

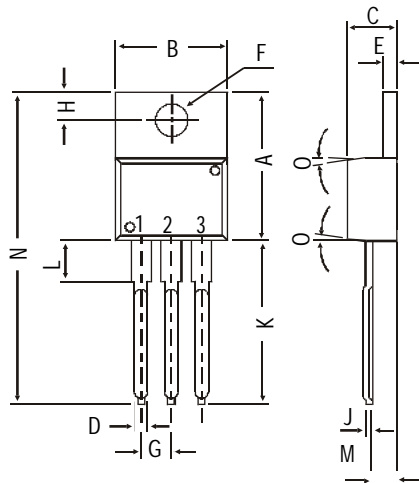
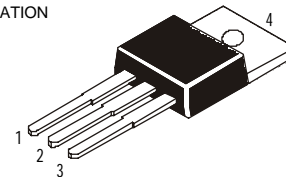
TO-220 Plastic Package

CSB507, CSD313

CSB507 PNP PLASTIC POWER TRANSISTOR
CSD313 NPN PLASTIC POWER TRANSISTOR
Low frequency Power Amplifier Applications

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PIN CONFIGURATION
 1. BASE
 2. COLLECTOR
 3. EMITTER
 4. COLLECTOR



All dimensions in mm.

DIM	MIN.	MAX.
A	14.42	16.51
B	9.63	10.67
C	3.56	4.83
D		0.90
E	1.15	1.40
F	3.75	3.88
G	2.29	2.79
H	2.54	3.43
J		0.56
K	12.70	14.73
L	2.80	4.07
M	2.03	2.92
N		31.24
O	DEG 7	

ABSOLUTE MAXIMUM RATINGS

Collector-base voltage (open emitter)
 Collector-emitter voltage (open base)
 Collector current
 Total power dissipation up to $T_C = 25^\circ\text{C}$
 Junction temperature
 Collector-emitter saturation voltage
 $I_C = 2\text{A}; I_B = 0.2\text{A}$
 D.C. current gain
 $I_C = 1\text{A}; V_{CE} = 2\text{V}$

V_{CB0}	max.	60 V
V_{CE0}	max.	60 V
I_C	max.	3.0 A
P_{tot}	max.	30 W
T_j	max.	150 °C
V_{CEsat}	max.	1.0 V
h_{FE}	min	40
	max.	320

RATINGS (at $T_A=25^\circ\text{C}$ unless otherwise specified)

Limiting values

Collector-base voltage (open emitter)	V_{CB0}	max.	60 V
Collector-emitter voltage (open base)	V_{CE0}	max.	60 V
Emitter-base voltage (open collector)	V_{EBO}	max.	5.0 V

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Collector current	I_C	max.	3.0 A
Collector current (Peak value)	I_{CM}	max.	8.0 A
Total power dissipation up to $T_C = 25^\circ\text{C}$	P_{tot}	max.	30 W
Junction temperature	T_j	max.	150 °C
Storage temperature	T_{stg}		-65 to +150 °C

THERMAL CHARACTERISTICS

From junction to case	R_{thj-c}	=	4.17 °C/W
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CHARACTERISTICS

$T_{amb} = 25^\circ\text{C}$ unless otherwise specified

Collector cutoff current

$I_E = 0; V_{CB} = 20V$

$I_B = 0; V_{CE} = 60V$

I_{CBO} max. 0.1 mA

I_{CEO} max. 5.0 mA

Emitter cut-off current

$I_C = 0; V_{EB} = 4V$

I_{EBO} max. 1.0 mA

Breakdown voltages

$I_C = 1 \text{ mA}; I_B = 0$

$I_C = 1 \text{ mA}; I_E = 0$

$I_E = 1 \text{ mA}; I_C = 0$

V_{CEO} min. 60 V

V_{CBO} min. 60 V

V_{EBO} min. 5.0 V

Saturation voltage

$I_C = 2 \text{ A}; I_B = 0.2 \text{ A}$

V_{CEsat}^* max. 1.0 V

Base emitter on voltage

$I_C = 1A; V_{CE} = 2V$

$V_{BE(on)}^*$ max. 1.5 V

D.C. current gain

$I_C = 0.1A; V_{CE} = 2V$

h_{FE}^* min. 40

$I_C = 1A; V_{CE} = 2V^{**}$

h_{FE}^* min. 40

max. 320

Transition frequency

$I_C = 500 \text{ mA}; V_{CE} = 5V$

f_T typ. 8 MHz

* Pulse test: pulse width $\leq 300 \mu\text{s}$; duty cycle $\leq 2.0\%$.

** h_{FE} classification: C: 40-80 D: 60-120 E: 100-200 F: 160-320

Customer Notes

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