

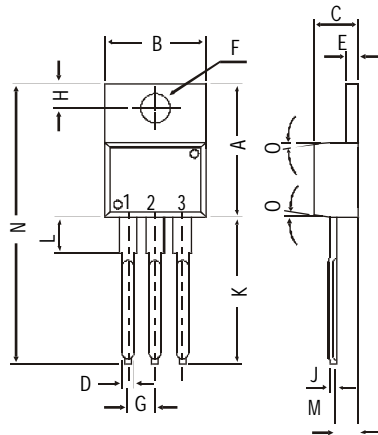
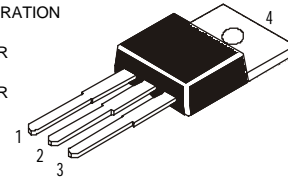
TO-220 Plastic Package

**CSB857, CSB858
CSD1133, CSD1134**

*CSB857, 858 PNP PLASTIC POWER TRANSISTORS
CSD1133, 1134 NPN PLASTIC POWER TRANSISTORS
Low frequency Power Amplifier*

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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

		857 1133	858 1134
Collector-base voltage (open emitter)	V_{CBO}	max. 70	70 V
Collector-emitter voltage (open base)	V_{CEO}	max. 50	60 V
Collector current	I_C	max.	4.0 A
Total power dissipation up to $T_C = 25^\circ C$	P_{tot}	max.	40 W
Junction temperature	T_j	max.	150 $^\circ C$
Collector-emitter saturation voltage $I_C = 2 A; I_B = 200 mA$	V_{CEsat}	max.	1.0 V
D.C. current gain $I_C = 1 A; V_{CE} = 4 V$	h_{FE}	min.	60
		max.	320

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

		857 1133	858 1134
Limiting values			
Collector-base voltage (open emitter)	V_{CBO}	max. 70	70 V
Collector-emitter voltage (open base)	V_{CEO}	max. 50	60 V
Emitter-base voltage (open collector)	V_{EBO}	max.	5.0 V

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Collector current	I_C	max.	4.0	A
Collector current (Peak value)	I_C	max.	8.0	A
Total power dissipation up to $T_C = 25^\circ\text{C}$	P_{tot}	max.	40	W
Junction temperature	T_j	max.	150	$^\circ\text{C}$
Storage temperature	T_{stg}		-65 to +150	$^\circ\text{C}$

CHARACTERISTICS

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

			857	858
			1133	1134
Collector cutoff current $I_E = 0; V_{CB} = 50\text{V}$	I_{CBO}	max.	1.0	μA
Breakdown voltages $I_C = 50\text{ mA}; I_B = 0$	V_{CEO}	min.	50	60 V
$I_C = 10\ \mu\text{A}; I_E = 0$	V_{CBO}	min.	70	V
$I_E = 10\ \mu\text{A}; I_C = 0$	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 $I_C = 1\text{ A}; V_{CE} = 4\text{ V}$	$V_{BE(on)}^*$	max.	1.0	V
D.C. current gain $I_C = 0.1\text{ A}; V_{CE} = 4\text{ V}$	h_{FE}^*	min.	35	
$I_C = 1.0\text{ A}; V_{CE} = 4\text{ V}^{**}$	h_{FE}^*	min.	60	
		max.	320	
Transition frequency $I_C = 0.5\text{ A}; V_{CE} = 4\text{ V}$	f_T	typ.	15	MHz
		typ.	7.0	MHz

**** h_{FE} classification: B: 60-120 C: 100-200 D: 160-320**

* Pulse test

Notes

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Disclaimer

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