

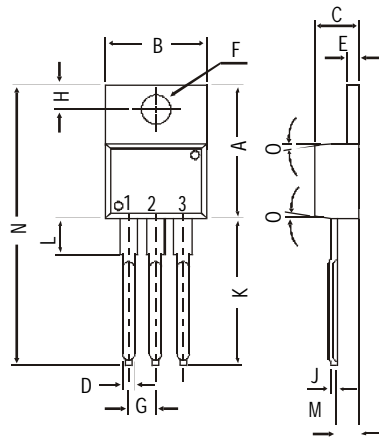
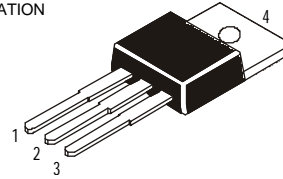
2N6486, 6487, 6488 NPN PLASTIC POWER TRANSISTORS  
2N6489, 6490, 6491 PNP PLASTIC POWER TRANSISTORS  
General Purpose Amplifier and Switching Applications

## Boca Semiconductor Corp.

### BSC

## 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**

	<b>6486 6487 6488</b>			<b>6489 6490 6491</b>		
Collector-base voltage (open emitter)	$V_{CB0}$	max.	50	70	90	V
Collector-emitter voltage (open base)	$V_{CEO}$	max.	40	60	80	V
Collector current	$I_C$	max.		15		A
Total power dissipation up to $T_C = 25^\circ\text{C}$	$P_{tot}$	max.		75		W
Junction temperature	$T_j$	max.		150		$^\circ\text{C}$
Collector-emitter saturation voltage $I_C = 5\text{ A}; I_B = 0.5\text{ A}$	$V_{CEsat}$	max.		1.3		V
D.C. current gain $I_C = 5\text{ A}; V_{CE} = 4\text{ V}$	$h_{FE}$	min.		20		
		max.		150		

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

## Limiting values

	<b>6486 6487 6488</b>			<b>6489 6490 6491</b>		
Collector-base voltage (open emitter)	$V_{CB0}$	max.	50	70	90	V
Collector-emitter voltage (open base)	$V_{CEO}$	max.	40	60	80	V
Emitter-base voltage (open collector)	$V_{EBO}$	max.		5.0		V

**2N6486, 2N6487, 2N6488**  
**2N6489, 2N6490, 2N6491**

Collector current	$I_C$	max.	15	A
Base current	$I_B$	max.	5.0	A
Total power dissipation up to $T_C = 25^\circ\text{C}$	$P_{tot}$	max.	75	W
Derate above $25^\circ\text{C}$		max.	0.6	$W^\circ\text{C}$
Total power dissipation up to $T_A = 25^\circ\text{C}$	$P_{tot}$	max.	1.8	W
Derate above $25^\circ\text{C}$		max.	0.014	$W^\circ\text{C}$
Junction temperature	$T_j$	max.	150	$^\circ\text{C}$
Storage temperature	$T_{stg}$		-65 to +150	$^\circ\text{C}$

**THERMAL RESISTANCE**

From junction to ambient	$R_{th\ j-a}$		70	$^\circ\text{C/W}$
From junction to case	$R_{th\ j-c}$		1.67	$^\circ\text{C/W}$

**CHARACTERISTICS**

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

**6486 6487 6488**  
**6489 6490 6491**

<b>Collector cutoff current</b>				
$I_B = 0; V_{CE} = 20\text{ V}$	$I_{CEO}$	max.	1.0	- - mA
$I_B = 0; V_{CE} = 30\text{ V}$	$I_{CEO}$	max.	-	1.0 - mA
$I_B = 0; V_{CE} = 40\text{ V}$	$I_{CEO}$	max.	-	- 1.0 mA
$V_{EB(off)} = 1.5\text{ V}; V_{CE} = 45\text{ V}$	$I_{CEX}$	max.	500	- - $\mu\text{A}$
$V_{EB(off)} = 1.5\text{ V}; V_{CE} = 65\text{ V}$	$I_{CEX}$	max.	-	500 - $\mu\text{A}$
$V_{EB(off)} = 1.5\text{ V}; V_{CE} = 85\text{ V}$	$I_{CEX}$	max.	-	- 500 $\mu\text{A}$
$V_{EB(off)} = 1.5\text{ V}; V_{CE} = 40\text{ V}; T_C=150^\circ\text{C}$	$I_{CEX}$	max.	5.0	- - mA
$V_{EB(off)} = 1.5\text{ V}; V_{CE} = 60\text{ V}; T_C=150^\circ\text{C}$	$I_{CEX}$	max.	-	5.0 - mA
$V_{EB(off)} = 1.5\text{ V}; V_{CE} = 80\text{ V}; T_C=150^\circ\text{C}$	$I_{CEX}$	max.	-	- 5.0 mA
<b>Emitter cut-off current</b>				
$I_C = 0; V_{EB} = 5\text{ V}$	$I_{EBO}$	max.	1.0	mA
<b>Breakdown voltages</b>				
$I_C = 200\text{ mA}; I_B = 0$	$V_{CEO(sus)}^*$	min.	40	60 80 V
$I_C = 1\text{ mA}; I_E = 0$	$V_{CBO}$	min.	50	70 90 V
$I_C = 200\text{ mA}; V_{BE} = 1.5\text{ V}$	$V_{CEX(sus)}^*$	min.	50	70 90 V
$I_E = 1\text{ mA}; I_C = 0$	$V_{EBO}$	min.	5.0	V
<b>Saturation voltages</b>				
$I_C = 5\text{ A}; I_B = 0.5\text{ A}$	$V_{CEsat}^*$	max.	1.3	V
$I_C = 15\text{ A}; I_B = 5\text{ A}$	$V_{CEsat}^*$	max.	3.5	V
<b>Base-emitter on voltage</b>				
$I_C = 5\text{ A}; V_{CE} = 4\text{ V}$	$V_{BE(on)}^*$	max.	1.3	V
$I_C = 15\text{ A}; V_{CE} = 4\text{ V}$	$V_{BE(on)}^*$	max.	3.5	V
<b>D.C. current gain</b>				
$I_C = 5\text{ A}; V_{CE} = 4\text{ V}$	$h_{FE}^*$	min.	20	
		max.	150	
$I_C = 15\text{ A}; V_{CE} = 4\text{ V}$	$h_{FE}^*$	min.	5.0	
<b>Transition frequency</b>				
$I_C = 1\text{ A}; V_{CE} = 4\text{ V}; f = 1\text{ MHz}$	$f_T(1)$	min.	5.0	MHz
<b>Small signal current gain</b>				
$I_C = 1.0\text{ A}; V_{CE} = 4\text{ V}; f = 1.0\text{ KHz}$	$h_{fe}$	min.	25	

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

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