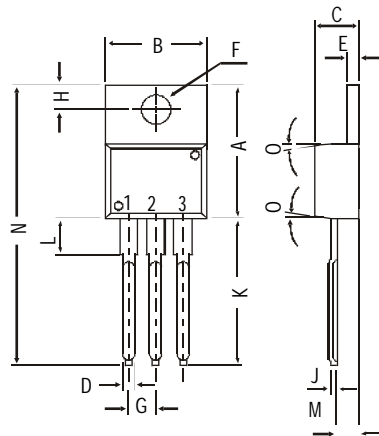
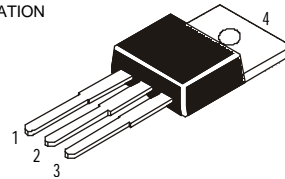


**TO-220 Plastic Package**

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

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

		<b>6486 6487 6488</b>			
		<b>6489 6490 6491</b>			
Collector-base voltage (open emitter)	$V_{CBO}$ 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 $T_C = 25^\circ C$	$P_{tot}$ max.		75		W
Junction temperature	$T_j$ max.		150		$^\circ C$
Collector-emitter saturation voltage	$V_{CEsat}$ max.		1.3		V
$I_C = 5 A; I_B = 0.5 A$					
D.C. current gain	$h_{FE}$ min.		20		
$I_C = 5 A; V_{CE} = 4 V$					
	$h_{FE}$ max.		150		

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

Limiting values		<b>6486 6487 6488</b>			
		<b>6489 6490 6491</b>			
Collector-base voltage (open emitter)	$V_{CBO}$ 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**

Collector cutoff current				
$I_B = 0; V_{CE} = 20\text{ V}$	$I_{CEO}$	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
Emitter cut-off current				
$I_C = 0; V_{EB} = 5\text{ V}$	$I_{EBO}$	max.	1.0	mA
Breakdown voltages				
$I_C = 200\text{ mA}; I_B = 0$	$V_{CEO(sus)}^*$	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
Saturation voltages				
$I_C = 5\text{ A}; I_B = 0.5\text{ A}$	$V_{CEsat}^*$	max.	1.3	V
$I_C = 15\text{ A}; I_B = 5\text{ A}$	$V_{CEsat}^*$	max.	3.5	V
Base-emitter on voltage				
$I_C = 5\text{ A}; V_{CE} = 4\text{ V}$	$V_{BE(on)}^*$	max.	1.3	V
$I_C = 15\text{ A}; V_{CE} = 4\text{ V}$	$V_{BE(on)}^*$	max.	3.5	V
D.C. current gain				
$I_C = 5\text{ A}; V_{CE} = 4\text{ V}$	$h_{FE}^*$	min.	20	
		max.	150	
$I_C = 15\text{ A}; V_{CE} = 4\text{ V}$	$h_{FE}^*$	min.	5.0	
Transition frequency				
$I_C = 1\text{ A}; V_{CE} = 4\text{ V}; f = 1\text{ MHz}$	$f_T(1)$	min.	5.0	MHz
Small signal current gain				
$I_C = 1.0\text{ A}; V_{CE} = 4\text{ V}; f = 1.0\text{ KHz}$	$h_{fe}$	min.	25	

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

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

## Notes

### Disclaimer

The product information and the selection guides facilitate selection of the CDIL's Discrete Semiconductor Device(s) best suited for application in your product(s) as per your requirement. It is recommended that you completely review our Data Sheet(s) so as to confirm that the Device(s) meet functionality parameters for your application. The information furnished on the CDIL Web Site/ CD is believed to be accurate and reliable. CDIL however, does not assume responsibility for inaccuracies or incomplete information. Furthermore, CDIL does not assume liability whatsoever, arising out of the application or use of any CDIL product; neither does it convey any license under its patent rights nor rights of others. These products are not designed for use in life saving/support appliances or systems. CDIL customers selling these products (either as individual Discrete Semiconductor Devices or incorporated in their end products), in any life saving/support appliances or systems or applications do so at their own risk and CDIL will not be responsible for any damages resulting from such sale(s).

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