

TO-220 Plastic Package

CSB507, CSD313

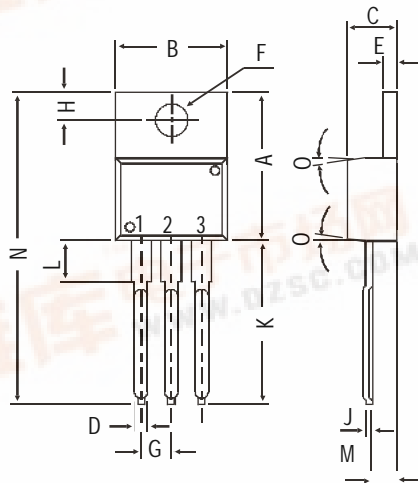
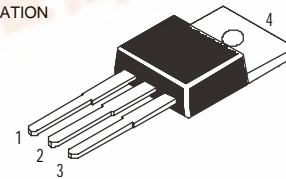
CSB507 PNP PLASTIC POWER TRANSISTOR

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)
 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_{CBO}	max.	60 V
V_{CEO}	max.	60 V
I_C	max.	3.0 A
P_{tot}	max.	30 W
T_j	max.	150 $^\circ\text{C}$
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)
 Collector-emitter voltage (open base)
 Emitter-base voltage (open collector)

V_{CBO}	max.	60 V
V_{CEO}	max.	60 V
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			
$I_E = 0$; $V_{CB} = 20\text{V}$	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

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Continental Device India Limited

C-120 Naraina Industrial Area, New Delhi 110 028, India.
Telephone + 91-11-2579 6150, 5141 1112 Fax + 91-11-2579 5290, 5141 1119
email@cdil.com www.cdilsemi.com