

TO-220 Plastic Package

**MJE15028, MJE15030
MJE15029, MJE15031**

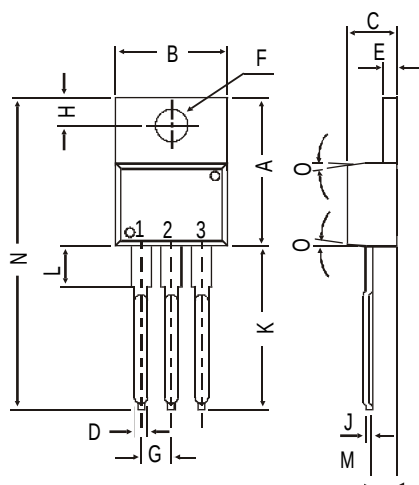
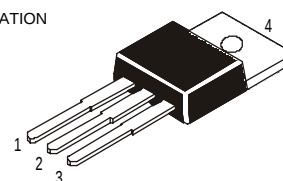
MJE15028, 15030 NPN PLASTIC POWER TRANSISTORS

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

		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 $T_C = 25^\circ\text{C}$	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)

		15028 15029	15030 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 $T_C = 25^\circ\text{C}$	P_{tot}	max.	50	W
Derate above 25°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°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

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

		15028 15029	15030 15031
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

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