Boca Semiconductor Corp.
BSC
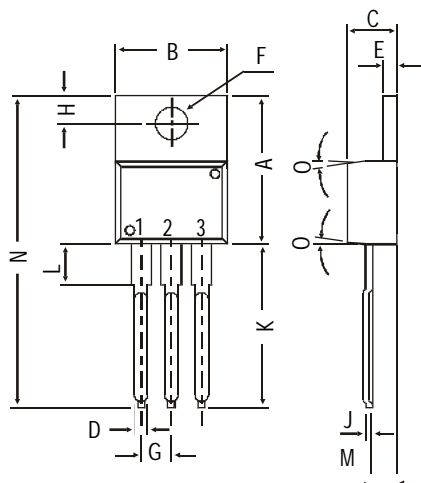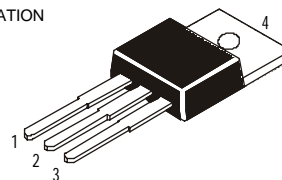
MJE15028, 15030　　　NPN PLASTIC POWER TRANSISTORS
MJE15029, 15031　　　PNP PLASTIC POWER TRANSISTORS
High frequency Drivers in Audio Amplifiers

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

		15028 15029	15030 15031	
Collector-base voltage (open emitter)	V_{CBO}	max. 120	150	V
Collector-emitter voltage (open base)	V_{CEO}	max. 120	150	V
Collector current	I_C	max.	8.0	A
Total power dissipation up to $T_C = 25°C$	P_{tot}	max.	50	W
Junction temperature	T_j	max.	150	°C
Collector-emitter saturation voltage $I_C = 1A; I_B = 0.1A$	V_{CEsat}	max.	0.5	V
D.C. current gain $I_C = 0.1$ A; $V_{CE} = 2$ V	h_{FE}	min.	40	

RATINGS (at T_A=25°C unless otherwise specified)　　　　**15028**　　**15030**
　　　　　　　　　　　　　　　　　　　　　　　　　　　　　　　15029　　**15031**

Limiting values				
Collector-base voltage (open emitter)	V_{CBO}	max. 120	150	V
Collector-emitter voltage (open base)	V_{CEO}	max. 120	150	V

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Emitter base voltage (open collector)	V_{EBO}	max.	5.0	V
Collector current	I_C	max.	8.0	A
Collector current (Peak value)	I_C	max.	16	A
Base current	I_B	max.	2.0	A
Total power dissipation up to $T_C = 25°C$	P_{tot}	max.	50	W
Derate above 25°C		max.	0.4	W/°C
Total power dissipation up to $T_A = 25°C$	P_{tot}	max.	2.0	W
Derate above 25°C		max.	0.016	W/°C
Junction temperature	T_j	max.	150	°C
Storage temperature	T_{stg}		−65 to +150	°C

THERMAL RESISTANCE

From junction to case	$R_{th\,j-c}$	=	2.5	°C/W
From junction to ambient	$R_{th\,j-a}$	=	62.5	°C/W

CHARACTERISTICS

$T_{amb} = 25°C$ unless otherwise specified

			15028 15029	15030 15031	
Collector cutoff current					
$I_B = 0;\ V_{CE} = 120V$	I_{CEO}	max. 0.1		–	mA
$I_B = 0;\ V_{CE} = 150V$	I_{CEO}	max. –		0.1	mA
$I_E = 0;\ V_{CB} = 120V$	I_{CBO}	max. 10		–	µA
$I_E = 0;\ V_{CB} = 150V$	I_{CBO}	max. –		10	µA
Emitter cut-off current					
$I_C = 0;\ V_{EB} = 5V$	I_{EBO}	max.		10	µA
Breakdown voltages					
$I_C = 10\ mA;\ I_B = 0$	$V_{CEO(sus)}*$	min. 120		150	V
$I_C = 1\ mA;\ I_E = 0$	V_{CBO}	min. 120		150	V
$I_E = 1\ mA;\ I_C = 0$	V_{EBO}	min.	5.0		V
Saturation voltage					
$I_C = 1\ A;\ I_B = 0.1\ A$	$V_{CEsat}*$	max.	0.5		V
Base emitter on voltage					
$I_C = 1A;\ V_{CE} = 2V$	$V_{BE(on)}*$	max.	1.0		V
D.C. current gain					
$I_C = 0.1\ A;\ V_{CE} = 2\ V$	$h_{FE}*$	min.	40		
$I_C = 2\ A;\ V_{CE} = 2\ V$	$h_{FE}*$	min.	40		
$I_C = 3\ A;\ V_{CE} = 2\ V$	$h_{FE}*$	min.	40		
$I_C = 4\ A;\ V_{CE} = 2\ V$	$h_{FE}*$	min.	20		
Transition frequency f = 10 MHz					
$I_C = 500\ mA;\ V_{CE} = 10\ V$	$f_T(1)$	min.	30		MHz

* Pulse test: pulse width ≤ 300 µs; duty cycle ≤ 2%.
(1) $f_T = |h_{fe}| \cdot f_{test}$