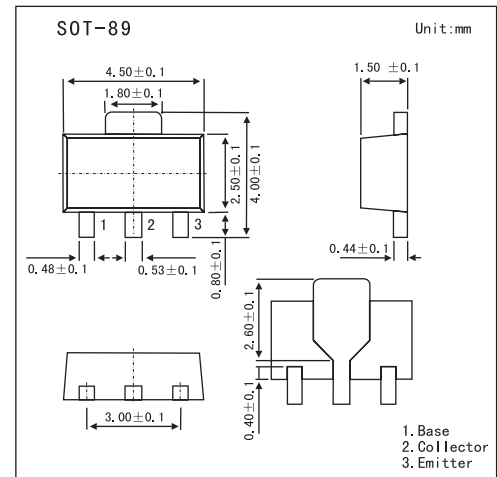


## NPN Epitaxial Planar Silicon Transistor

## 2SD1620

## ■ 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, ultrasmallsized hybrid IC designs.

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

Parameter	Symbol	Rating	Unit
Collector-base voltage	$V_{CB0}$	30	V
Collector-emitter voltage	$V_{CE0}$	25	V
Emitter-base voltage	$V_{EB0}$	6	V
Collector current	$I_C$	3	A
Collector current (pulse)	$I_{CP}$	5	A
Collector dissipation	$P_C$	500	mW
	$P_C^*$	1.3	W
Junction temperature	$T_j$	150	$^\circ\text{C}$
Storage temperature	$T_{stg}$	-55 to +150	$^\circ\text{C}$

\* Mounted on ceramic board(250mm $2 \times 0.8$ mm)

■ Electrical Characteristics  $T_a = 25^\circ\text{C}$ 

Parameter	Symbol	Testconditions	Min	Typ	Max	Unit
Collector cutoff current	$I_{CBO}$	$V_{CB} = 20\text{ V}, I_E = 0$			100	nA
Emitter cutoff current	$I_{EBO}$	$V_{EB} = 4\text{ V}, I_C = 0$			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	$C_{ob}$	$V_{CB} = 10\text{ V}, f = 1.0\text{ MHz}$		30		pF
Collector-emitter saturation voltage	$V_{CE(sat)}$	$I_C = 3\text{ A}, I_B = 60\text{ mA}$		0.3	0.4	V
Collector-base breakdown voltage	$V_{(BR)CBO}$	$I_C = 10\mu\text{A}, I_E = 0$	30			V
Collector-emitter breakdown voltage	$V_{(BR)CEX}$	$I_C = 1\text{ mA}, V_{BE} = 3\text{ V}$	20			V
Collector-emitter breakdown voltage	$V_{(BR)CEO}$	$I_C = 1\text{ mA}, R_{BE} = \infty$	10			V
Emitter-base breakdown voltage	$V_{(BR)EBO}$	$I_E = 10\mu\text{A}, I_C = 0$	6			V