

Silicon NPN Power Transistors

2SC3320

DESCRIPTION

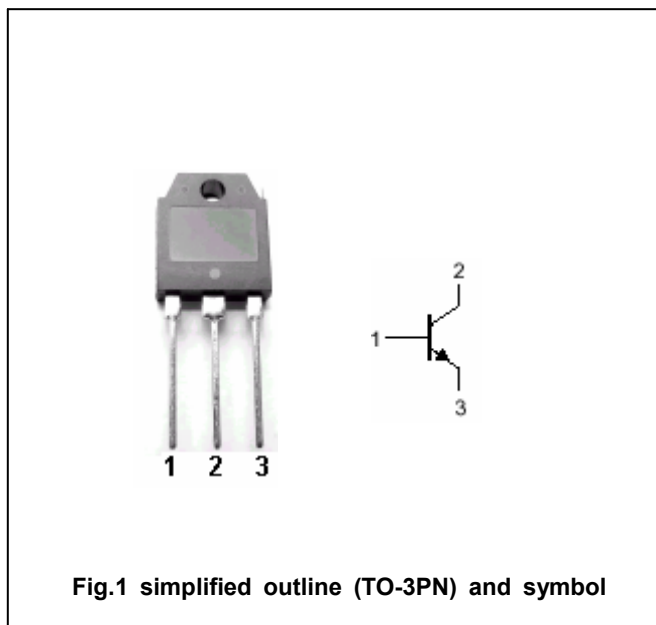
- With TO-3PN package
- High voltage ,high speed switching
- High reliability

APPLICATIONS

- Switching regulators
- Ultrasonic generators
- High frequency inverters
- General purpose power amplifiers

PINNING

PIN	DESCRIPTION
1	Base
2	Collector;connected to mounting base
3	Emitter

Absolute maximum ratings($T_a=25^\circ\text{C}$)

SYMBOL	PARAMETER	CONDITIONS	VALUE	UNIT
V_{CBO}	Collector-base voltage	Open emitter	500	V
V_{CEO}	Collector-emitter voltage	Open base	400	V
V_{EBO}	Emitter-base voltage	Open collector	7	V
I_C	Collector current		15	A
I_B	Base current		5	A
P_C	Collector power dissipation	$T_C=25^\circ\text{C}$	80	W
T_j	Junction temperature		150	$^\circ\text{C}$
T_{stg}	Storage temperature		-65~150	$^\circ\text{C}$

THERMAL CHARACTERISTICS

SYMBOL	PARAMETER	VALUE	UNIT
$R_{th(j-c)}$	Thermal resistance from junction to case	1.56	$^\circ\text{C}/\text{W}$

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CHARACTERISTICS

Tj=25°C unless otherwise specified

SYMBOL	PARAMETER	CONDITIONS	MIN	TYP.	MAX	UNIT
$V_{(BR)CEO}$	Collector-emitter breakdown voltage	$I_C=10mA ; I_B=0$	400			V
$V_{(BR)CBO}$	Collector-base breakdown voltage	$I_C=1mA ; I_E=0$	500			V
$V_{(BR)EBO}$	Emitter-base breakdown voltage	$I_E=1mA ; I_C=0$	7			V
V_{CEsat}	Collector-emitter saturation voltage	$I_C=6A ; I_B=1.2A$			1.0	V
V_{BEsat}	Base-emitter saturation voltage	$I_C=6A ; I_B=1.2A$			1.5	V
I_{CBO}	Collector cut-off current	$V_{CB}=500V ; I_E=0$			1.0	mA
I_{EBO}	Emitter cut-off current	$V_{EB}=7V ; I_C=0$			1.0	mA
h_{FE}	DC current gain	$I_C=6A ; V_{CE}=5V$	10			

Switching times resistive load

t_{on}	Turn-on time	$I_C=7.5A ; I_{B1}=1.5A$ $I_{B2}=-3A ; R_L=20\Omega$ $P_W=20\mu s ; \text{Duty} < 2\%$			0.5	μs
t_s	Storage time				1.5	μs
t_f	Fall time				0.15	μs

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The technical drawing illustrates the outline dimensions of a mechanical component across three views:

- Front View (Left):** Shows vertical dimensions from 0.00 to 42.60 mm and horizontal dimensions from 8.00 to 15.60 mm. It includes features like holes with diameters $\phi 1.50$, $\phi 3.00$, and $\phi 13.50$, and radii $R0.50$.
- Side View (Top Right):** Shows a profile with a total width of 4.80 mm and a central hole diameter of $\phi 5.50$. Vertical dimensions include 2.00 ± 0.005, 3.00, 17.00, 7.00, and 40.10 mm.
- Top View (Bottom Right):** Shows a rectangular footprint with a width of 13.50 mm and a depth of 10.90 ± 0.01 mm. It details four mounting tabs with widths of 3.00, 2.00, and 1.00 mm, and a central slot width of 0.60 ± 0.005 mm.

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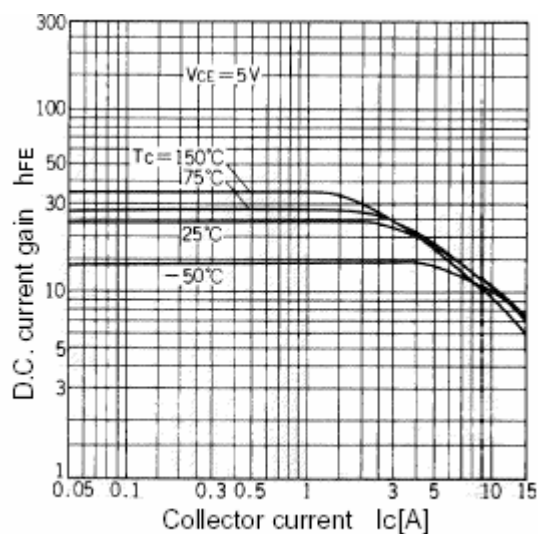


Fig.3 DC current Gain

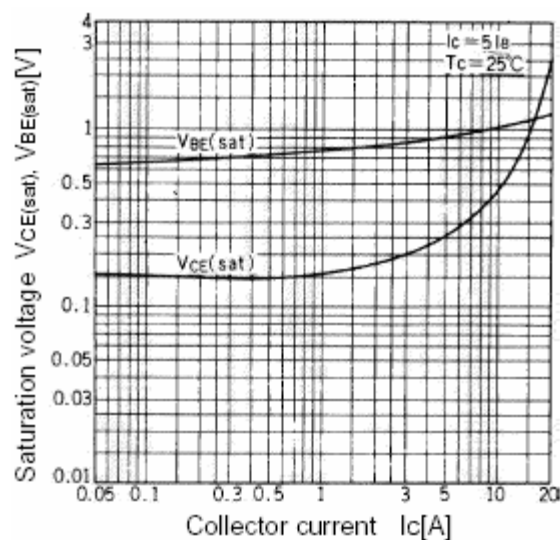
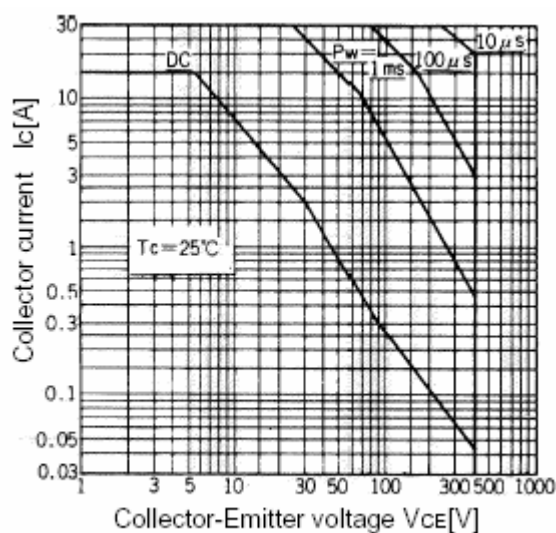
Fig.4 Base-Emitter Saturation Voltage
Collector-Emitter Saturation Voltage

Fig.5 Safe Operating Area