

## 阅读申明

- 1.本站收集的数据手册和产品资料都来自互联网，版权归原作者所有。如读者和版权方有任何异议请及时告之，我们将妥善解决。
- 2.本站提供的中文数据手册是英文数据手册的中文翻译，其目的是协助用户阅读，该译文无法自动跟随原稿更新，同时也可能存在翻译上的不当。建议读者以英文原稿为参考以便获得更精准的信息。
- 3.本站提供的产品资料，来自厂商的技术支持或者使用者的心得体会等，其内容可能存在描述上的差异，建议读者做出适当判断。
- 4.如需与我们联系，请发邮件到marketing@iczoom.com，主题请标有“数据手册”字样。

## Read Statement

1. The datasheets and other product information on the site are all from network reference or other public materials, and the copyright belongs to the original author and original published source. If readers and copyright owners have any objections, please contact us and we will deal with it in a timely manner.
2. The Chinese datasheets provided on the website is a Chinese translation of the English datasheets. Its purpose is for reader's learning exchange only and do not involve commercial purposes. The translation cannot be automatically updated with the original manuscript, and there may also be improper translations. Readers are advised to use the English manuscript as a reference for more accurate information.
3. All product information provided on the website refer to solutions from manufacturers' technical support or users the contents may have differences in description, and readers are advised to take the original article as the standard.
4. If you have any questions, please contact us at marketing@iczoom.com and mark the subject with "Datasheets" .

# MJW0281A (NPN) MJW0302A (PNP)

Preferred Devices

## Complementary NPN-PNP Power Bipolar Transistors

These complementary devices are lower power versions of the popular MJW3281A and MJW1302A audio output transistors. With superior gain linearity and safe operating area performance, these transistors are ideal for high fidelity audio amplifier output stages and other linear applications.

### Features

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

### Benefits

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

### Applications

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

### MAXIMUM RATINGS

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 30	Adc
Base Current – Continuous	$I_B$	1.5	Adc
Total Power Dissipation @ $T_C = 25^\circ\text{C}$	$P_D$	150	Watts
Operating and Storage Junction Temperature Range	$T_J, T_{stg}$	- 65 to +150	$^\circ\text{C}$

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.

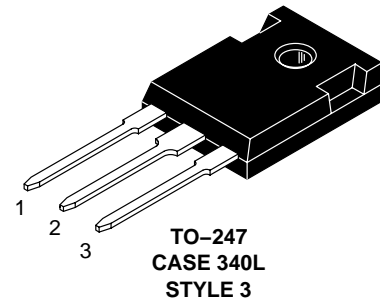
1. Pulse Test: Pulse Width = 5.0 ms, Duty Cycle < 10%.



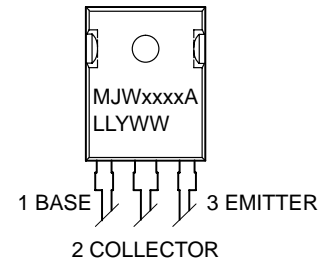
**ON Semiconductor®**

<http://onsemi.com>

**15 AMPERES  
COMPLEMENTARY  
SILICON POWER  
TRANSISTORS  
260 VOLTS  
150 WATTS**



### MARKING DIAGRAM



MJWxxxxA = Device Code  
 xxxx = 0281 OR 0302  
 LL = Location Code  
 Y = Year  
 WW = Work Week

### ORDERING INFORMATION

Device	Package	Shipping
MJW0281A	TO-247	30 Units/Rail
MJW0302A	TO-247	30 Units/Rail

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

# MJW0281A (NPN) MJW0302A (PNP)

## THERMAL CHARACTERISTICS

Characteristic	Symbol	Value	Unit
Thermal Resistance, Junction-to-Case	$R_{\theta JC}$	0.83	$^{\circ}\text{C}/\text{W}$

## ELECTRICAL CHARACTERISTICS ( $T_C = 25^{\circ}\text{C}$ unless otherwise noted)

Characteristic	Symbol	Min	Max	Unit
----------------	--------	-----	-----	------

### OFF CHARACTERISTICS

Collector-Emitter Sustaining Voltage ( $I_C = 30\text{ mA}$ , $I_B = 0$ )	$V_{CEO(sus)}$	260	–	V
Collector Cutoff Current ( $V_{CB} = 260\text{ V}$ , $I_E = 0$ )	$I_{CBO}$	–	10	$\mu\text{A}$
Emitter Cutoff Current ( $V_{EB} = 5.0\text{ V}$ , $I_C = 0$ )	$I_{EBO}$	–	5.0	$\mu\text{A}$

### ON CHARACTERISTICS

DC Current Gain ( $I_C = 0.5\text{ A}$ , $V_{CE} = 5.0\text{ V}$ ) ( $I_C = 1.0\text{ A}$ , $V_{CE} = 5.0\text{ V}$ ) ( $I_C = 3.0\text{ A}$ , $V_{CE} = 5.0\text{ V}$ )	$h_{FE}$	75 75 75	150 150 150	–
Collector-Emitter Saturation Voltage ( $I_C = 5.0\text{ A}$ , $I_B = 0.5\text{ A}$ )	$V_{CE(sat)}$	–	1.0	V
Base-Emitter On Voltage ( $I_C = 5.0\text{ A}$ , $V_{CE} = 5.0\text{ V}$ )	$V_{BE(on)}$	–	1.2	V

### DYNAMIC CHARACTERISTICS

Current-Gain – Bandwidth Product ( $I_C = 1.0\text{ A}$ , $V_{CE} = 5.0\text{ V}$ , $f_{test} = 1.0\text{ MHz}$ )	$f_T$	30	–	MHz
Output Capacitance ( $V_{CB} = 10\text{ V}$ , $I_E = 0$ , $f_{test} = 1.0\text{ MHz}$ )	$C_{ob}$	–	400	pF

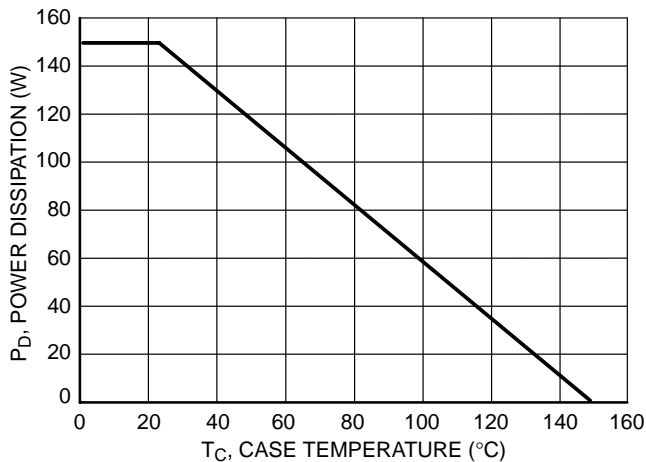


Figure 1. Power Derating

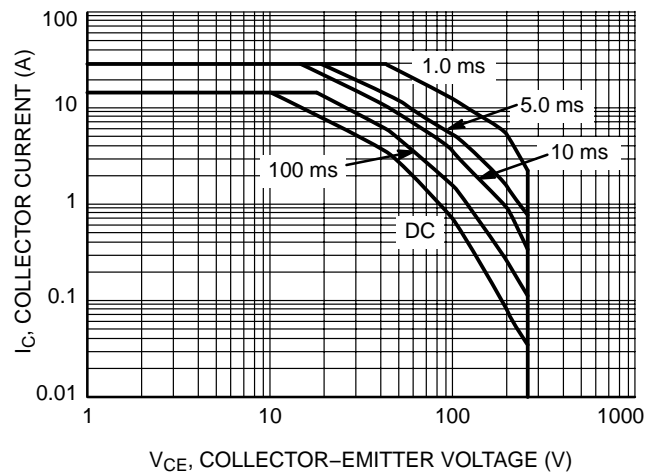


Figure 2. Safe Operating Area

# MJW0281A (NPN) MJW0302A (PNP)

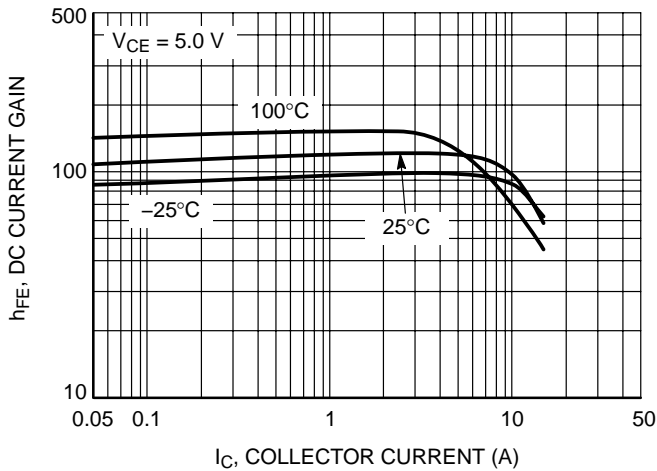


Figure 3. MJW0281A DC Current Gain

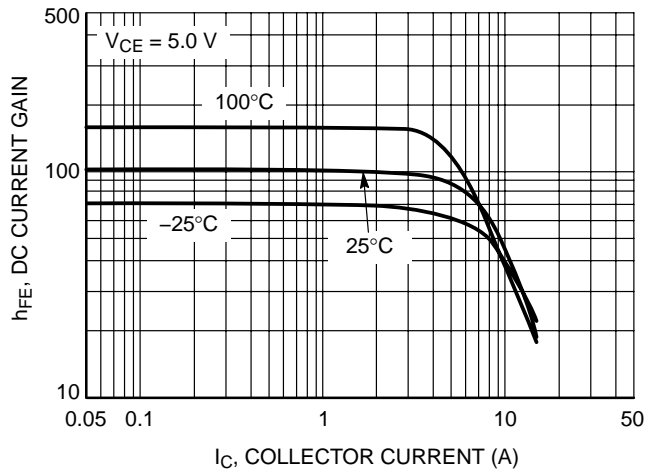


Figure 4. MJW0302A DC Current Gain

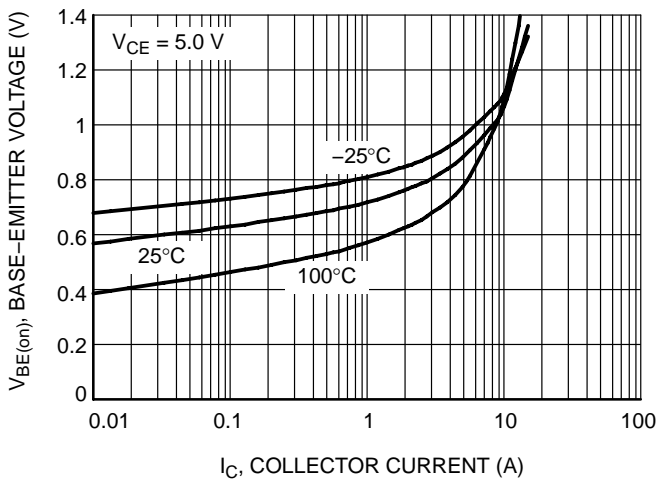


Figure 5. MJW0281A Base-Emitter Voltage

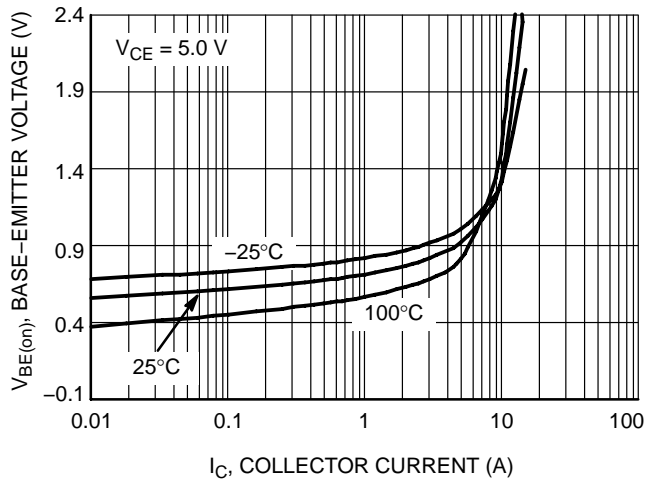


Figure 6. MJW0302A Base-Emitter Voltage

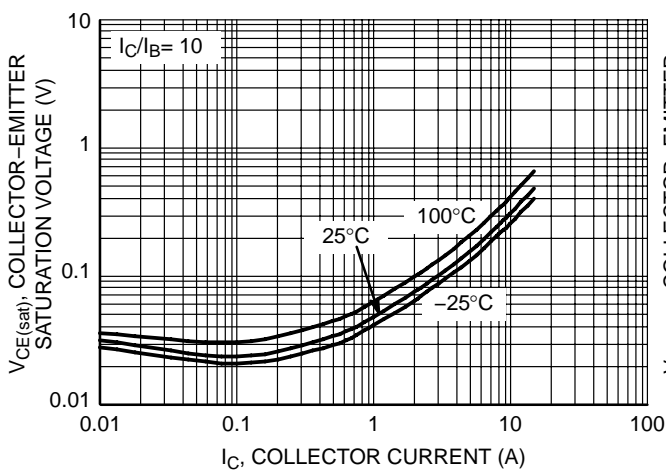


Figure 7. MJW0281A Saturation Voltage

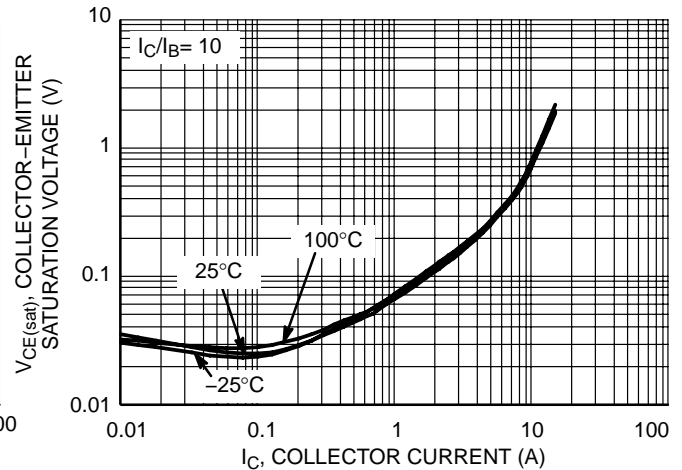


Figure 8. MJW0302A Saturation Voltage

# MJW0281A (NPN) MJW0302A (PNP)

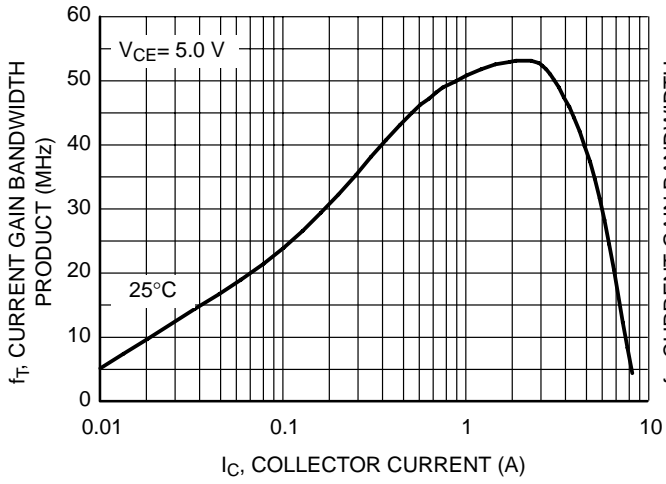


Figure 9. MJW0281A Current Gain Bandwidth Product

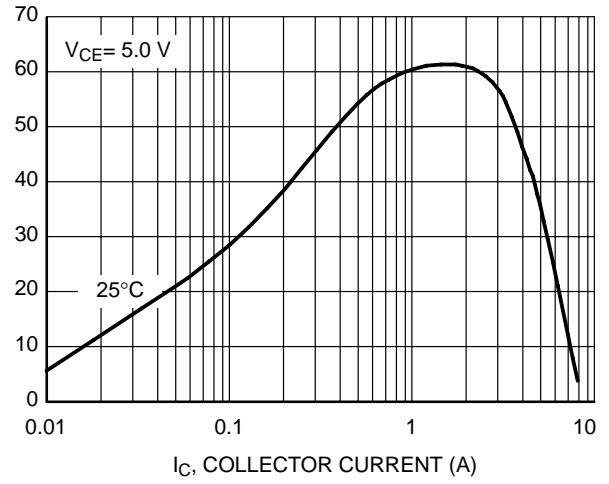
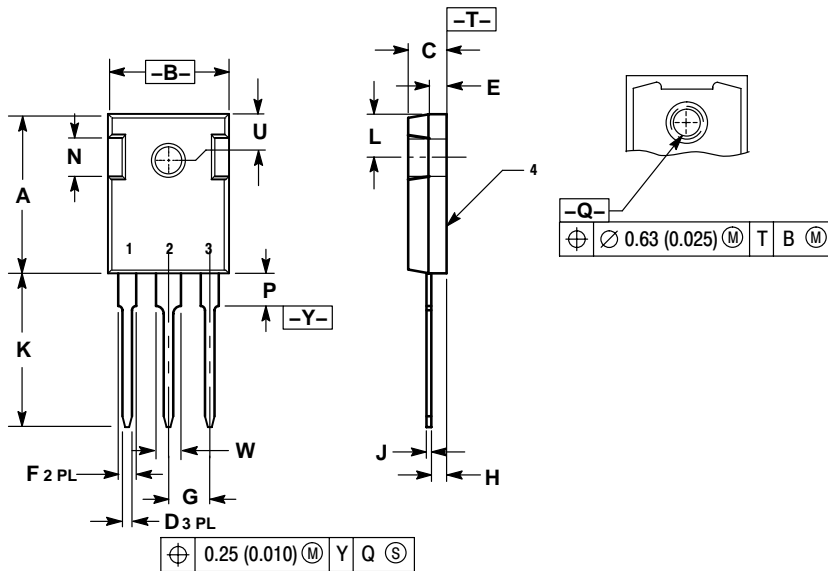


Figure 10. MJW0302A Current Gain Bandwidth Product

# MJW0281A (NPN) MJW0302A (PNP)

## PACKAGE DIMENSIONS

TO-247  
CASE 340L-02  
ISSUE D




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

DIM	MILLIMETERS		INCHES	
	MIN	MAX	MIN	MAX
A	20.32	21.08	0.800	0.830
B	15.75	16.26	0.620	0.640
C	4.70	5.30	0.185	0.209
D	1.00	1.40	0.040	0.055
E	2.20	2.60	0.087	0.102
F	1.65	2.13	0.065	0.084
G	5.45 BSC		0.215 BSC	
H	1.50	2.49	0.059	0.098
J	0.40	0.80	0.016	0.031
K	20.06	20.83	0.790	0.820
L	5.40	6.20	0.212	0.244
N	4.32	5.49	0.170	0.216
P	---	4.50	---	0.177
Q	3.55	3.65	0.140	0.144
U	6.15 BSC		0.242 BSC	
W	2.87	3.12	0.113	0.123

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

# MJW0281A (NPN) MJW0302A (PNP)

PowerBase is a trademark of Semiconductor Components Industries, LLC (SCILLC)

**ON Semiconductor** and  are registered trademarks of Semiconductor Components Industries, LLC (SCILLC). SCILLC reserves the right to make changes without further notice to any products herein. SCILLC makes no warranty, representation or guarantee regarding the suitability of its products for any particular purpose, nor does SCILLC assume any liability arising out of the application or use of any product or circuit, and specifically disclaims any and all liability, including without limitation special, consequential or incidental damages. "Typical" parameters which may be provided in SCILLC data sheets and/or specifications can and do vary in different applications and actual performance may vary over time. All operating parameters, including "Typicals" must be validated for each customer application by customer's technical experts. SCILLC does not convey any license under its patent rights nor the rights of others. SCILLC products are not designed, intended, or authorized for use as components in systems intended for surgical implant into the body, or other applications intended to support or sustain life, or for any other application in which the failure of the SCILLC product could create a situation where personal injury or death may occur. Should Buyer purchase or use SCILLC products for any such unintended or unauthorized application, Buyer shall indemnify and hold SCILLC and its officers, employees, subsidiaries, affiliates, and distributors harmless against all claims, costs, damages, and expenses, and reasonable attorney fees arising out of, directly or indirectly, any claim of personal injury or death associated with such unintended or unauthorized use, even if such claim alleges that SCILLC was negligent regarding the design or manufacture of the part. SCILLC is an Equal Opportunity/Affirmative Action Employer. This literature is subject to all applicable copyright laws and is not for resale in any manner.

## PUBLICATION ORDERING INFORMATION

### LITERATURE FULFILLMENT:

Literature Distribution Center for ON Semiconductor  
P.O. Box 61312, Phoenix, Arizona 85082-1312 USA  
**Phone:** 480-829-7710 or 800-344-3860 Toll Free USA/Canada  
**Fax:** 480-829-7709 or 800-344-3867 Toll Free USA/Canada  
**Email:** [orderlit@onsemi.com](mailto:orderlit@onsemi.com)

**N. American Technical Support:** 800-282-9855 Toll Free  
USA/Canada

**Japan:** ON Semiconductor, Japan Customer Focus Center  
2-9-1 Kamimeguro, Meguro-ku, Tokyo, Japan 153-0051  
**Phone:** 81-3-5773-3850

**ON Semiconductor Website:** <http://onsemi.com>

**Order Literature:** <http://www.onsemi.com/litorder>

For additional information, please contact your  
local Sales Representative.

**MJW0281A/D**