

Silicon NPN Power Transistors

2SD2222

DESCRIPTION

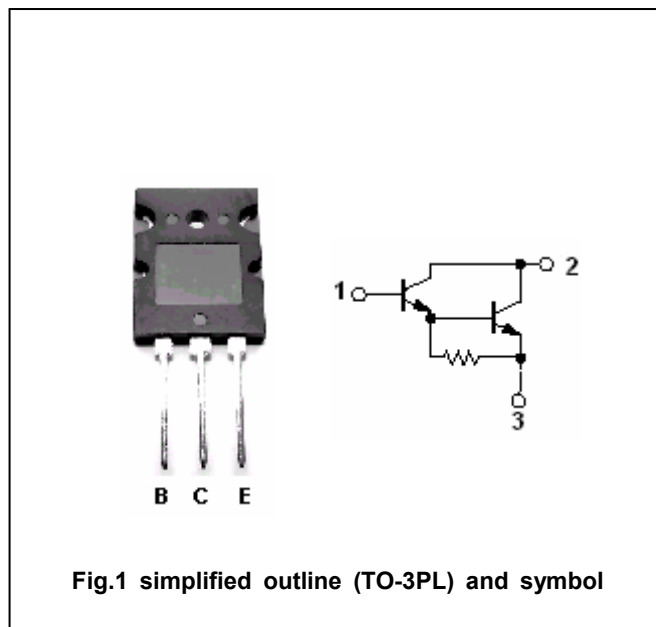
- With TO-3PL package
- Complement to type 2SB1470
- High DC current gain
- Low saturation voltage $V_{CE(sat)}$
- DARLINGTON

APPLICATIONS

- For power amplification

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	160	V
V_{CEO}	Collector-emitter voltage	Open base	160	V
V_{EBO}	Emitter-base voltage	Open collector	5	V
I_C	Collector current		8	A
I_{CM}	Collector current-peak		15	A
P_C	Collector power dissipation	$T_C=25^\circ\text{C}$	120	W
		$T_a=25^\circ\text{C}$	3.5	
T_j	Junction temperature		150	$^\circ\text{C}$
T_{stg}	Storage temperature		-55~150	$^\circ\text{C}$

Silicon NPN Power Transistors

2SD2222

CHARACTERISTICS

Tj=25°C unless otherwise specified

SYMBOL	PARAMETER	CONDITIONS	MIN	TYP.	MAX	UNIT
$V_{(BR)CEO}$	Collector-emitter breakdown voltage	$I_C=30mA ; I_B=0$	160			V
V_{CEsat}	Collector-emitter saturation voltage	$I_C=7A ; I_B=7mA$			3.0	V
V_{BEsat}	Base-emitter saturation voltage	$I_C=7A ; I_B=7mA$			3.0	V
I_{CBO}	Collector cut-off current	$V_{CB}=160V ; I_E=0$			100	μA
I_{CEO}	Collector cut-off current	$V_{CE}=160V ; I_B=0$			100	μA
I_{EBO}	Emitter cut-off current	$V_{EB}=5V ; I_C=0$			100	μA
h_{FE-1}	DC current gain	$I_C=1A ; V_{CE}=5V$	1000			
h_{FE-2}	DC current gain	$I_C=7A ; V_{CE}=5V$	3500		20000	
f_T	Transition frequency	$I_C=0.5A ; V_{CE}=10V ; f=1MHz$		20		MHz

Switching times

t_{on}	Turn-on time	$I_C=7A ; I_{B1}=-I_{B2}=7mA$ $V_{CC}=50V$		2.0		μs
t_s	Storage time			6.0		μs
t_f	Fall time			1.2		μs

◆ h_{FE-2} classifications

Q	P
3500-10000	7000-20000

2SD2222

Technical drawing of a mechanical part, showing front, side, and top views with dimensions.

Front View Dimensions:

- Overall width: 20.00 ± 0.2
- Internal width: 18.00
- Distance from left edge to first hole center: 8.00
- Hole diameter: $\phi 3.30 \pm 0.2$
- Top flange thickness: 6.00
- Distance from top flange to first hole center: 4.00
- Distance between hole centers: 4.00
- Distance from hole center to right edge: 0.00
- Internal width of central slot: 13.00
- Slot radius: R0.50
- Distance from left edge to slot center: 9.70
- Distance from slot center to right edge: 9.00
- Distance from top flange to slot center: 15.00
- Distance from slot center to bottom flange: 17.50
- Bottom flange thickness: 20.00
- Overall height: 22.50
- Distance from bottom flange to hole center: 3.00
- Hole diameter: $3 \times \phi 2.00$
- Distance from hole center to right edge: 2.50
- Bottom flange width: 40.00
- Distance from hole center to bottom flange edge: 40.50
- Bottom flange thickness: 1.00
- Bottom flange angle: 15.00°

Side View Dimensions:

- Overall width: 5.00
- Distance from left edge to hole center: 3.00
- Distance from hole center to right edge: 0.60
- Overall height: 3.20

Top View Dimensions:

- Overall width: 40.00
- Distance from left edge to hole center: 40.50
- Distance from hole center to right edge: 1.00

Fig.2 Outline dimensions (unindicated tolerance:±0.50 mm)