

**SANYO**

No.1046B

# 2SB919/2SD1235

PNP/NPN Epitaxial Planar Silicon Transistors

## 30V/8A High-Speed Switching Applications

**Use**

- Large current switching of relay drivers, high-speed inverters, converters

**Features**

- Low collector-to-emitter saturation voltage:  $V_{CE(sat)} = -0.5V$  (PNP),  $0.4V$  (NPN) max.
- Large current capacity

( ): 2SB919

**Absolute Maximum Ratings/ $T_a=25^\circ C$**

			unit
Collector-to-Base Voltage	$V_{CBO}$	(-)60	V
Collector-to-Emitter Voltage	$V_{CEO}$	(-)30	V
Emitter-to-Base Voltage	$V_{EBO}$	(-)6	V
Collector Current	$I_C$	(-)8	A
Collector Current (Pulse)	$I_{CP}$	(-)15	A
Collector Dissipation	$P_C$	1.75	W
		$T_c=25^\circ C$	30
Junction Temperature	$T_j$	150	$^\circ C$
Storage Temperature	$T_{stg}$	-55 to +150	$^\circ C$

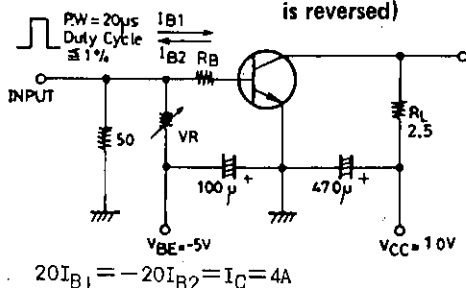
**Electrical Characteristics/ $T_a=25^\circ C$**

			min	typ	max	unit
Collector Cutoff Current	$I_{CBO}$	$V_{CB} = (-)40V, I_E = 0$			(-)0.1	mA
Emitter Cutoff Current	$I_{EBO}$	$V_{EB} = (-)4V, I_C = 0$			(-)0.1	mA
Common Emitter DC Current Gain	$h_{FE(1)}$	$V_{CE} = (-)2V, I_C = (-)1A$	70*		280*	
	$h_{FE(2)}$	$V_{CE} = (-)2V, I_C = (-)4A$	30			
Gain Band-width Product	$f_T$	$V_{CE} = (-)5V, I_C = (-)1A$		120		MHz
Collector-to-Emitter Saturation	$V_{CE(sat)}$	$I_C = (-)3A, I_B = (-)0.15A$			0.4 (-0.5)	MHz
Collector-to-Base Breakdown Voltage	$V_{(BR)CBO}$	$I_C = (-)1mA, I_E = 0$	(-)60			V
Collector-to-Emitter Breakdown Voltage	$V_{(BR)CEO}$	$I_C = (-)1mA, R_{BE} = \infty$	(-)30			V
Emitter-to-Base Breakdown Voltage	$V_{(BR)EBO}$	$I_E = (-)1mA, I_C = 0$	(-)6			V
Turn-on Time	$t_{on}$	See specified Test Circuit		0.1		$\mu s$
Storage Time	$t_{stg}$	"		(0.2)0.5		$\mu s$
Fall Time	$t_f$	"		0.03		$\mu s$

\* The 2SB919/2SD1235 are classified as follows according to  $h_{FE}$  at 1A.

70	Q	140	100	R	200	140	S	280
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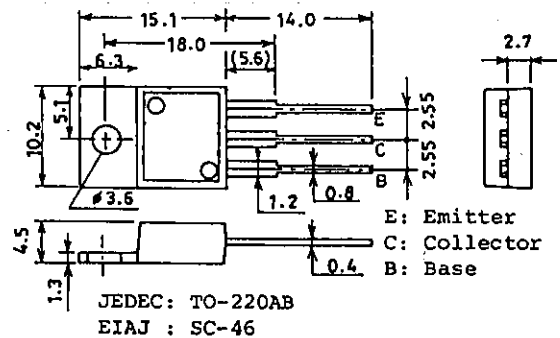
**Switching Time Test Circuit (For PNP, the polarity is reversed)**



Unit (resistance:  $\Omega$ , capacitance: F)

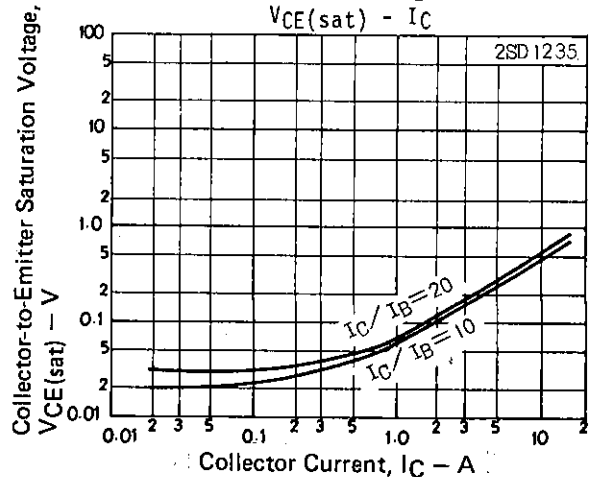
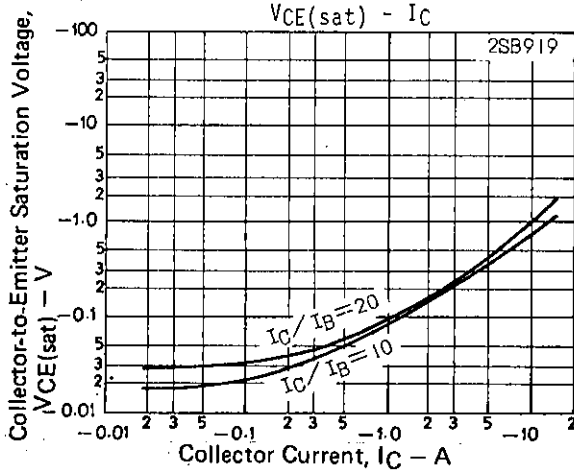
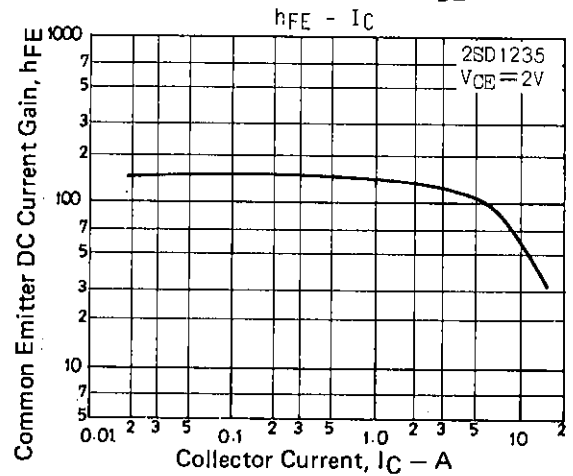
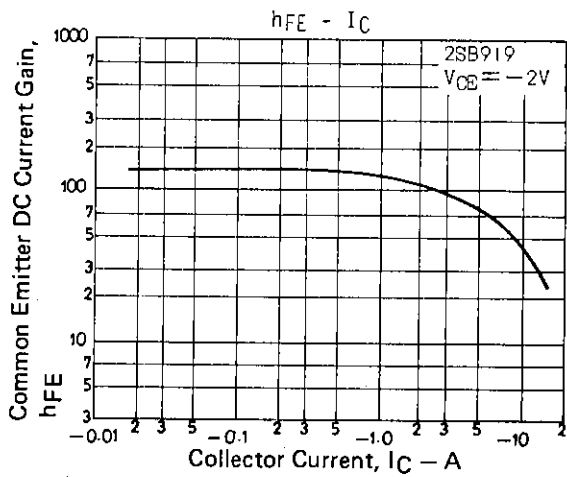
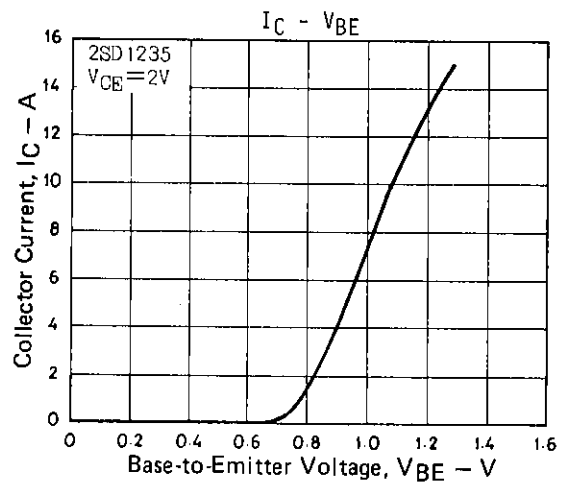
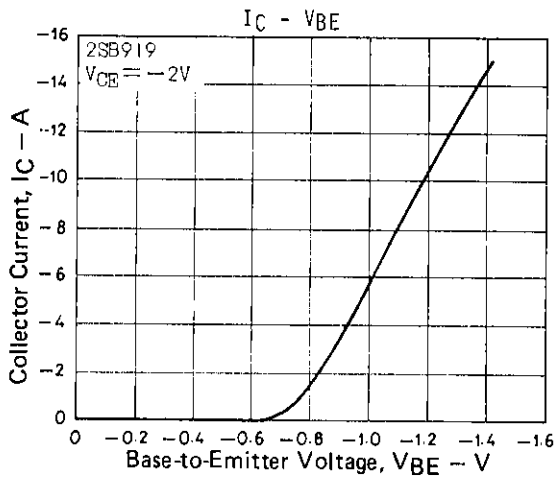
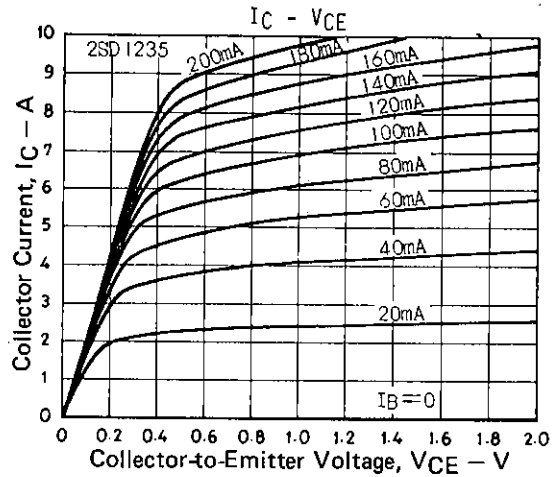
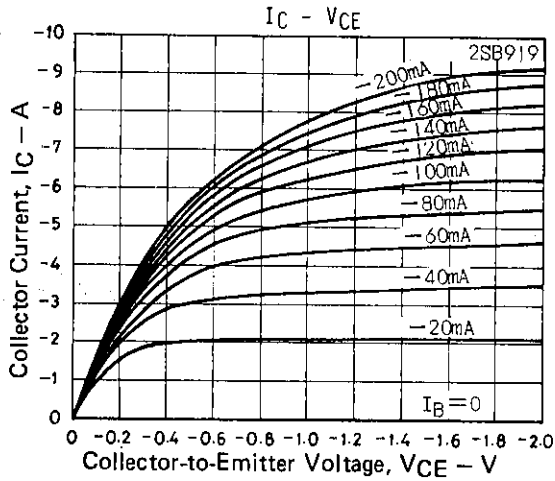
**Package Dimensions 2010B**

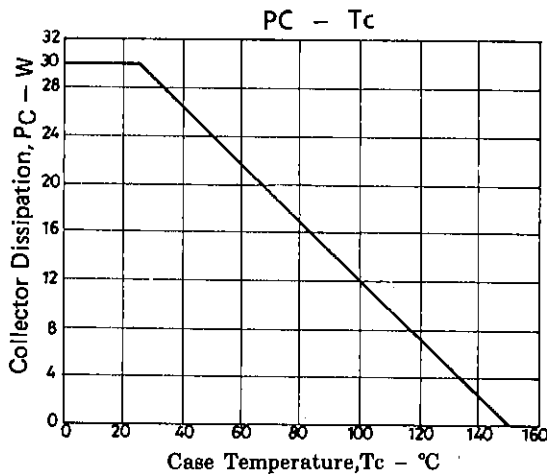
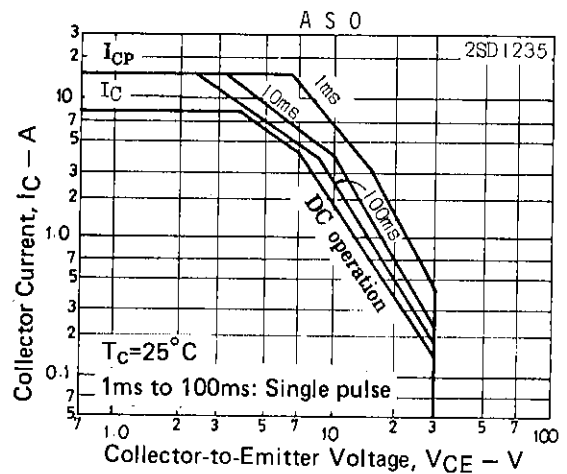
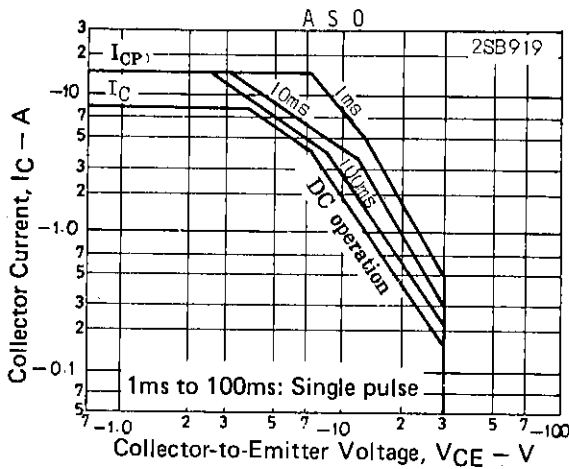
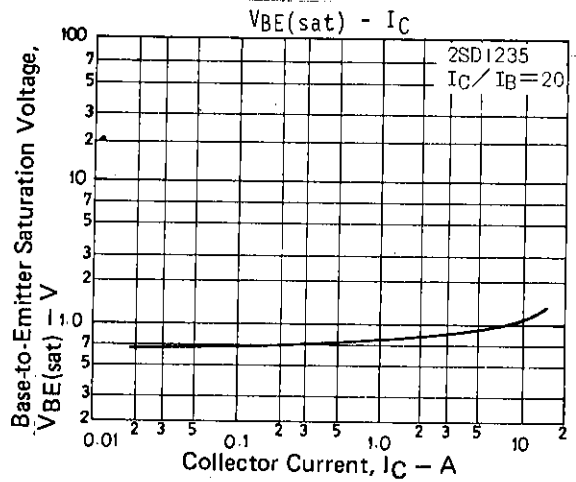
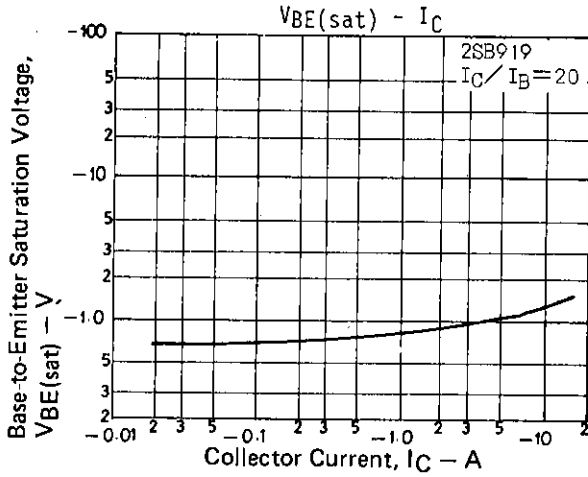
(unit: mm)



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