



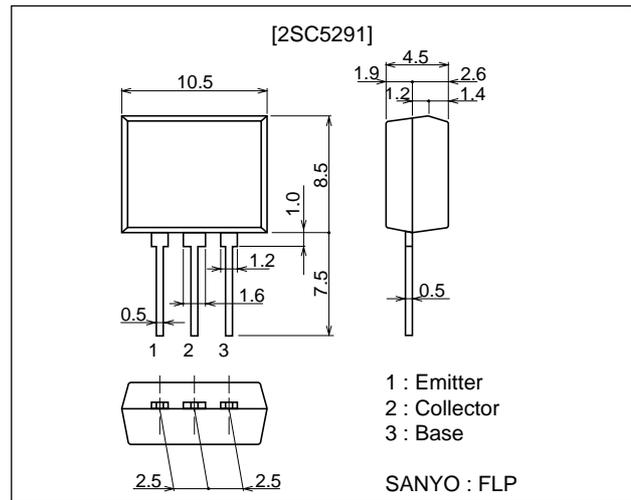
High-Voltage Switching Applications

Features

- Adoption of FBET, MBIT processes.
- Large current capacity.
- Can be provided in taping.
- 9.5mm onboard mounting height.

Package Dimensions

unit : mm
2084B



Specifications

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

Parameter	Symbol	Conditions	Ratings	Unit
Collector-to-Base Voltage	V_{CB0}		180	V
Collector-to-Emitter Voltage	V_{CEO}		160	V
Emitter-to-Base Voltage	V_{EBO}		6	V
Collector Current	I_C		1.5	A
Collector Current (Pulse)	I_{CP}		2.5	A
Base Current	I_B		300	mA
Collector Dissipation	P_C		1.5	W
Junction Temperature	T_J		150	$^\circ\text{C}$
Storage Temperature	T_{stg}		-55 to +150	$^\circ\text{C}$

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

Parameter	Symbol	Conditions	Ratings			Unit
			min	typ	max	
Collector Cutoff Current	I_{CBO}	$V_{CB}=120\text{V}, I_E=0$			1.0	μA
Emitter Cutoff Current	I_{EBO}	$V_{EB}=4\text{V}, I_C=0$			1.0	μA

Continued on next page.

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2SC5291

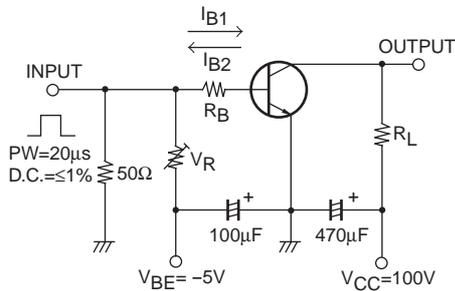
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Parameter	Symbol	Conditions	Ratings			Unit
			min	typ	max	
DC Current Gain	h_{FE1}	$V_{CE}=5V, I_C=100mA$	100		400	
	h_{FE2}	$V_{CE}=5V, I_C=10mA$	90			
Gain-Bandwidth Product	f_T	$V_{CE}=10V, I_C=50mA$		120		MHz
Output Capacitance	C_{ob}	$V_{CB}=10V, f=1MHz$		14		pF
Collector-to-Emitter Saturation Voltage	$V_{CE(sat)}$	$I_C=500mA, I_B=50mA$	0.13		0.45	V
Base-to-Emitter Saturation Voltage	$V_{BE(sat)}$	$I_C=500mA, I_B=50mA$		0.85	1.2	V
Turn-ON Time	t_{on}	See specified Test Circuit		4.0		ns
Storage Time	t_{stg}	See specified Test Circuit		1.2		μs
Fall Time	t_f	See specified Test Circuit		8.0		ns

* : The 2SC5291 is classified by 100mA h_{FE} as follows :

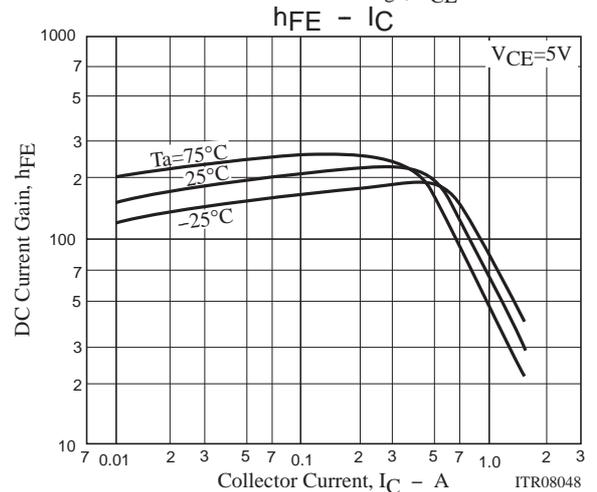
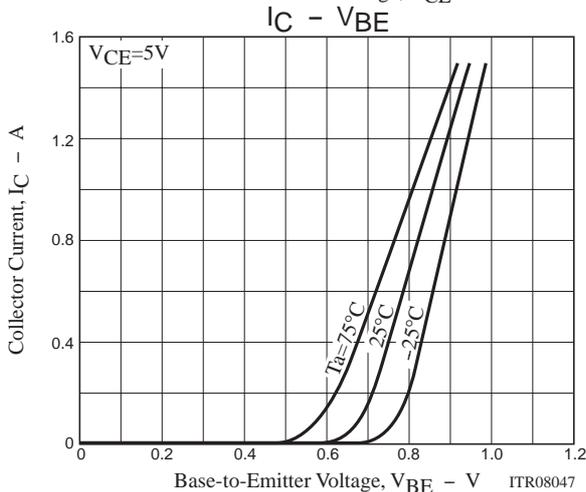
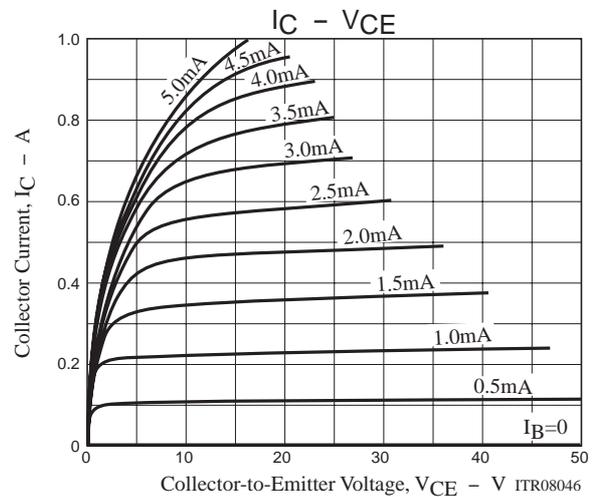
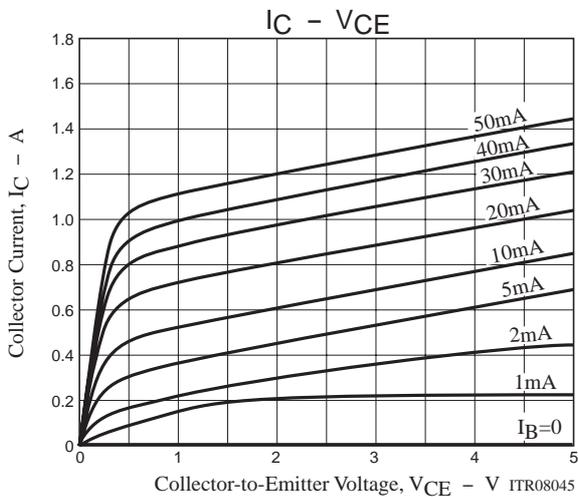
Rank	R	S	T
h_{FE}	100 to 200	140 to 280	200 to 400

Switching Time Test Circuit

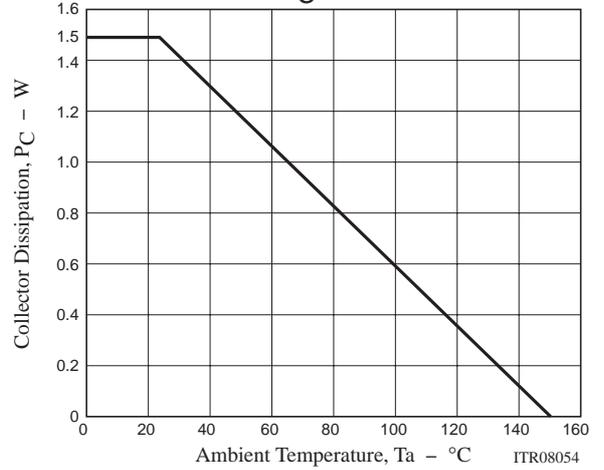
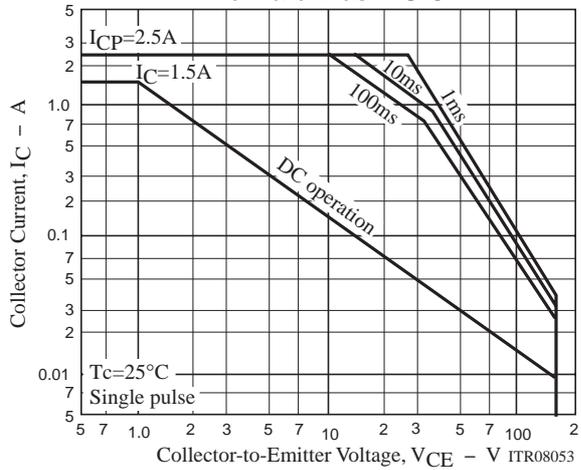
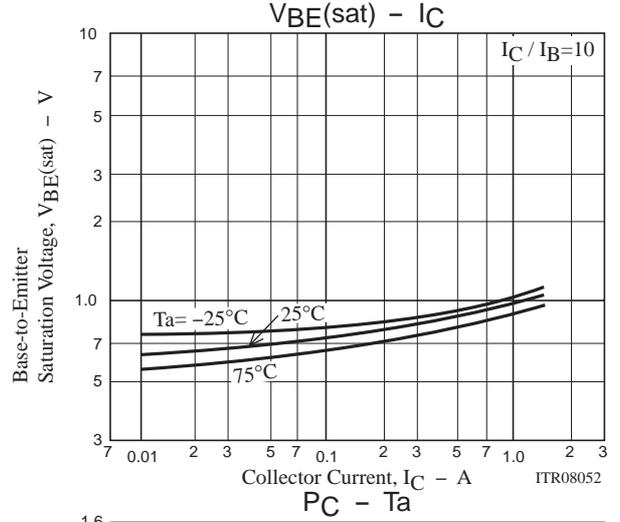
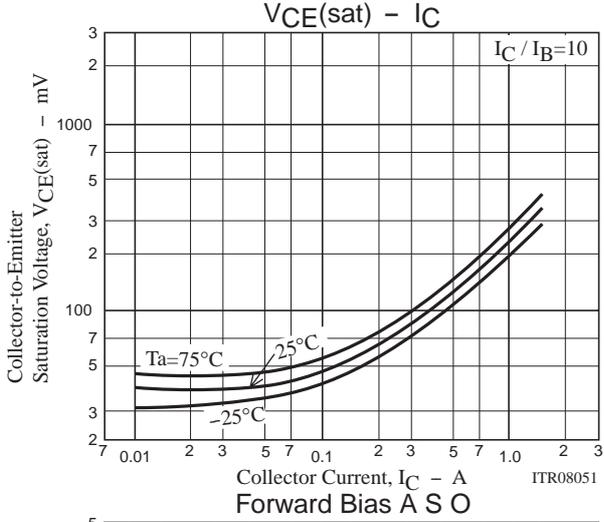
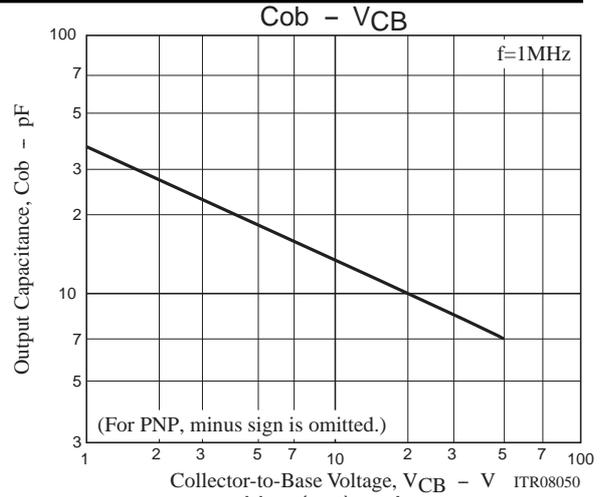
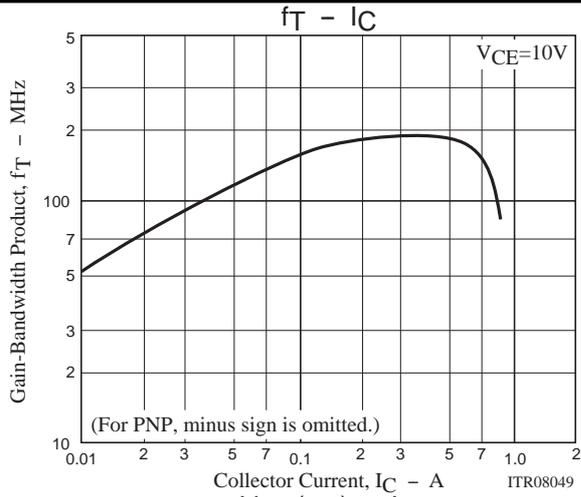


$$10I_{B1} = -10I_{B2} = I_C = 700mA$$

$$R_L = 140\Omega, R_B = 14\Omega \text{ at } I_C = 700mA$$



2SC5291



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