**PNP/NPN Epitaxial Planar Silicon Transistors** 



2SB921L/2SD1237L

# 80V/7A Switching Applications

### Applications

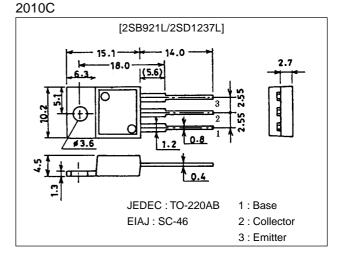
• Suitable for relay drivers, high-speed inverters, converters, and other genral large current switching applications.

### **Features**

- $\cdot$  Low collector-to-emitter saturation voltage :
- V<sub>CE(sat)</sub>=-0.5V (PNP), 0.4V (NPN) max.
- $\cdot$  Large current capacity.

## **Package Dimensions**

unit:mm



### ():2SB921L

# **Specifications**

#### Absolute Maximum Ratings at Ta = 25°C

Parameter	Symbol	Conditions	Ratings	Unit
Collector-to-Base Voltage	VCBO		(–)90	V
Collector-to-Emitter Voltage	VCEO		(–)80	V
Emitter-to-Base Voltage	VEBO		(–)6	V
Collector Current	ι <sub>C</sub>		(-)7	A
Collector Current (Pulse)	ICP		(–)12	Α
Collector Dissipation	PC		1.75	W
		Tc=25°C	40	W
Junction Temperature	Tj		150	°C
Storage Temperature	Tstg		-55 to +150	°C

### Electrical Characteristics at Ta = 25°C

Parameter	Symbol	Conditions	Ratings			Unit
			min	typ	max	Unit
Collector Cutoff Current	ICBO	V <sub>CB</sub> =(-)80V, I <sub>E</sub> =0			(–)0.1	mA
Emitter Cutoff Current	IEBO	V <sub>EB</sub> =(-)4V, I <sub>C</sub> =0			(–)0.1	mA
DC Current Gain	h <sub>FE</sub> 1	V <sub>CE</sub> =(-)2V, I <sub>C</sub> =(-)1A	70*		280*	
	h <sub>FE</sub> 2	V <sub>CE</sub> =(-)2V, I <sub>C</sub> =(-)4A	30			
Gain-Bandwidth Product	fT	V <sub>CE</sub> =(-)5V, I <sub>C</sub> =(-)1A		20		MHz
Collector-to-Emitter Saturation Voltage	V <sub>CE(sat)</sub>	I <sub>C</sub> =(-)4A, I <sub>B</sub> =(-)0.4A			0.4	V
					(-0.5)	V

\* : The 2SB921/2SD1237 are graded as follows by  $h_{FE}$  at 1A : 70 Q 140 100 R 200 140 S 280

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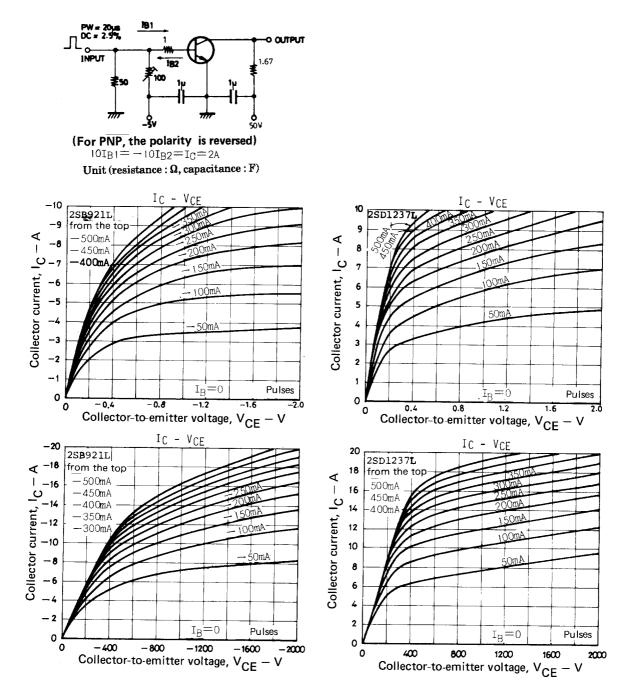
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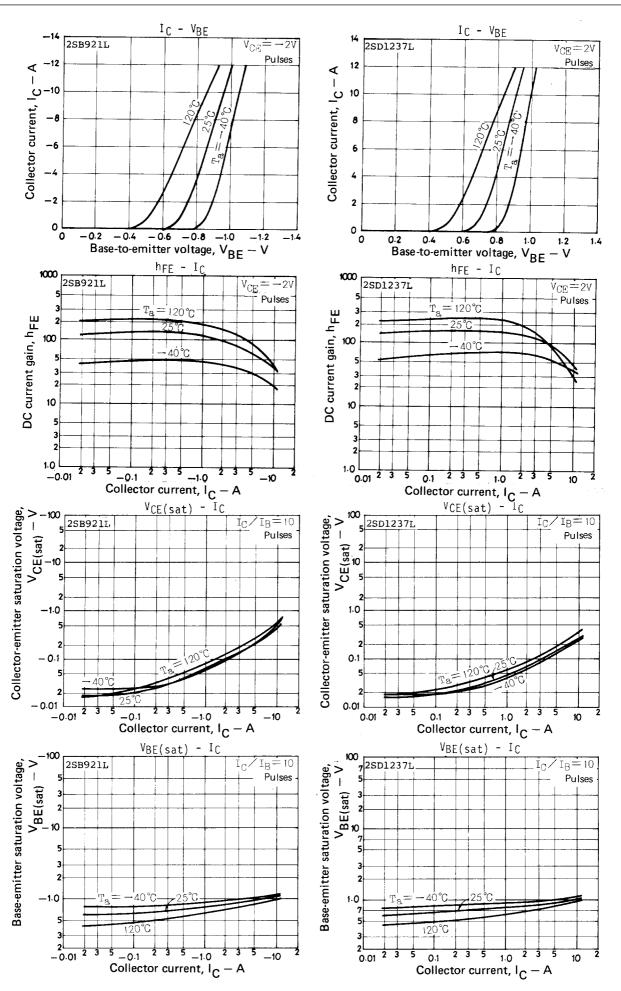
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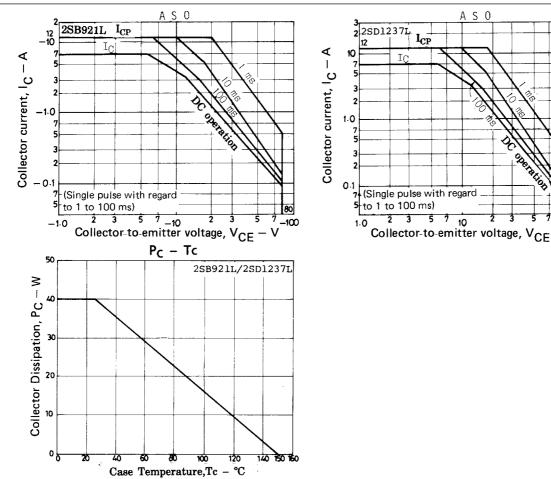
# 2SB921L/2SD1237L

Parameter	Symbol	Conditions		Ratings		
			min	typ	max	Unit
Collector-to-Base Breakdown Voltage	V(BR)CBO	I <sub>C</sub> =(-)1mA, I <sub>E</sub> =0	(–)90			V
Collector-to-Emitter Breakdown Voltage	V <sub>(BR)</sub> CEO	I <sub>C</sub> =(−)1mA, R <sub>BE</sub> =∞	(–)80			V
Emitter-to-Base Breakdown Voltage	V <sub>(BR)EBO</sub>	I <sub>E</sub> =(–)1mA I <sub>C</sub> =0	(–)6			V
Turn-ON Time	ton	See specified Test Circuit		(0.2)		μs
				0.1		μs
Storage Time	<sup>t</sup> stg	See specified Test Circuit		(0.7)		μs
				1.6		μs
Fall Time	t <sub>f</sub>	See specified Test Circuit		(0.2)		μs
				0.4		μs

#### **Switching Time Test Circuit**







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