



SANYO Semiconductors

# DATA SHEET

An ON Semiconductor Company

## 2SD1620 — NPN Epitaxial Planar Silicon Transistor

### 1.5V, 3V Strobe Applications

#### Features

- Less power dissipation because of low  $V_{CE(sat)}$ , permitting more flashes of light to be emitted.
- Large current capacity and highly resistant to breakdown.
- Excellent linearity of  $h_{FE}$  in the region from low current to high current.
- Ultrasmall size supports high-density, ultrasmall-sized hybrid IC designs.

#### Specifications

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

Parameter	Symbol	Conditions	Ratings	Unit
Collector-to-Base Voltage	$V_{CBO}$		30	V
Collector-to-Emitter Voltage	$V_{CEX}$		20	V
Collector-to-Emitter Voltage	$V_{CEO}$		10	V
Emitter-to-Base Voltage	$V_{EBO}$		6	V
Collector Current	$I_C$		3	A
Collector Current (Pulse)	$I_{CP}$		5	A
Collector Dissipation	$P_C$		500	mW
		Mounted on a ceramic board (250mm $\times$ 0.8mm)	1.3	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	$I_{CBO}$	$V_{CB}=20\text{V}, I_E=0\text{A}$			100	nA
Emitter Cutoff Current	$I_{EBO}$	$V_{EB}=4\text{V}, I_C=0\text{A}$			100	nA
DC Current Gain	$h_{FE}$	$V_{CE}=2\text{V}, I_C=3\text{A}$	140	210		
Gain-Bandwidth Product	$f_T$	$V_{CE}=10\text{V}, I_C=50\text{mA}$		200		MHz
Output Capacitance	$C_{ob}$	$V_{CB}=10\text{V}, f=1\text{MHz}$		30		pF

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# 2SD1620

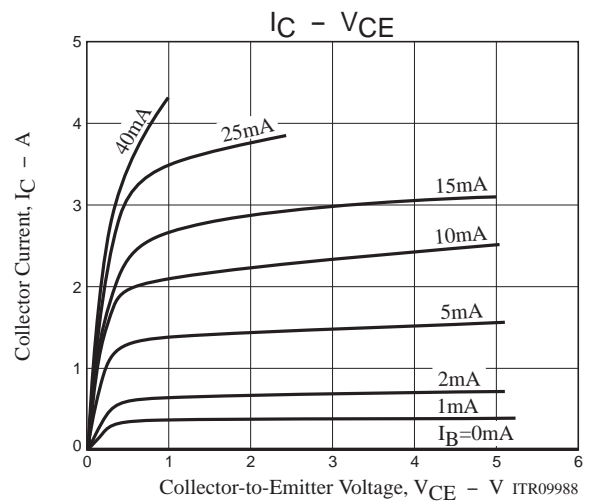
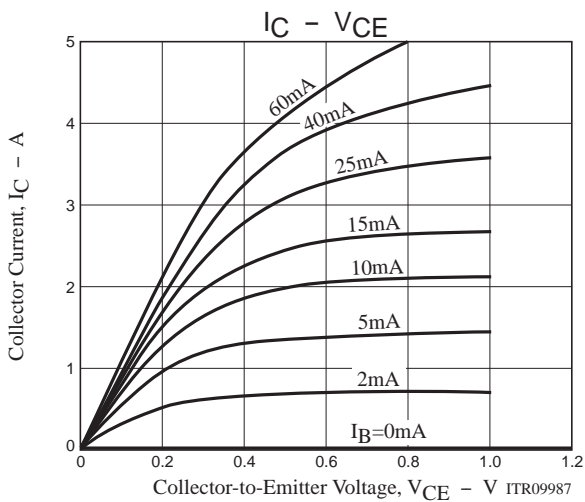
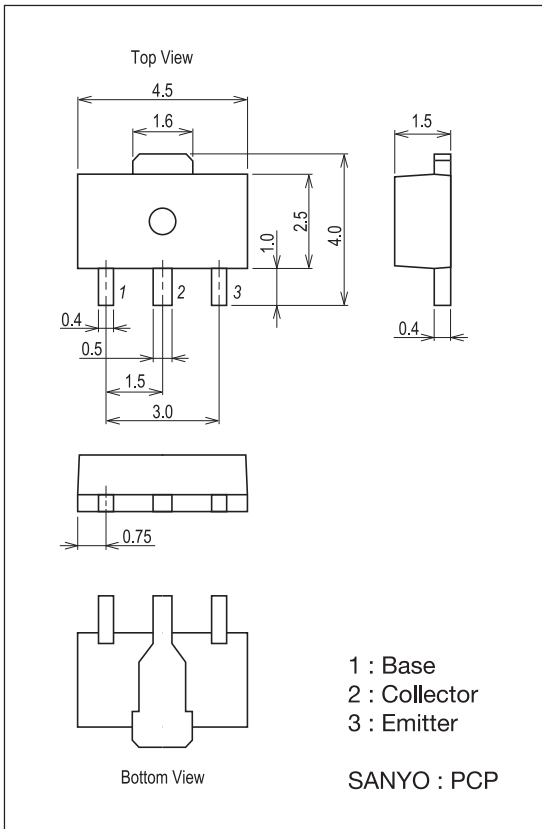
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Parameter	Symbol	Conditions	Ratings			Unit
			min	typ	max	
Collector-to-Emitter Saturation Voltage	$V_{CE(sat)}$	$I_C=3A, I_B=60mA$		0.3	0.4	V
Collector-to-Base Breakdown Voltage	$V_{(BR)CBO}$	$I_C=10\mu A, I_E=0A$	30			V
Collector-to-Emitter Breakdown Voltage	$V_{(BR)CEX}$	$I_C=1mA, V_{BE}=3V$	20			V
Collector-to-Emitter Breakdown Voltage	$V_{(BR)CEO}$	$I_C=1mA, R_{BE}=\infty$	10			V
Emitter-to-Base Breakdown Voltage	$V_{(BR)EBO}$	$I_E=10\mu A, I_C=0A$	6			V

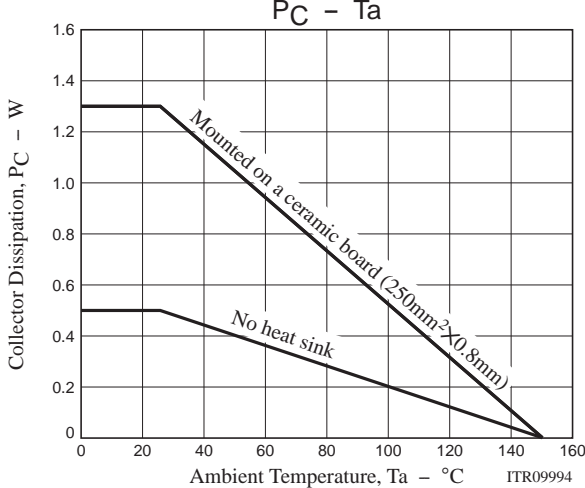
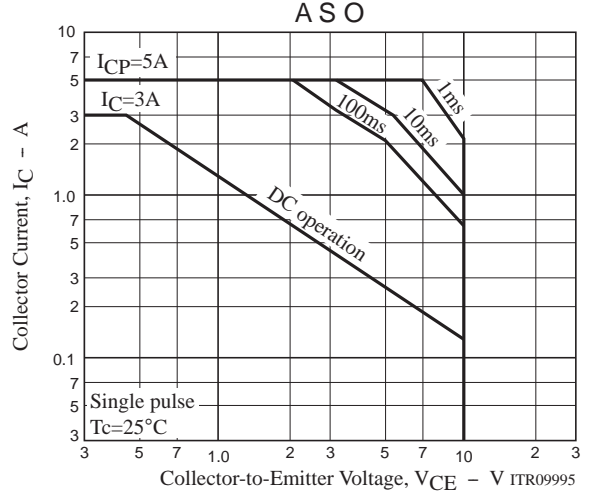
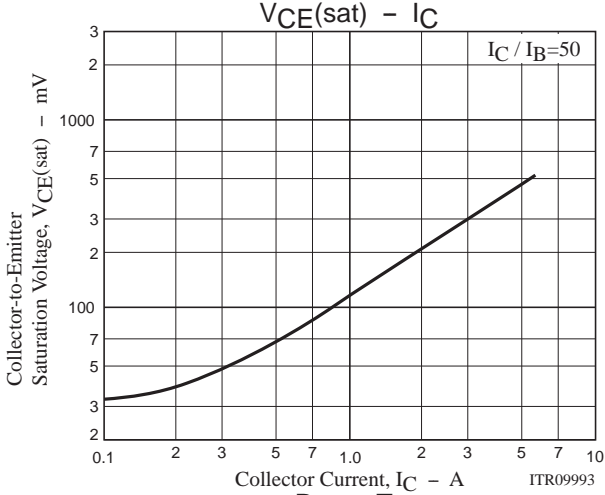
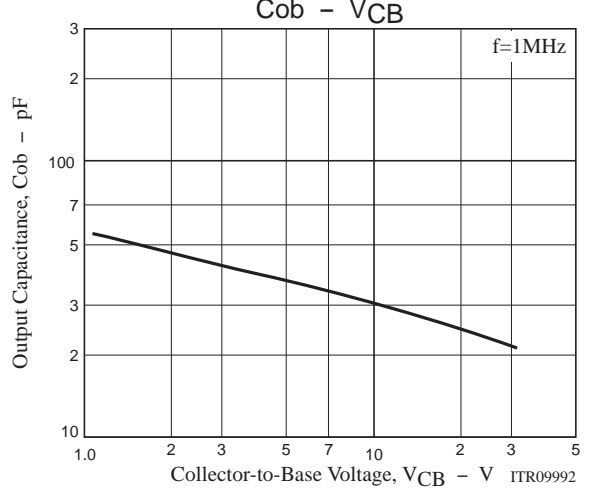
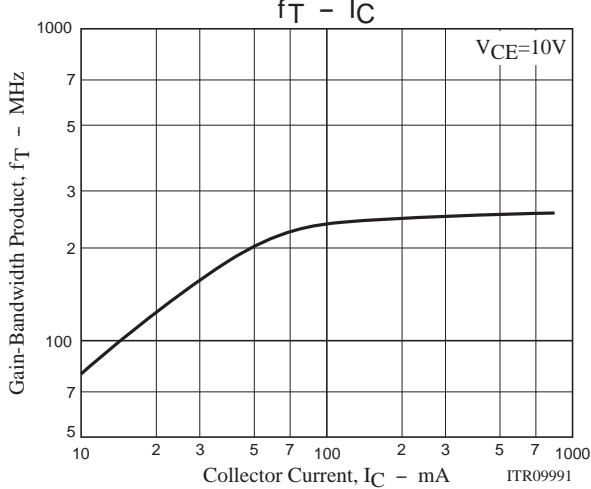
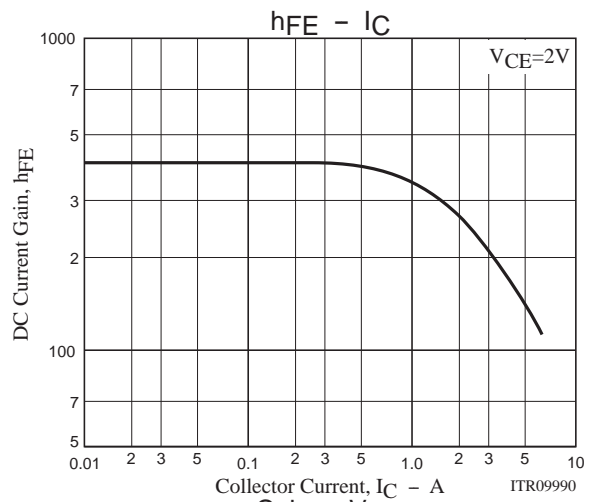
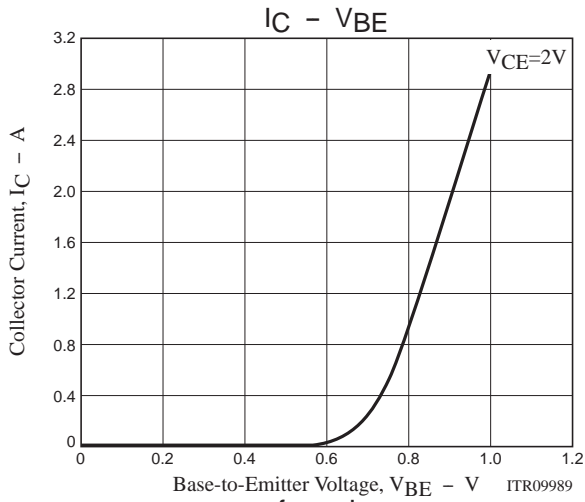
## Package Dimensions

unit : mm (typ)

7007B-004



# 2SD1620



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