

# Power Transistors

## NPN Silicon DPAK For Surface Mount Applications

### NJD2873

Designed for high-gain audio amplifier applications.

#### Features

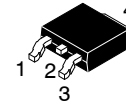
- High DC Current Gain
- Low Collector-Emitter Saturation Voltage
- High Current-Gain - Bandwidth Product
- Epoxy Meets UL 94 V-0 @ 0.125 in
- NJV Prefix for Automotive and Other Applications Requiring Unique Site and Control Change Requirements; AEC-Q101 Qualified and PPAP Capable
- These Devices are Pb-Free, Halogen Free/BFR Free and are RoHS Compliant

#### MAXIMUM RATINGS

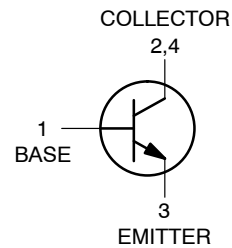
Symbol	Rating	Value	Unit
$V_{CB}$	Collector-Base Voltage	50	Vdc
$V_{CEO}$	Collector-Emitter Voltage	50	Vdc
$V_{EB}$	Emitter-Base Voltage	5	Vdc
$I_C$	Collector Current – Continuous	2	Adc
$I_{CM}$	Collector Current – Peak	3	Adc
$I_B$	Base Current	0.4	Adc
$P_D$	Total Device Dissipation @ $T_C = 25\text{ }^\circ\text{C}$ Derate above $25\text{ }^\circ\text{C}$	15 0.1	W W/ $^\circ\text{C}$
$P_D$	Total Device Dissipation @ $T_A = 25\text{ }^\circ\text{C}^*$ Derate above $25\text{ }^\circ\text{C}$	1.68 0.011	W W/ $^\circ\text{C}$
$T_J, T_{stg}$	Operating and Storage Junction Temperature Range	-65 to +175	$^\circ\text{C}$
HBM	ESD – Human Body Model	3B	V
MM	ESD – Machine Model	C	V

Stresses exceeding those listed in the Maximum Ratings table may damage the device. If any of these limits are exceeded, device functionality should not be assumed, damage may occur and reliability may be affected.

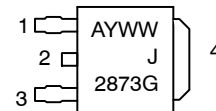
**SILICON  
POWER TRANSISTORS  
2 AMPERES  
50 VOLTS  
15 WATTS**



**DPAK  
CASE 369C  
STYLE 1**



#### MARKING DIAGRAM



A = Assembly Location  
Y = Year  
WW = Work Week  
G = Pb-Free Device

#### ORDERING INFORMATION

Device	Package	Shipping†
NJD2873T4G	DPAK (Pb-Free)	2,500 Units / Reel
NJVNJD2873T4G	DPAK (Pb-Free)	2,500 Units / Reel

† For information on tape and reel specifications, including part orientation and tape sizes, please refer to our Tape and Reel Packaging Specification Brochure, [BRD8011/D](#).

**THERMAL CHARACTERISTICS**

Symbol	Characteristic	Max	Unit
$R_{\theta JC}$ $R_{\theta JA}$	Thermal Resistance Junction-to-Case Junction-to-Ambient (Note 1)	10 89.3	°C/W

1. These ratings are applicable when surface mounted on the minimum pad sizes recommended.

**ELECTRICAL CHARACTERISTICS** ( $T_C = 25\text{ °C}$  unless otherwise noted)

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

**OFF CHARACTERISTICS**

$V_{CE(sus)}$	Collector-Emitter Sustaining Voltage (Note 2) ( $I_C = 10\text{ mAdc}$ , $I_B = 0$ )	50	–	Vdc
$I_{CBO}$	Collector Cutoff Current ( $V_{CB} = 50\text{ Vdc}$ , $I_E = 0$ )	–	100	nAdc
$I_{EBO}$	Emitter Cutoff Current ( $V_{BE} = 5\text{ Vdc}$ , $I_C = 0$ )	–	100	nAdc

**ON CHARACTERISTICS**

$h_{FE}$	DC Current Gain (Note 2) ( $I_C = 0.5\text{ A}$ , $V_{CE} = 2\text{ V}$ ) ( $I_C = 2\text{ Adc}$ , $V_{CE} = 2\text{ Vdc}$ ) ( $I_C = 0.75\text{ Adc}$ , $V_{CE} = 1.6\text{ Vdc}$ , $-40\text{ °C} \leq T_J \leq 150\text{ °C}$ )	120 40 80	360 – 360	–
$V_{CE(sat)}$	Collector-Emitter Saturation Voltage (Note 2) ( $I_C = 1\text{ A}$ , $I_B = 0.05\text{ A}$ )	–	0.3	Vdc
$V_{BE(sat)}$	Base-Emitter Saturation Voltage (Note 2) ( $I_C = 1\text{ A}$ , $I_B = 0.05\text{ Adc}$ )	–	1.2	Vdc
$V_{BE(on)}$	Base-Emitter On Voltage (Note 2) ( $I_C = 1\text{ Adc}$ , $V_{CE} = 2\text{ Vdc}$ ) ( $I_C = 0.75\text{ Adc}$ , $V_{CE} = 1.6\text{ Vdc}$ , $-40\text{ °C} \leq T_J \leq 150\text{ °C}$ )	– –	1.2 0.95	Vdc

**DYNAMIC CHARACTERISTICS**

$f_T$	Current-Gain – Bandwidth Product (Note 3) ( $I_C = 100\text{ mAdc}$ , $V_{CE} = 10\text{ Vdc}$ , $f_{test} = 10\text{ MHz}$ )	65	–	MHz
$C_{ob}$	Output Capacitance ( $V_{CB} = 10\text{ Vdc}$ , $I_E = 0$ , $f = 0.1\text{ MHz}$ )	–	80	pF

Product parametric performance is indicated in the Electrical Characteristics for the listed test conditions, unless otherwise noted. Product performance may not be indicated by the Electrical Characteristics if operated under different conditions.

2. Pulse Test: Pulse Width = 300  $\mu\text{s}$ , Duty Cycle  $\approx 2\%$ .

3.  $f_T = |h_{fe}| \cdot f_{test}$ .

TYPICAL CHARACTERISTICS

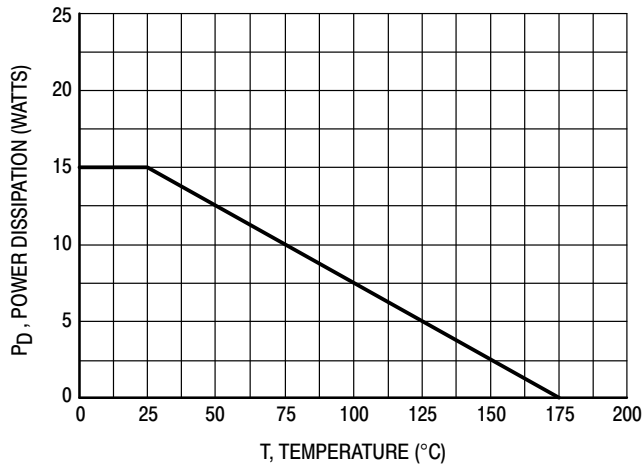


Figure 1. Power Derating

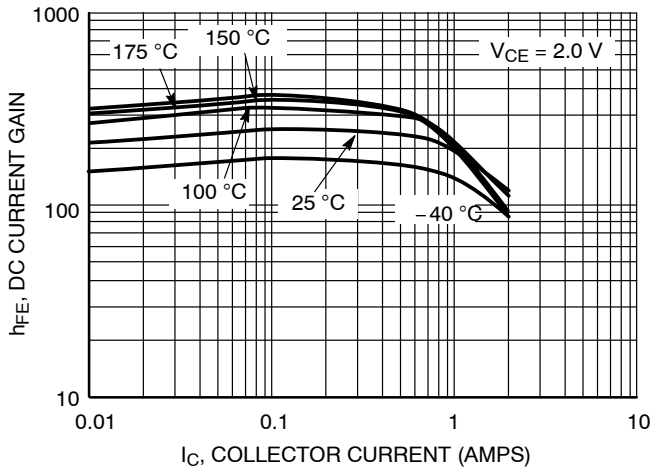


Figure 2. DC Current Gain

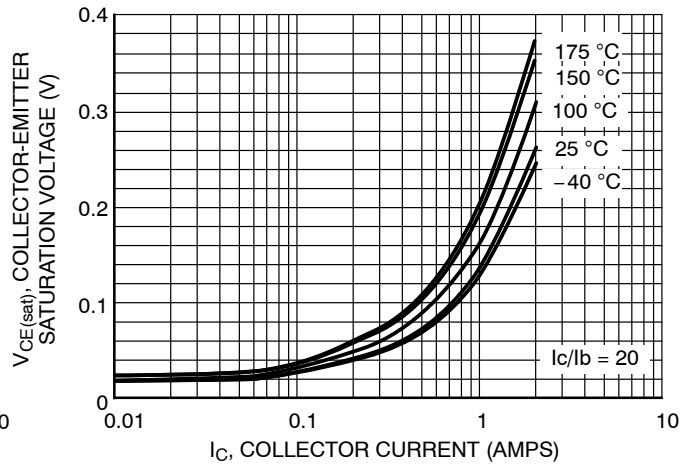


Figure 3. Collector-Emitter Saturation Voltage

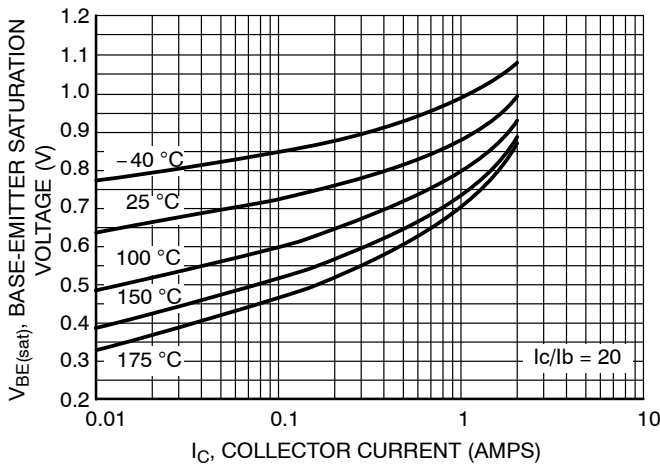


Figure 4. Base-Emitter Saturation Voltage

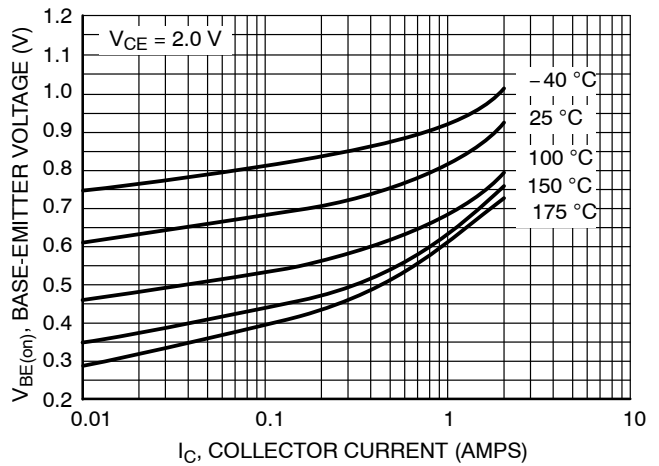


Figure 5. Base-Emitter Voltage

TYPICAL CHARACTERISTICS (continued)

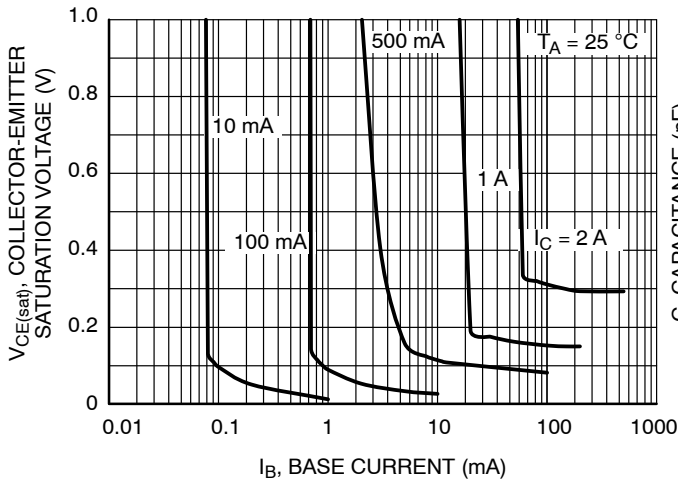


Figure 6. Saturation Region

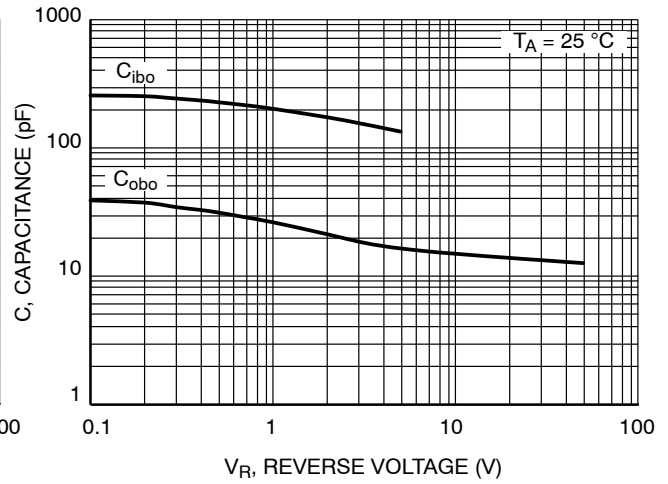


Figure 7. Capacitance

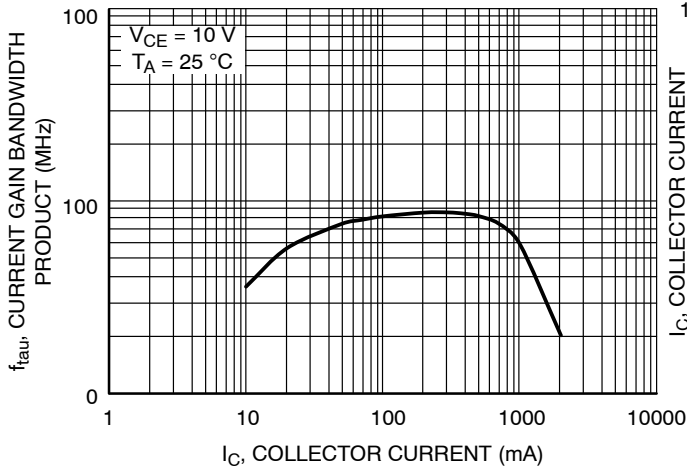


Figure 8. Saturation Region

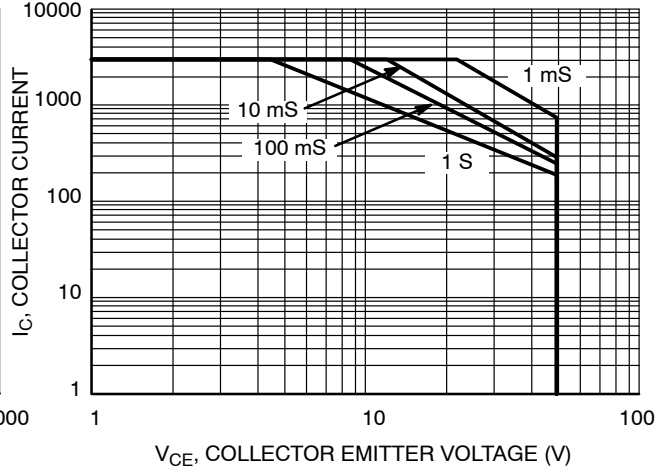


Figure 9. Capacitance

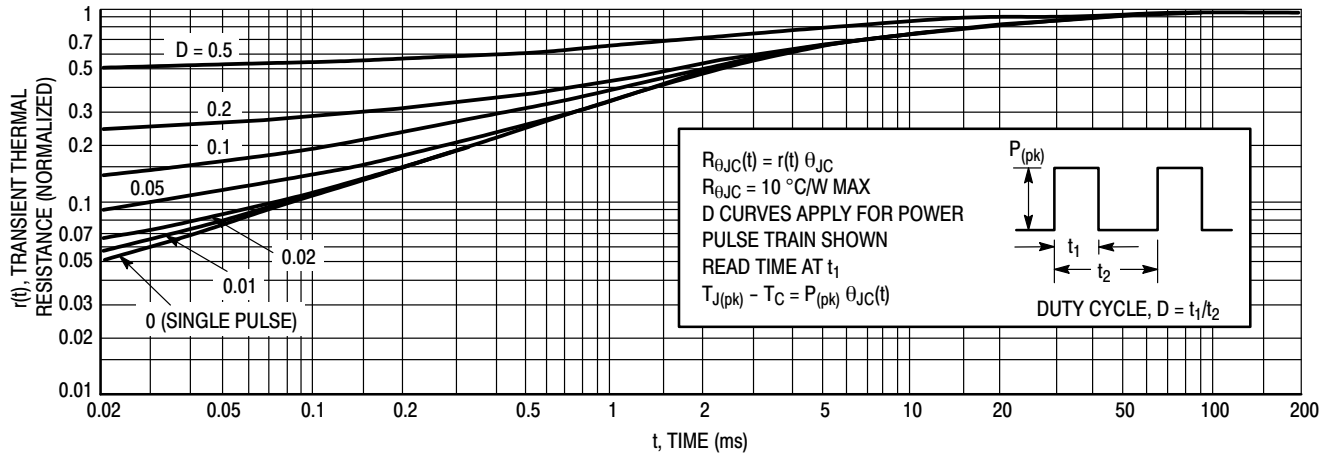
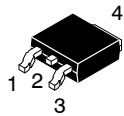


Figure 10. Thermal Response

# NJD2873

## REVISION HISTORY

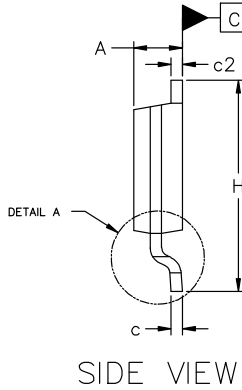
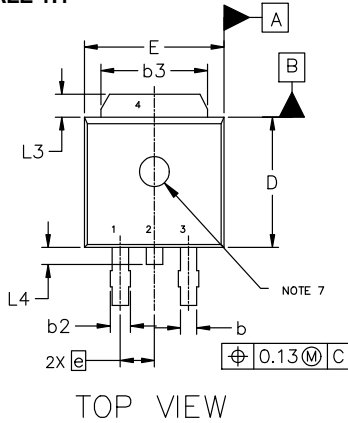
Revision	Description of Changes	Date
19	Rebranded the Data Sheet to <b>onsemi</b> format.	6/26/2025



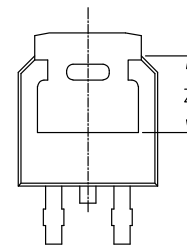
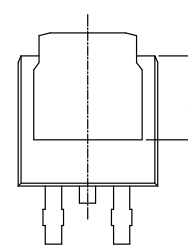
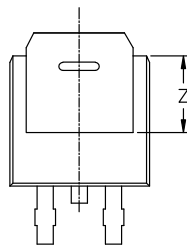
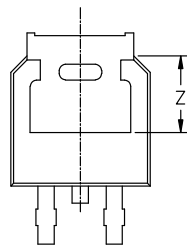
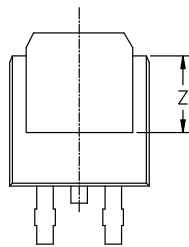
**DPAK3 6.10x6.54x2.28, 2.29P**  
CASE 369C  
ISSUE J

DATE 12 AUG 2025

SCALE 1:1



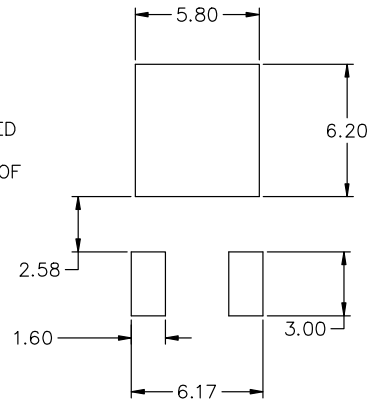
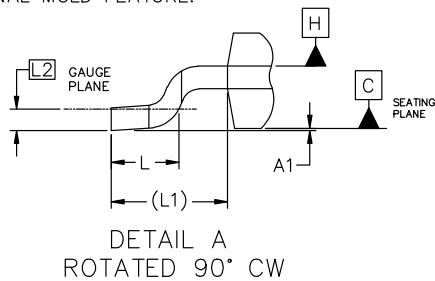
MILLIMETERS			
DIM	MIN	NOM	MAX
A	2.18	2.28	2.38
A1	0.00	---	0.13
b	0.63	0.76	0.89
b2	0.72	0.93	1.14
b3	4.57	5.02	5.46
c	0.46	0.54	0.61
c2	0.46	0.54	0.61
D	5.97	6.10	6.22
E	6.35	6.54	6.73
e	2.29 BSC		
H	9.40	9.91	10.41
L	1.40	1.59	1.78
L1	2.90 REF		
L2	0.51 BSC		
L3	0.89	---	1.27
L4	---	---	1.01
Z	3.93	---	---



ALTERNATE CONSTRUCTIONS

NOTES:

1. DIMENSIONING AND TOLERANCING ASME Y14.5M, 2018.
2. CONTROLLING DIMENSION: MILLIMETERS.
3. THERMAL PAD CONTOUR OPTIONAL WITHIN DIMENSIONS b3, L3, AND Z.
4. DIMENSIONS D AND E DO NOT INCLUDE MOLD FLASH, PROTRUSIONS, OR BURRS. MOLD FLASH, PROTRUSIONS, OR GATE BURRS SHALL NOT EXCEED 0.15mm PER SIDE.
5. DIMENSIONS D AND E ARE DETERMINED AT THE OUTERMOST EXTREMES OF THE PLASTIC BODY.
6. DATUMS A AND B ARE DETERMINED AT DATUM PLANE H.
7. OPTIONAL MOLD FEATURE.



RECOMMENDED MOUNTING FOOTPRINT\*

\*FOR ADDITIONAL INFORMATION ON OUR PB-FREE STRATEGY AND SOLDERING DETAILS, PLEASE DOWNLOAD THE ONSEMI SOLDERING AND MOUNTING TECHNIQUES REFERENCE MANUAL, SOLDERM/D.

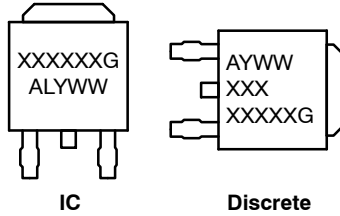
<b>DOCUMENT NUMBER:</b>	<b>98AON10527D</b>	Electronic versions are uncontrolled except when accessed directly from the Document Repository. Printed versions are uncontrolled except when stamped "CONTROLLED COPY" in red.
<b>DESCRIPTION:</b>	<b>DPAK3 6.10x6.54x2.28, 2.29P</b>	<b>PAGE 1 OF 2</b>

onsemi and Onsemi are trademarks of Semiconductor Components Industries, LLC dba onsemi or its subsidiaries in the United States and/or other countries. onsemi reserves the right to make changes without further notice to any products herein. onsemi makes no warranty, representation or guarantee regarding the suitability of its products for any particular purpose, nor does onsemi 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. onsemi does not convey any license under its patent rights nor the rights of others.

**DPAK3 6.10x6.54x2.28, 2.29P**  
**CASE 369C**  
**ISSUE J**

DATE 12 AUG 2025

**GENERIC  
MARKING DIAGRAM\***



- XXXXXX = Device Code
- A = Assembly Location
- L = Wafer Lot
- Y = Year
- WW = Work Week
- G = Pb-Free Package

\*This information is generic. Please refer to device data sheet for actual part marking. Pb-Free indicator, "G" or microdot "▪", may or may not be present. Some products may not follow the Generic Marking.

- |  |  |   |   |  |
|--|--|---|---|--|
| <p>STYLE 1:<br/> PIN 1. BASE<br/> 2. COLLECTOR<br/> 3. EMITTER<br/> 4. COLLECTOR</p> | <p>STYLE 2:<br/> PIN 1. GATE<br/> 2. DRAIN<br/> 3. SOURCE<br/> 4. DRAIN</p>          | <p>STYLE 3:<br/> PIN 1. ANODE<br/> 2. CATHODE<br/> 3. ANODE<br/> 4. CATHODE</p> | <p>STYLE 4:<br/> PIN 1. CATHODE<br/> 2. ANODE<br/> 3. GATE<br/> 4. ANODE</p>              | <p>STYLE 5:<br/> PIN 1. GATE<br/> 2. ANODE<br/> 3. CATHODE<br/> 4. ANODE</p>     |
| <p>STYLE 6:<br/> PIN 1. MT1<br/> 2. MT2<br/> 3. GATE<br/> 4. MT2</p>                 | <p>STYLE 7:<br/> PIN 1. GATE<br/> 2. COLLECTOR<br/> 3. EMITTER<br/> 4. COLLECTOR</p> | <p>STYLE 8:<br/> PIN 1. N/C<br/> 2. CATHODE<br/> 3. ANODE<br/> 4. CATHODE</p>   | <p>STYLE 9:<br/> PIN 1. ANODE<br/> 2. CATHODE<br/> 3. RESISTOR ADJUST<br/> 4. CATHODE</p> | <p>STYLE 10:<br/> PIN 1. CATHODE<br/> 2. ANODE<br/> 3. CATHODE<br/> 4. ANODE</p> |

<b>DOCUMENT NUMBER:</b>	<b>98AON10527D</b>	Electronic versions are uncontrolled except when accessed directly from the Document Repository. Printed versions are uncontrolled except when stamped "CONTROLLED COPY" in red.
<b>DESCRIPTION:</b>	<b>DPAK3 6.10x6.54x2.28, 2.29P</b>	<b>PAGE 2 OF 2</b>

**onsemi** and **Onsemi** are trademarks of Semiconductor Components Industries, LLC dba **onsemi** or its subsidiaries in the United States and/or other countries. **onsemi** reserves the right to make changes without further notice to any products herein. **onsemi** makes no warranty, representation or guarantee regarding the suitability of its products for any particular purpose, nor does **onsemi** 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. **onsemi** does not convey any license under its patent rights nor the rights of others.

**onsemi**, **Onsemi**, and other names, marks, and brands are registered and/or common law trademarks of Semiconductor Components Industries, LLC dba "**onsemi**" or its affiliates and/or subsidiaries in the United States and/or other countries. **onsemi** owns the rights to a number of patents, trademarks, copyrights, trade secrets, and other intellectual property. A listing of **onsemi**'s product/patent coverage may be accessed at [www.onsemi.com/site/pdf/Patent-Marking.pdf](http://www.onsemi.com/site/pdf/Patent-Marking.pdf). **onsemi** reserves the right to make changes at any time to any products or information herein, without notice. The information herein is provided "as-is" and **onsemi** makes no warranty, representation or guarantee regarding the accuracy of the information, product features, availability, functionality, or suitability of its products for any particular purpose, nor does **onsemi** 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. Buyer is responsible for its products and applications using **onsemi** products, including compliance with all laws, regulations and safety requirements or standards, regardless of any support or applications information provided by **onsemi**. "Typical" parameters which may be provided in **onsemi** 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. **onsemi** does not convey any license under any of its intellectual property rights nor the rights of others. **onsemi** products are not designed, intended, or authorized for use as a critical component in life support systems or any FDA Class 3 medical devices or medical devices with a same or similar classification in a foreign jurisdiction or any devices intended for implantation in the human body. Should Buyer purchase or use **onsemi** products for any such unintended or unauthorized application, Buyer shall indemnify and hold **onsemi** 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 **onsemi** was negligent regarding the design or manufacture of the part. **onsemi** is an Equal Opportunity/Affirmative Action Employer. This literature is subject to all applicable copyright laws and is not for resale in any manner.

## ADDITIONAL INFORMATION

### TECHNICAL PUBLICATIONS:

Technical Library: [www.onsemi.com/design/resources/technical-documentation](http://www.onsemi.com/design/resources/technical-documentation)  
onsemi Website: [www.onsemi.com](http://www.onsemi.com)

### ONLINE SUPPORT: [www.onsemi.com/support](http://www.onsemi.com/support)

For additional information, please contact your local Sales Representative at [www.onsemi.com/support/sales](http://www.onsemi.com/support/sales)