

TO-220 Plastic Package

MJE15028, MJE15030 MJE15029, MJE15031

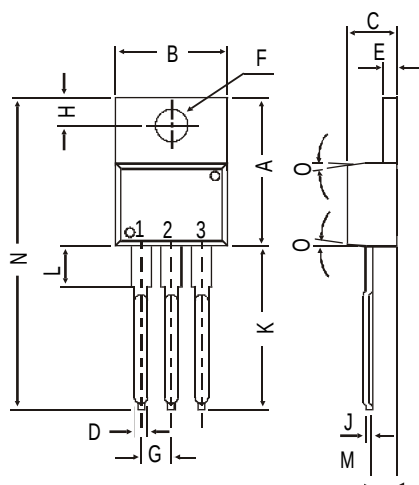
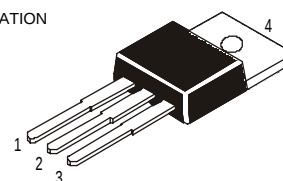
MJE15028, 15030 NPN PLASTIC POWER TRANSISTORS

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	V_{CEsat}	max.	0.5 V
$I_C = 1\text{ A}; I_B = 0.1\text{ A}$			
D.C. current gain	h_{FE}	min.	40
$I_C = 0.1\text{ A}; V_{CE} = 2\text{ V}$			

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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