

**TO-220 Plastic Package**

**MJE15028, MJE15030  
MJE15029, MJE15031**

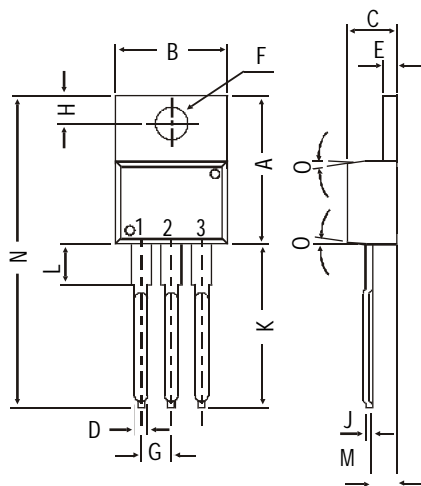
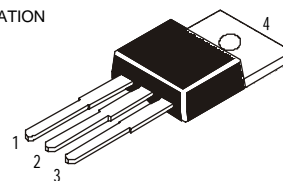
*MJE15028, 15030 NPN PLASTIC POWER TRANSISTORS*

*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>15029</b>	<b>15030</b> <b>15031</b>
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 $T_C = 25^\circ\text{C}$	$P_{tot}$	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>15029</b>	<b>15030</b> <b>15031</b>
Limiting values			
Collector-base voltage (open emitter)	$V_{CBO}$	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>15029</b>	<b>15030</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	- μA
$I_E = 0; V_{CB} = 150\text{V}$	$I_{CBO}$	max.	-	10 μA
Emitter cut-off current				
$I_C = 0; V_{EB} = 5\text{V}$	$I_{EBO}$	max.	10	μA
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  $\leq 300\text{ }\mu\text{s}$ ; duty cycle  $\leq 2\%$ .

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

## Customer 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 are 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).

CDIL strives for continuous improvement and reserves the right to change the specifications of its products without prior notice.



CDIL is a registered Trademark of  
**Continental Device India Limited**

C-120 Naraina Industrial Area, New Delhi 110 028, India.  
Telephone + 91-11-2579 6150, 5141 1112 Fax + 91-11-2579 5290, 5141 1119  
email@cdil.com www.cdilsemi.com