

**TO-220 Plastic Package**

**CSB507, CSD313**

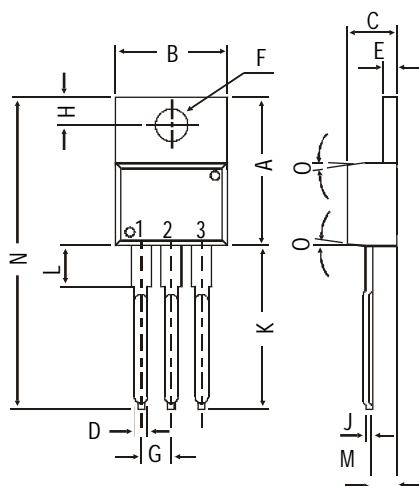
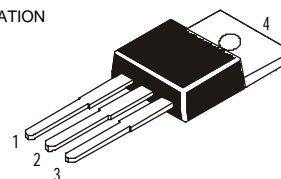
**CSB507 PNP PLASTIC POWER TRANSISTOR**

**CSD313 NPN PLASTIC POWER TRANSISTOR**

*Low frequency Power Amplifier Applications*

**PIN CONFIGURATION**

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



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	

All dimensions in mm.

**ABSOLUTE MAXIMUM RATINGS**

Collector-base voltage (open emitter)

$V_{CBO}$  max. 60 V

Collector-emitter voltage (open base)

$V_{CEO}$  max. 60 V

Collector current

$I_C$  max. 3.0 A

Total power dissipation up to  $T_C = 25^\circ\text{C}$

$P_{tot}$  max. 30 W

Junction temperature

$T_j$  max. 150  $^\circ\text{C}$

Collector-emitter saturation voltage

$V_{CEsat}$  max. 1.0 V

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

D.C. current gain

$h_{FE}$  min 40

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

max. 320

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

Limiting values

Collector-base voltage (open emitter)

$V_{CBO}$  max. 60 V

Collector-emitter voltage (open base)

$V_{CEO}$  max. 60 V

Emitter-base voltage (open collector)

$V_{EBO}$  max. 5.0 V

## CSB507, CSD313

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	$R_{th\,j-c}$	=	4.17 °C/W
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### CHARACTERISTICS

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

Collector cutoff current

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

$I_{CBO}$  max. 0.1 mA

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

$I_{CEO}$  max. 5.0 mA

Emitter cut-off current

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

$I_{EBO}$  max. 1.0 mA

Breakdown voltages

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

$V_{CEO}$  min. 60 V

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

$V_{CBO}$  min. 60 V

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

$V_{EBO}$  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

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

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

D.C. current gain

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

$h_{FE}^*$  min. 40

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

$h_{FE}^*$  min. 40  
max. 320

Transition frequency

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

$f_T$  typ. 8 MHz

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

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

## Customer Notes

### Disclaimer

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