

## Boca Semiconductor Corp.

### BSC

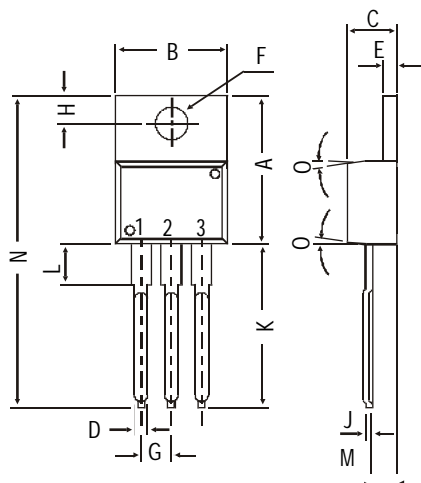
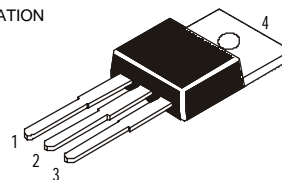
*MJE15028, 15030 NPN PLASTIC POWER TRANSISTORS*

*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**

		<b>15028</b>	<b>15030</b>
		<b>15029</b>	<b>15031</b>
Collector-base voltage (open emitter)	$V_{CB0}$	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 $T_C = 25^\circ\text{C}$	$P_{tot}$	max.	50 W
Junction temperature	$T_j$	max.	150 $^\circ\text{C}$
Collector-emitter saturation voltage $I_C = 1\text{A}; I_B = 0.1\text{A}$	$V_{CEsat}$	max.	0.5 V
D.C. current gain $I_C = 0.1\text{A}; V_{CE} = 2\text{V}$	$h_{FE}$	min.	40

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

		<b>15028</b>	<b>15030</b>
		<b>15029</b>	<b>15031</b>
<b>Limiting values</b>			
Collector-base voltage (open emitter)	$V_{CB0}$	max. 120	150 V
Collector-emitter voltage (open base)	$V_{CEO}$	max. 120	150 V

**MJE15028, MJE15030**  
**MJE15029, MJE15031**

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 $T_C = 25^\circ\text{C}$	$P_{tot}$	max.	50	W
Derate above $25^\circ\text{C}$		max.	0.4	W/°C
Total power dissipation up to $T_A = 25^\circ\text{C}$	$P_{tot}$	max.	2.0	W
Derate above $25^\circ\text{C}$		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	$R_{thj-c}$	=	2.5	°C/W
From junction to ambient	$R_{thj-a}$	=	62.5	°C/W

**CHARACTERISTICS**

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

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

\* Pulse test: pulse width  $\leq 300\ \mu\text{s}$ ; duty cycle  $\leq 2\%$ .

(1)  $f_T = |h_{FE}| \cdot f_{test}$