

**SANYO****2SB922L/2SD1238L****80V/12A Switching Applications****Applications**

- Suitable for relay drivers, high-speed inverters, converters, and other large-current switching applications.

**Features**

- Low collector-to-emitter saturation voltage :  
 $V_{CE(sat)} = -0.5V$  (PNP),  $0.4V$  (NPN) max.
- Wide ASO and highly resistant to breakdown.

(): 2SB922L

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

Parameter	Symbol	Conditions	Ratings	Unit
Collector-to-Base Voltage	$V_{CBO}$		(-)90	V
Collector-to-Emitter Voltage	$V_{CEO}$		(-)80	V
Emitter-to-Base Voltage	$V_{EBO}$		(-)6	V
Collector Current	$I_C$		(-)12	A
Collector Current (Pulse)	$I_{CP}$		(-)20	A
Collector Dissipation	$P_C$	$T_c = 25^\circ C$	80	W
Junction Temperature	$T_J$		150	$^\circ C$
Storage Temperature	$T_{stg}$		-55 to +150	$^\circ C$

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

Parameter	Symbol	Conditions	Ratings			Unit
			min	typ	max	
Collector Cutoff Current	$I_{CBO}$	$V_{CB} = (-)80V, I_E = 0$			(-)0.1	mA
Emitter Cutoff Current	$I_{EBO}$	$V_{EB} = (-)4V, I_C = 0$			(-)0.1	mA
DC Current Gain	$h_{FE1}$	$V_{CE} = (-)2V, I_C = (-)1A$	70*		280*	
	$h_{FE2}$	$V_{CE} = (-)2V, I_C = (-)6A$	30			
Gain-Bandwidth Product	$f_T$	$V_{CE} = (-)5V, I_C = (-)1A$		20		MHz
Collector-to-Emitter Saturation Voltage	$V_{CE(sat)}$	$I_C = (-)6A, I_B = (-)0.6A$			0.4	V
					(-)0.5	V

\* : The 2SB922L/2SD1238L are classified by 1A  $h_{FE}$  as follows :

70	Q	140	100	R	200	140	S	280
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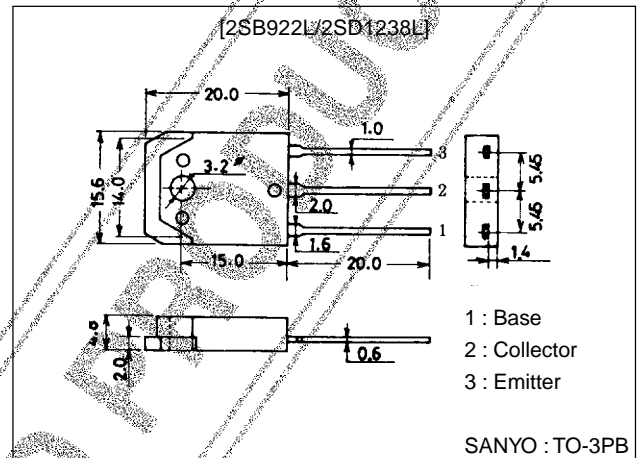
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**Package Dimensions**

unit:mm

2022A

**SANYO Electric Co., Ltd. Semiconductor Business Headquarters**

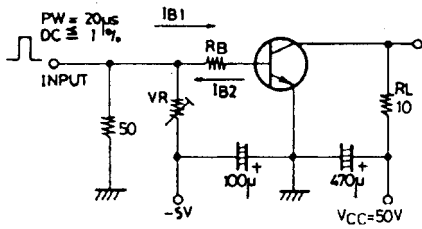
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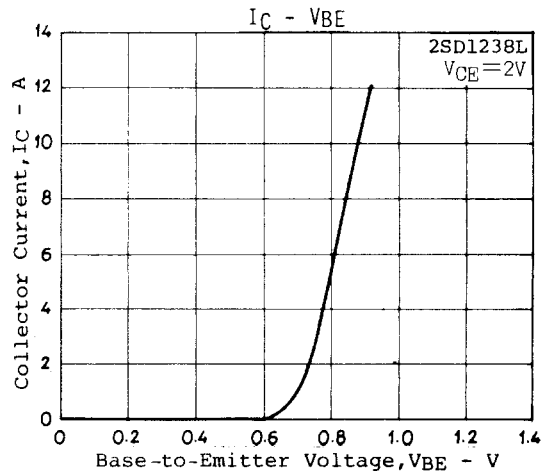
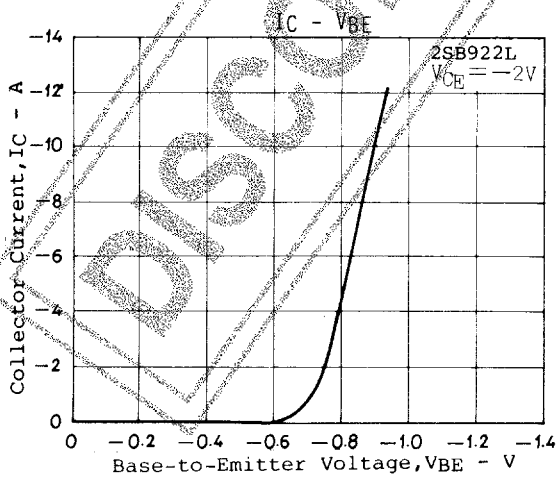
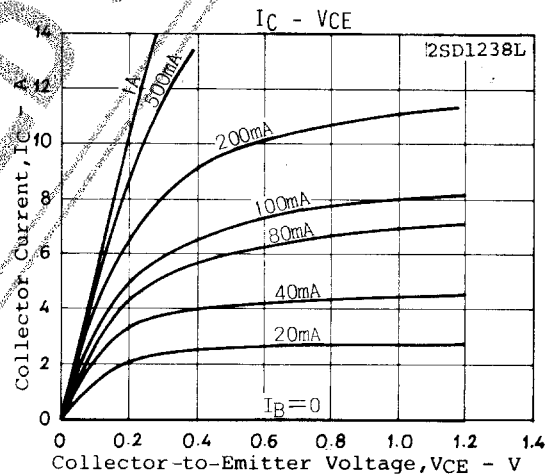
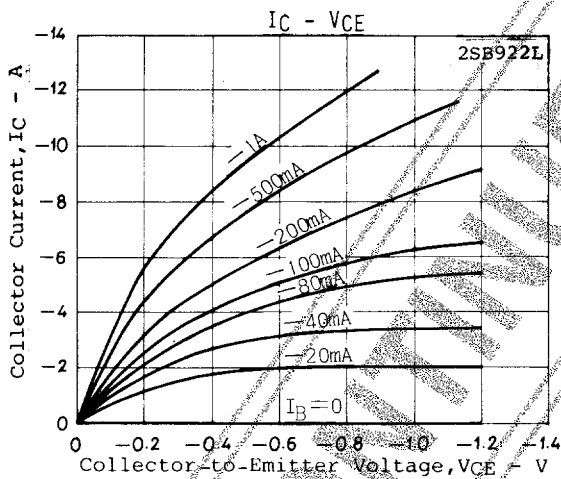
# 2SB922L/2SD1238L

Parameter	Symbol	Conditions	Ratings			Unit
			min	typ	max	
Collector-to-Base Breakdown Voltage	$V_{(BR)CBO}$	$I_C = (-)1mA, I_E = 0$	(-90)			V
Collector-to-Emitter Breakdown Voltage	$V_{(BR)CEO}$	$I_C = (-)1mA, R_{BE} = \infty$	(-80)			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		0.2		$\mu s$
Storage Time	$t_{stg}$	See specified Test Circuit		(0.7)		$\mu s$
Fall Time	$t_f$	See specified Test Circuit		1.7		$\mu s$
				(0.1)		$\mu s$
				0.2		$\mu s$

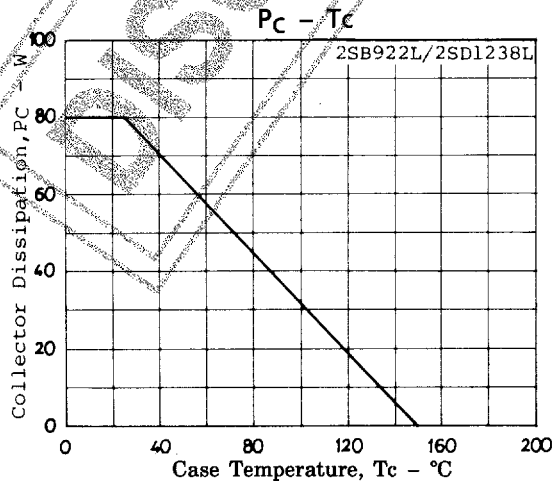
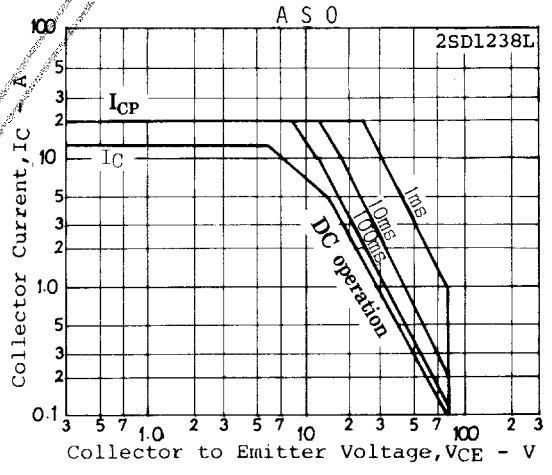
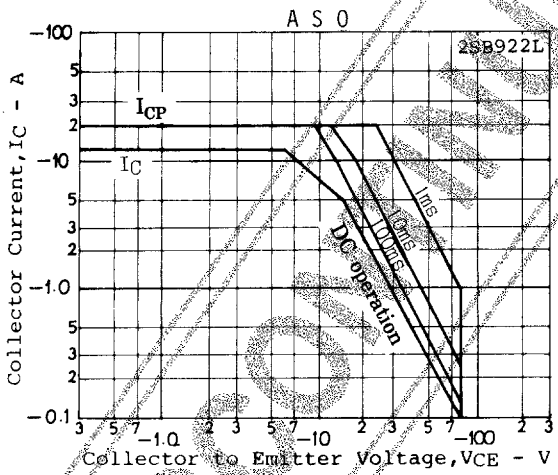
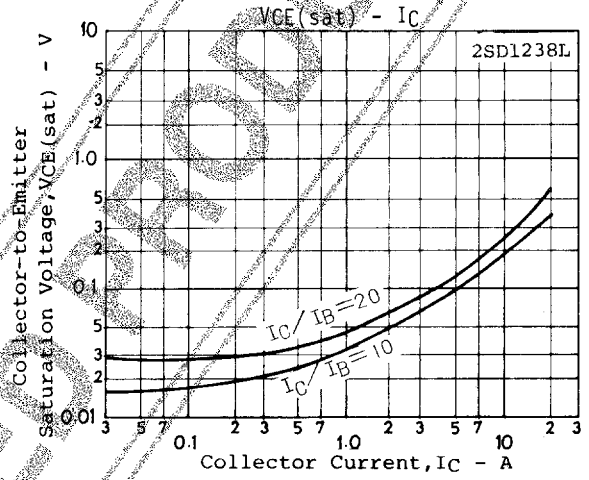
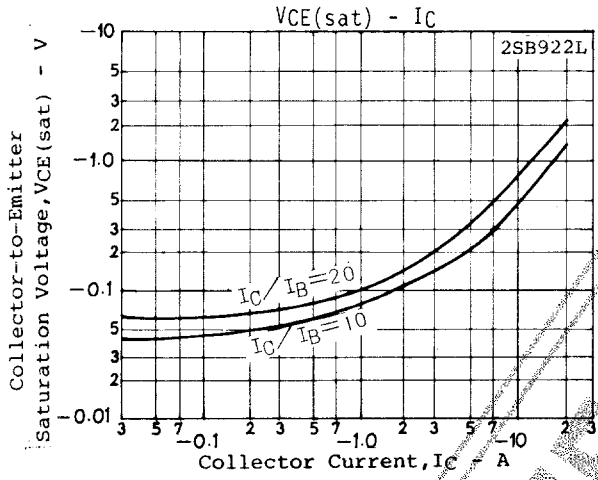
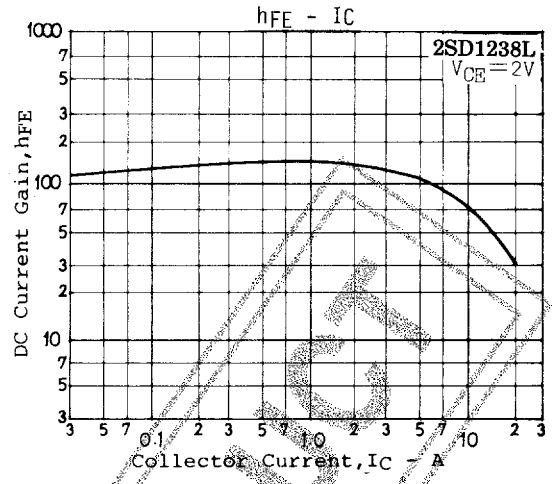
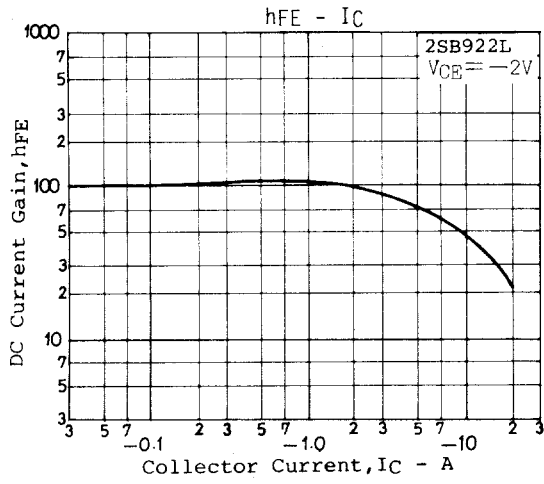
## Switching Time Test Circuit



$10I_{B1} = -10I_{B2} = I_C = 5A$   
 (For PNP, the polarity is reversed)  
 Unit (resistance :  $\Omega$ , capacitance : F)



# 2SB922L/2SD1238L



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