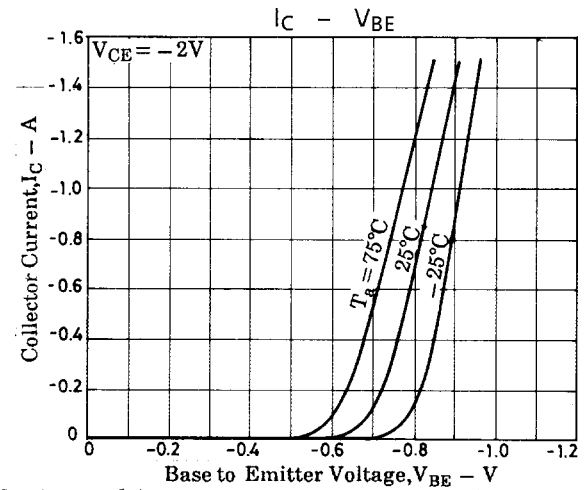
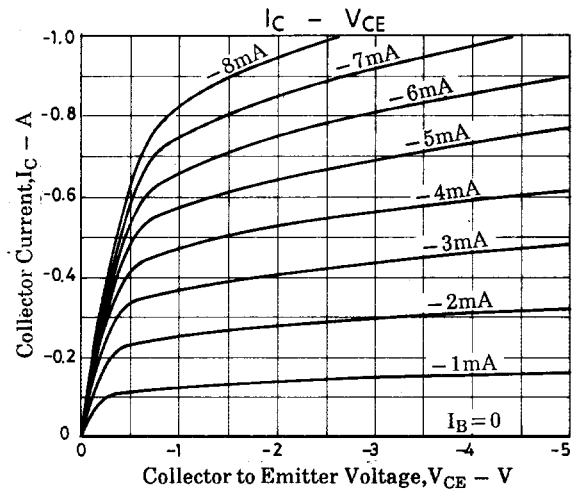
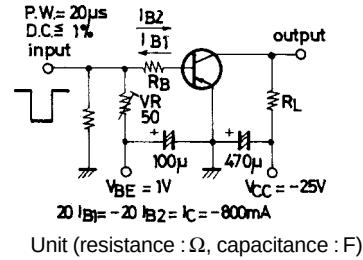
Parameter	Symbol	Conditions	Ratings			Unit
			min	typ	max	
Collector-to-Base Breakdown Voltage	$V_{(BR)CBO}$	$I_C = -10\mu A, I_E = 0$	-50			V
Collector-to-Emitter Saturation Voltage	$V_{(BR)CEO}$	$I_C = -1mA, R_{BE} = \infty$	-40			V
Emitter-to-Base Breakdown Voltage	$V_{(BR)EBO}$	$I_E = -10\mu A, I_C = 0$	-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 2SA1729 is classified by 100mA h_{FE} as follows :

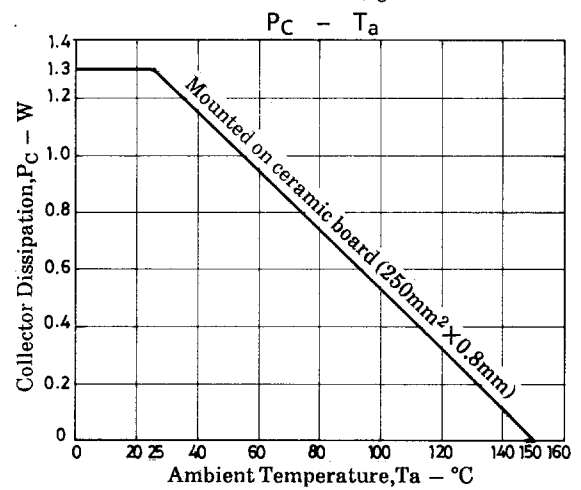
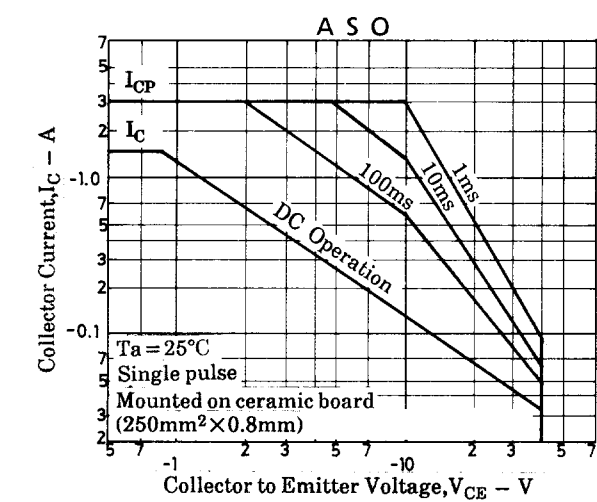
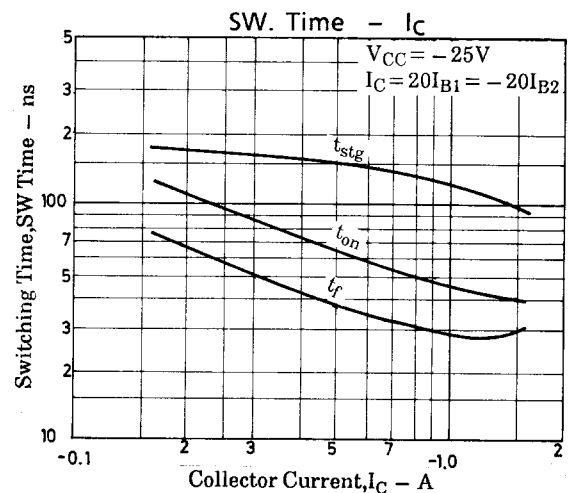
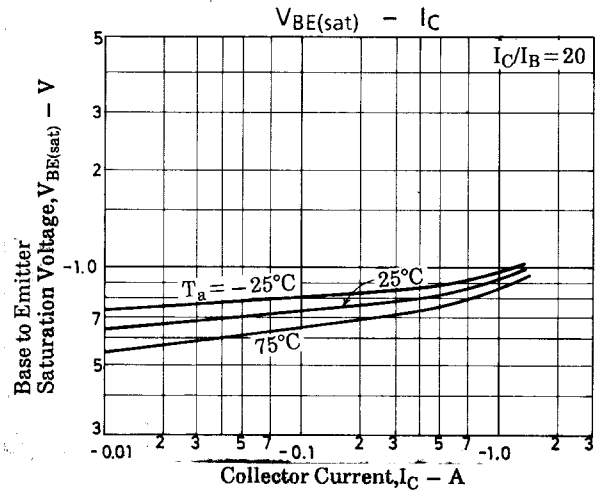
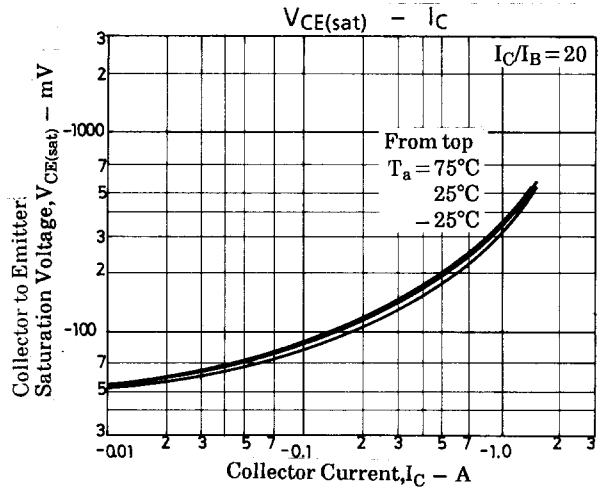
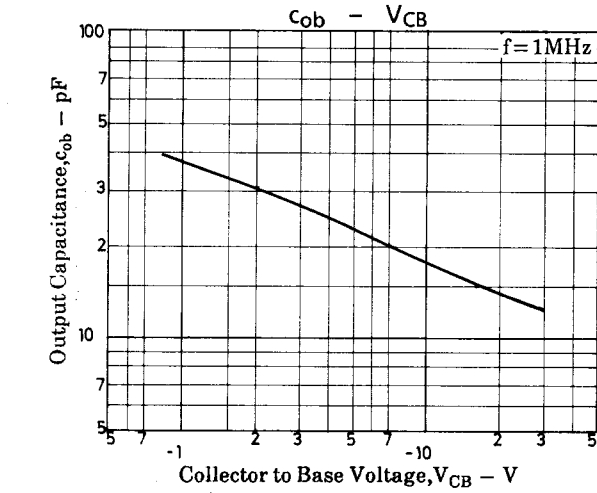
70	Q	140	100	R	200	140	S	280
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Marking : AG
 h_{FE} rank : Q, R, S

Switching Time Test Circuit



2SA1729



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