

MJL3281A (NPN) MJL1302A (PNP)

Preferred Devices

Complementary Bipolar Power Transistors

Features

- Exceptional Safe Operating Area
- NPN/PNP Gain Matching within 10% from 50 mA to 5 A
- Excellent Gain Linearity
- High BVCEO
- High Frequency
- Pb-Free Packages are Available

Benefits

- Reliable Performance at Higher Powers
- Symmetrical Characteristics in Complementary Configurations
- Accurate Reproduction of Input Signal
- Greater Dynamic Range

Applications

- High-End Consumer Audio Products
 - ◆ Home Amplifiers
 - ◆ Home Receivers
- Professional Audio Amplifiers
 - ◆ Theater and Stadium Sound Systems
 - ◆ Public Address Systems (PAs)

MAXIMUM RATINGS (T_J = 25°C unless otherwise noted)

Rating	Symbol	Value	Unit
Collector-Emitter Voltage	V _{CEO}	260	Vdc
Collector-Base Voltage	V _{CBO}	260	Vdc
Emitter-Base Voltage	V _{EBO}	5.0	Vdc
Collector-Emitter Voltage – 1.5 V	V _{CEX}	260	Vdc
Collector Current – Continuous – Peak (Note 1)	I _C	15 25	Adc
Base Current – Continuous	I _B	1.5	Adc
Total Power Dissipation @ T _C = 25°C Derate Above 25°C	P _D	200 1.43	Watts W/°C
Operating and Storage Junction Temperature Range	T _J , T _{stg}	– 65 to +150	°C

THERMAL CHARACTERISTICS

Characteristic	Symbol	Max	Unit
Thermal Resistance, Junction-to-Case	R _{θJC}	0.625	°C/W

Maximum ratings are those values beyond which device damage can occur. Maximum ratings applied to the device are individual stress limit values (not normal operating conditions) and are not valid simultaneously. If these limits are exceeded, device functional operation is not implied, damage may occur and reliability may be affected.

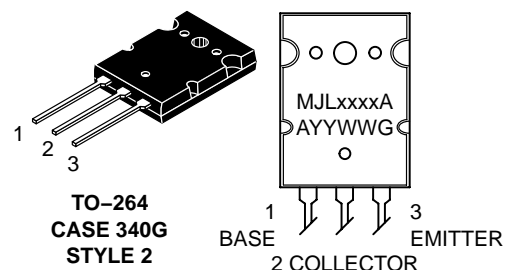
1. Pulse Test: Pulse Width = 5 ms, Duty Cycle < 10%.



ON Semiconductor®

15 AMPERES COMPLEMENTARY SILICON POWER TRANSISTORS 260 VOLTS 200 WATTS

MARKING DIAGRAM



xxxx = 3281 or 1302
A = Location Code
YY = Year
WW = Work Week
G = Pb-Free Package

ORDERING INFORMATION

Device	Package	Shipping
MJL3281A	TO-264	25 Units/Rail
MJL3281AG	TO-264 (Pb-Free)	25 Units/Rail
MJL1302A	TO-264	25 Units/Rail
MJL1302AG	TO-264 (Pb-Free)	25 Units/Rail

Preferred devices are recommended choices for future use and best overall value.

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ELECTRICAL CHARACTERISTICS (T_C = 25°C unless otherwise noted)

Characteristic	Symbol	Min	Max	Unit
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OFF CHARACTERISTICS

Collector–Emitter Sustaining Voltage (I _C = 100 mA _{dc} , I _B = 0)	V _{CEO(sus)}	260	–	V _{dc}
Collector Cutoff Current (V _{CB} = 260 V _{dc} , I _E = 0)	I _{CBO}	–	50	μA _{dc}
Emitter Cutoff Current (V _{EB} = 5 V _{dc} , I _C = 0)	I _{EBO}	–	5	μA _{dc}

SECOND BREAKDOWN

Second Breakdown Collector with Base Forward Biased (V _{CE} = 50 V _{dc} , t = 1 s (non-repetitive)) (V _{CE} = 100 V _{dc} , t = 1 s (non-repetitive))	I _{S/b}	4 1	– –	A _{dc}
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ON CHARACTERISTICS

DC Current Gain (I _C = 500 mA _{dc} , V _{CE} = 5 V _{dc}) (I _C = 1 A _{dc} , V _{CE} = 5 V _{dc}) (I _C = 3 A _{dc} , V _{CE} = 5 V _{dc}) (I _C = 5 A _{dc} , V _{CE} = 5 V _{dc}) (I _C = 8 A _{dc} , V _{CE} = 5 V _{dc})	h _{FE}	75 75 75 75 45	150 150 150 150 –	
Collector–Emitter Saturation Voltage (I _C = 10 A _{dc} , I _B = 1 A _{dc})	V _{CE(sat)}	–	3	V _{dc}

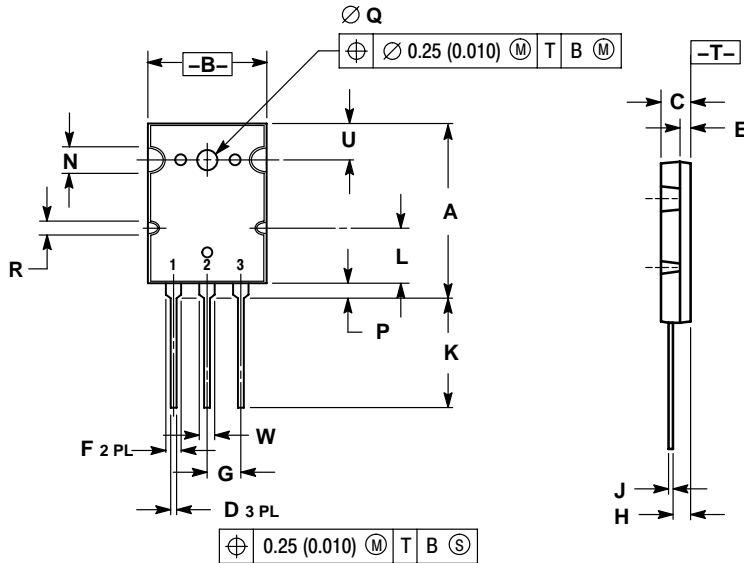
DYNAMIC CHARACTERISTICS

Current–Gain – Bandwidth Product (I _C = 1 A _{dc} , V _{CE} = 5 V _{dc} , f _{test} = 1 MHz)	f _T	30	–	MHz
Output Capacitance (V _{CB} = 10 V _{dc} , I _E = 0, f _{test} = 1 MHz)	C _{ob}	–	600	pF

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PACKAGE DIMENSIONS

TO-3PBL (TO-264)
CASE 340G-02
ISSUE J



NOTES:
1. DIMENSIONING AND TOLERANCING PER ANSI Y14.5M, 1982.
2. CONTROLLING DIMENSION: MILLIMETER.

DIM	MILLIMETERS		INCHES	
	MIN	MAX	MIN	MAX
A	28.0	29.0	1.102	1.142
B	19.3	20.3	0.760	0.800
C	4.7	5.3	0.185	0.209
D	0.93	1.48	0.037	0.058
E	1.9	2.1	0.075	0.083
F	2.2	2.4	0.087	0.102
G	5.45 BSC		0.215 BSC	
H	2.6	3.0	0.102	0.118
J	0.43	0.78	0.017	0.031
K	17.6	18.8	0.693	0.740
L	11.2 REF		0.411 REF	
N	4.35 REF		0.172 REF	
P	2.2	2.6	0.087	0.102
Q	3.1	3.5	0.122	0.137
R	2.25 REF		0.089 REF	
U	6.3 REF		0.248 REF	
W	2.8	3.2	0.110	0.125

STYLE 2:
PIN 1. BASE
2. COLLECTOR
3. EMITTER

*For additional information on our Pb-Free strategy and soldering details, please download the ON Semiconductor Soldering and Mounting Techniques Reference Manual, SOLDERRM/D.