Ordering number : EN1719C

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 Ta=25°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 (250mm²×0.8mm)	1.3	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	
Collector Cutoff Current	I_{CBO}	V_{CB}=20V, I_E=0A			100	nA
Emitter Cutoff Current	I_{EBO}	V_{EB}=4V, I_C=0A			100	nA
DC Current Gain	h_{FE}	V_{CE}=2V, I_C=3A	140	210		
Gain-Bandwidth Product	f_T	V_{CE}=10V, I_C=50mA		200		MHz
Output Capacitance	Cob	V_{CB}=10V, f=1MHz		30		pF

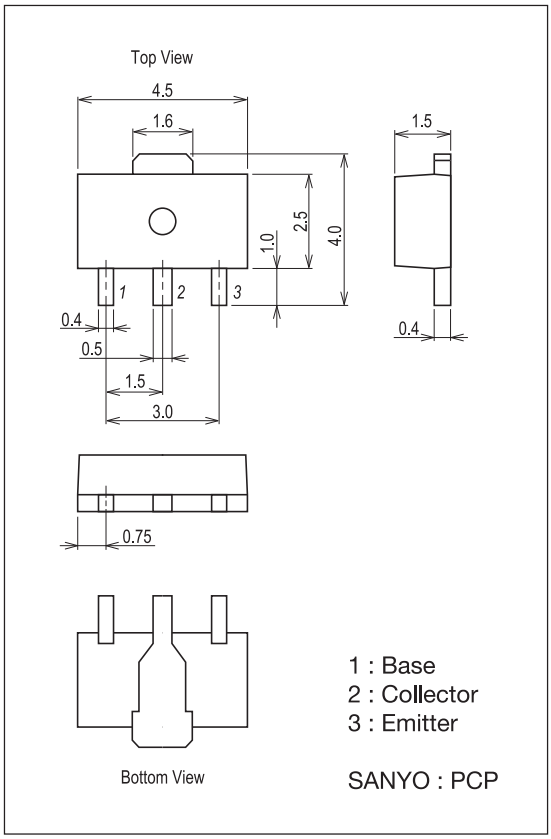
Continued on next page.

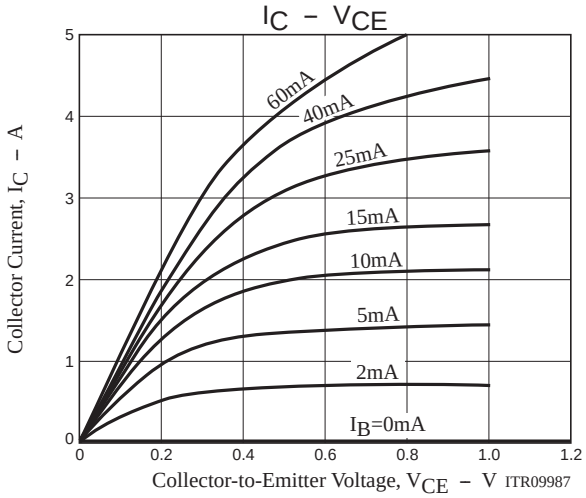
Continued from preceding page.

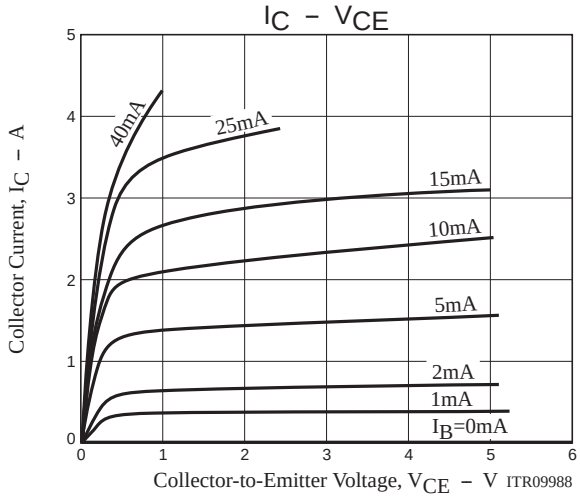
Parameter	Symbol	Conditions	Ratings			Unit
			min	typ	max	
Collector-to-Emitter Saturation Voltage	$V_{CE}(sat)$	I_C=3A, I_B=60mA		0.3	0.4	V
Collector-to-Base Breakdown Voltage	$V_{(BR)CBO}$	I_C=10μA, I_E=0A	30			V
Collector-to-Emitter Breakdown Voltage	$V_{(BR)CEX}$	I_C=1mA, V_{BE}=3V	20			V
Collector-to-Emitter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

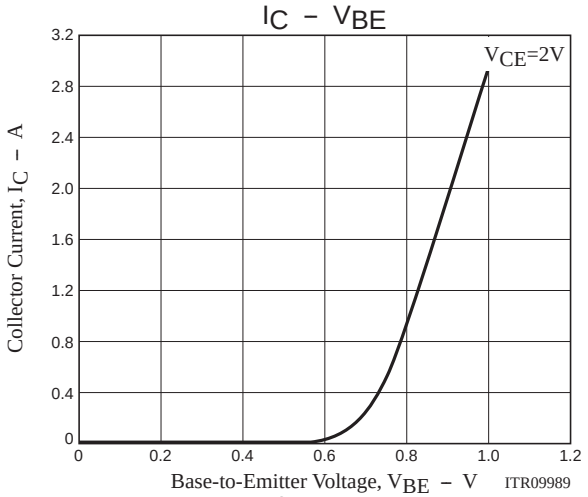
Package Dimensions

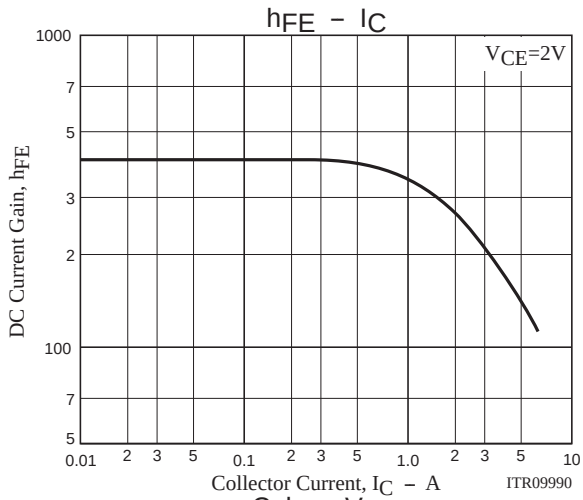
unit : mm (typ)
7007B-004

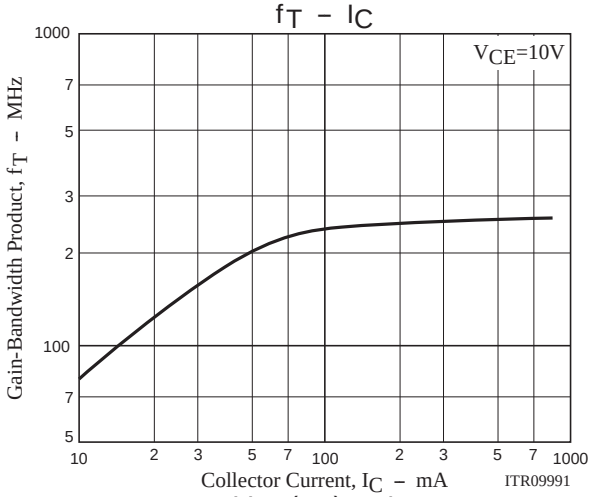


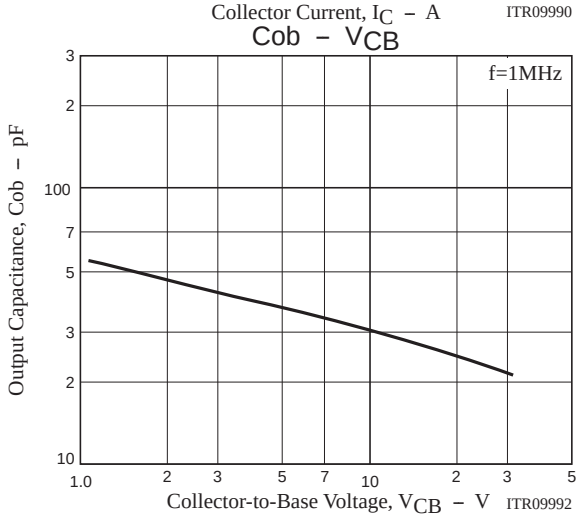


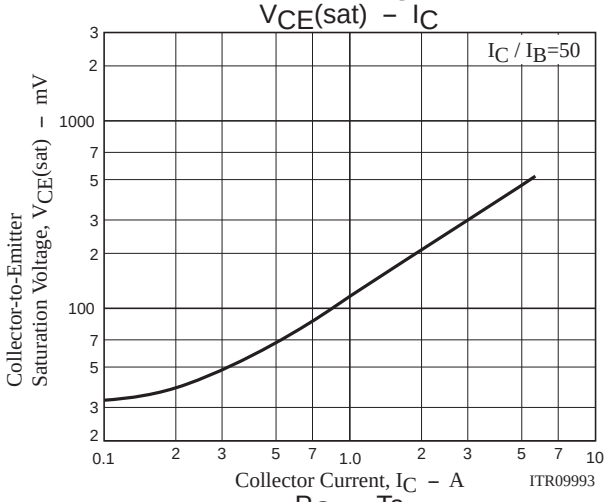


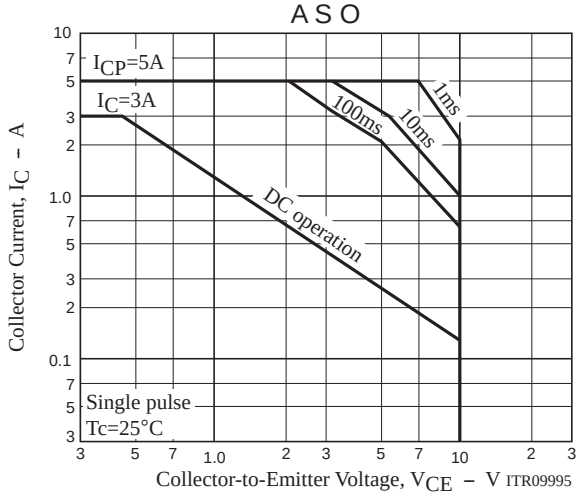

IC – VBE
VCE=2V
Collector Current, IC – A
Base-to-Emitter Voltage, VBE – V
ITR09989

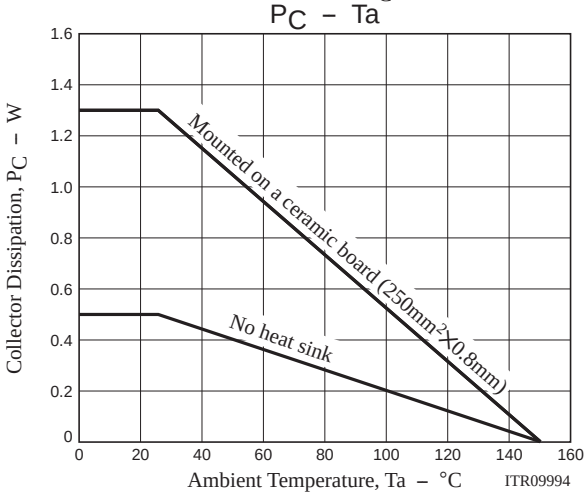

hFE – IC
VCE=2V
DC Current Gain, hFE
Collector Current, IC – A
ITR09990


fT – IC
VCE=10V
Gain-Bandwidth Product, fT – MHz
Collector Current, IC – mA
ITR09991


Cob – VCB
f=1MHz
Output Capacitance, Cob – pF
Collector-to-Base Voltage, VCB – V
ITR09992


VCE(sat) – IC
IC / IB=50
Collector-to-Emitter Saturation Voltage, VCE(sat) – mV
Collector Current, IC – A
ITR09993


A S O
ICP=5A
IC=3A
1ms
10ms
100ms
DC operation
Single pulse
Tc=25°C
Collector Current, IC – A
Collector-to-Emitter Voltage, VCE – V
ITR09995


PC – Ta
Mounted on a ceramic board (250mm2×0.8mm)
No heat sink
Collector Dissipation, PC – W
Ambient Temperature, Ta – °C
ITR09994