

No.1796B

# 2SB920L/2SD1236L

PNP/NPN Epitaxial Planar Silicon Transistors

## 80V/5A Switching Applications

**Applications**

- Relay drivers, high-speed inverters, converters, and other general high-current switching applications.

**Features**

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

( ): 2SB920L

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

			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	$I_C$	(-)5	A
Collector Current (Pulse)	$I_{CP}$	(-)9	A
Collector Dissipation	$P_C$	1.75	W
		30	W
Junction Temperature	$T_j$	150	$^\circ C$
Storage Temperature	$T_{stg}$	-55 to +150	$^\circ C$

$T_c = 25^\circ C$

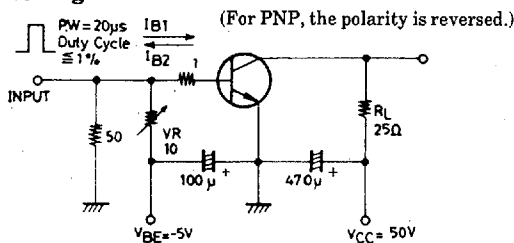
**Electrical Characteristics at  $T_a = 25^\circ C$**

			min	typ	max	unit
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	$h_{FE(1)}$	$V_{CE} = (-)2V, I_C = (-)1A$	70*		280*	
	$h_{FE(2)}$	$V_{CE} = (-)2V, I_C = (-)3A$	30			
Gain Bandwidth Product	$f_T$	$V_{CE} = (-)5V, I_C = (-)1A$		20		MHz
C-E Saturation Voltage	$V_{CE(sat)}$	$I_C = (-)3A, I_B = (-)0.3A$			0.4	V
					(-0.5)	
C-B Breakdown Voltage	$V_{(BR)CBO}$	$I_C = (-)1mA, I_E = 0$	(-)90			V
C-E Breakdown Voltage	$V_{(BR)CEO}$	$I_C = (-)1mA, R_{BE} = \infty$	(-)80			V
E-B Breakdown Voltage	$V_{(BR)EBO}$	$I_E = (-)1mA, I_C = 0$	(-)6			V
Rise Time	$t_{on}$	See specified Test Circuit.	(0.2)0.1			$\mu s$
Storage Time	$t_{stg}$	"	(0.7)1.2			$\mu s$
Fall Time	$t_f$	"	(0.2)0.4			$\mu s$

\*: The 2SB920L/2SD1236L are classified by 1A  $h_{FE}$  as follows:

70	Q	140	100	R	200	140	S	280
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**Switching Time Test Circuit**

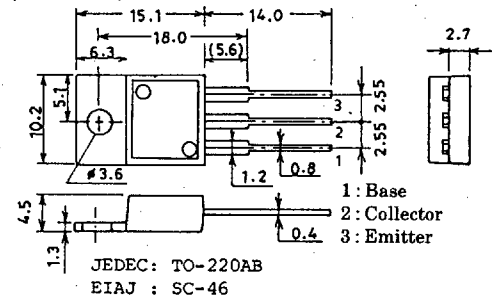


$10I_{B1} = -10I_{B2} = I_C = 2A$

Unit (Resistance:  $\Omega$ , Capacitance: F)

**Package Dimensions 2010C**

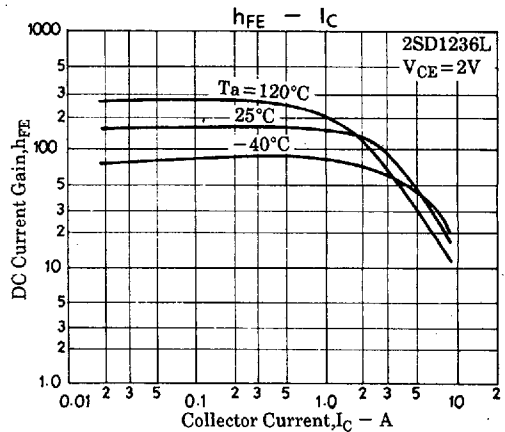
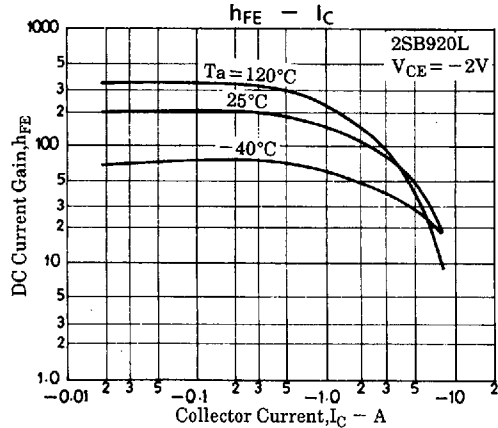
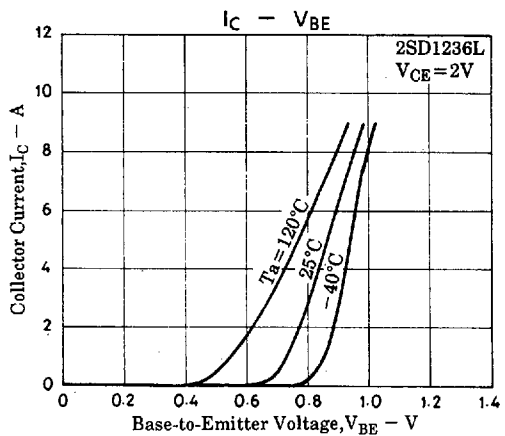
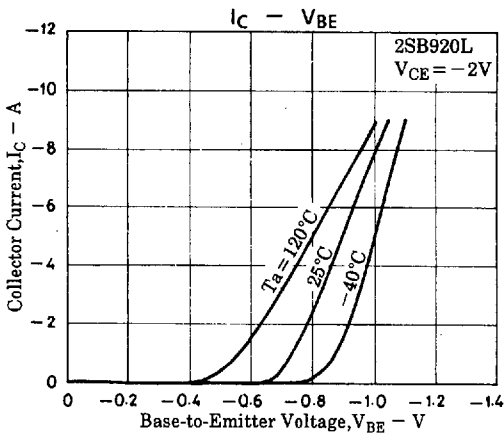
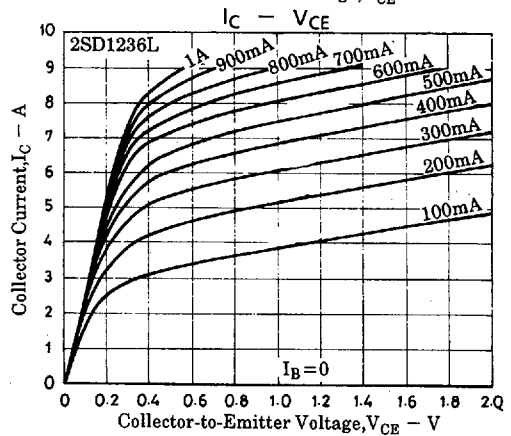
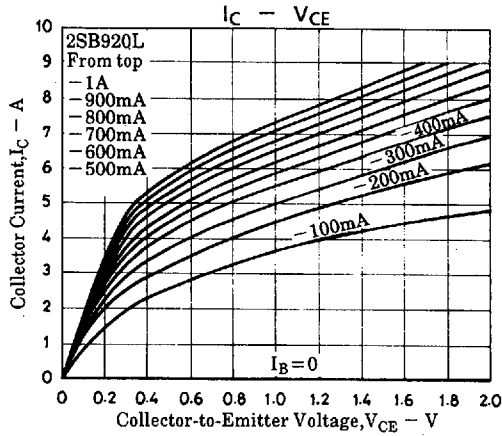
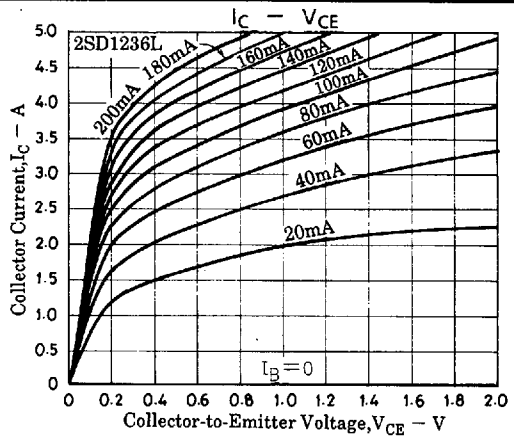
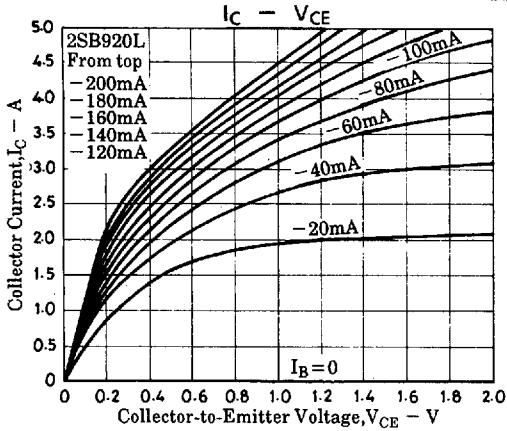
(unit: mm)



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

TOKYO OFFICE Tokyo Bldg., 1-10, 1 Chome, Ueno, Taito-ku, TOKYO, 110 JAPAN

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