Power Transistors

PNP Silicon DPAK For Surface Mount Applications

NJD1718, NJVNJD1718

Designed for high-gain audio amplifier and power switching applications.

Features

- Low Collector-Emitter Saturation Voltage
- High Switching Speed
- 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 °C Derate above 25 °C	15 0.1	W W/°C
P_D	Total Device Dissipation @ T_A = 25 °C (Note 1) Derate above 25 °C	1.68 0.011	W W/°C
T_J, T_{stg}	Operating and Storage Junction Temperature Range	−65 to +150	°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.

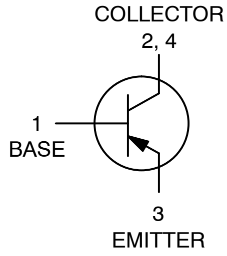
1. These ratings are applicable when surface mounted on the minimum pad sizes recommended.

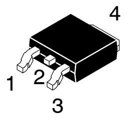
THERMAL CHARACTERISTICS

Symbol	Characteristic	Max	Unit
$R_{\theta JC}$ $R_{\theta JA}$	Thermal Resistance Junction-to-Case Junction-to-Ambient (Note 2)	10 89.3	°C/W

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

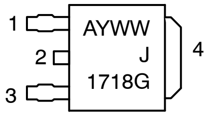
SILICON
POWER TRANSISTORS
2 AMPERES
50 VOLTS
15 WATTS





DPAK
CASE 369C
STYLE 1

MARKING DIAGRAM



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

ORDERING INFORMATION

Device	Package	Shipping†
NJD1718T4G	DPAK (Pb-Free)	2,500 / Tape & Reel
NJVNJD1718T4G	DPAK (Pb-Free)	2,500 / Tape & 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.

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

Symbol	Characteristic	Min	Typ	Max	Unit
OFF CHARACTERISTICS					
BV_{CEO}	Collector-Emitter Breakdown Voltage (Note 3) (I_C = –10 mAdc, I_B = 0)	–50		–	Vdc
I_{CBO}	Collector Cutoff Current (V_{CB} = –50 Vdc, I_E = 0)	–		–100	nAdc
I_{EBO}	Emitter Cutoff Current (V_{BE} = –5 Vdc, I_C = 0)	–		–100	nAdc
ON CHARACTERISTICS					
h_{FE}	DC Current Gain (Note 3) (I_C = –0.5 A, V_{CE} = 2 V) (I_C = –1.5 Adc, V_{CE} = 2 Vdc)	 70 40		 240 –	–
$V_{CE(sat)}$	Collector-Emitter Saturation Voltage (Note 3) (I_C = –1 A, I_B = –0.05 A)	–	–0.2	–0.5	Vdc
$V_{BE(sat)}$	Base-Emitter Saturation Voltage (Note 3) (I_C = –1 A, I_B = –0.05 Adc)	–	–	–1.2	Vdc
$V_{BE(on)}$	Base-Emitter On Voltage (Note 3) (I_C = –1 Adc, V_{CE} = –2 Vdc)	–	–	–1.2	Vdc
DYNAMIC CHARACTERISTICS					
f_T	Current-Gain – Bandwidth Product (Note 4) (I_C = –500 mAdc, V_{CE} = –2 Vdc, f_{test} = 10 MHz)	–	80	–	MHz
C_{ob}	Output Capacitance (V_{CB} = 10 Vdc, I_E = 0, f = 0.1 MHz)	–	33	–	pF
t_{ON}	Switching Timers V_{CC} = –30 V, I_C = –1 A	–	55	–	ns
t_{STG}		–	320	–	
t_f		–	40	–	

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.

3. Pulse Test: Pulse Width = 300 μs, Duty Cycle ≈ 2%.
4. $f_T = |h_{fe}| \bullet f_{test}$.

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TYPICAL CHARACTERISTICS

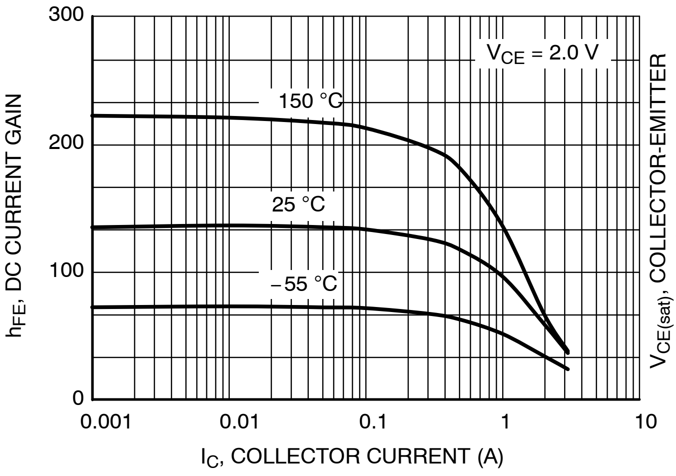

Figure 1. DC Current Gain

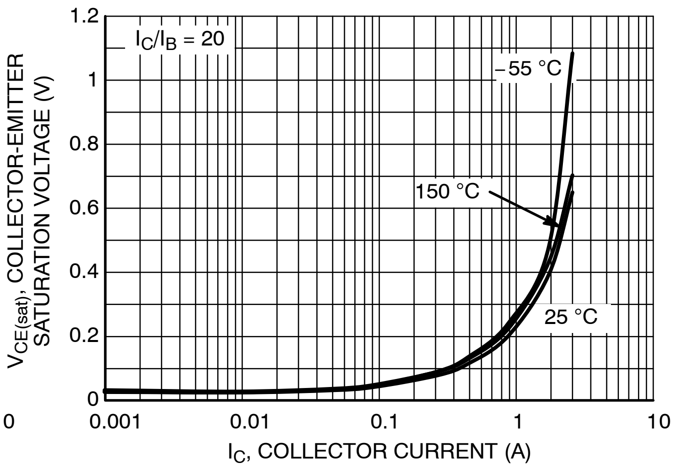

Figure 2. Collector-Emitter Saturation Voltage

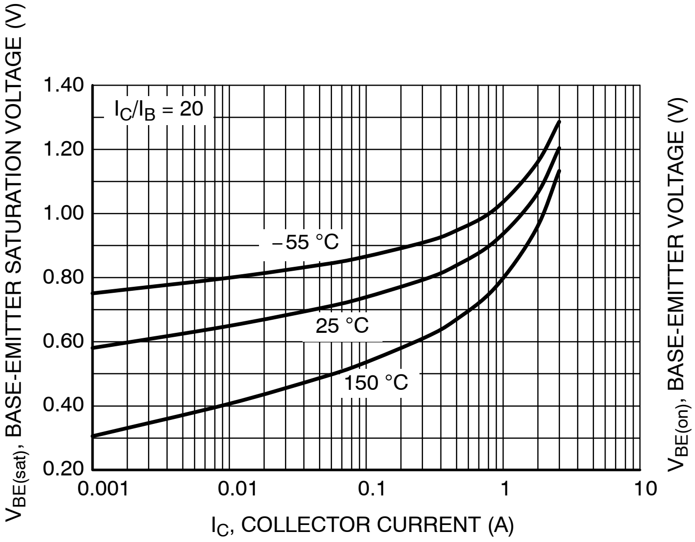

Figure 3. Base-Emitter Saturation Voltage

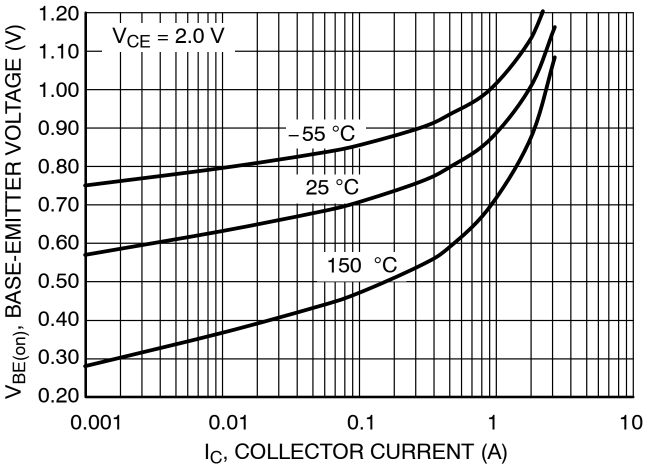

Figure 4. Base-Emitter Voltage

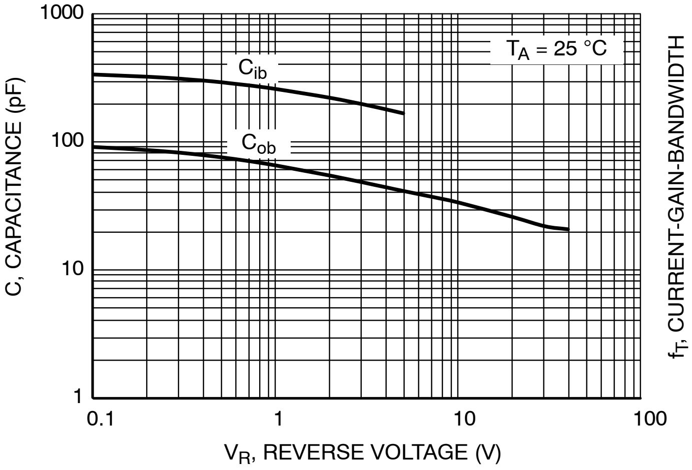

Figure 5. Capacitance

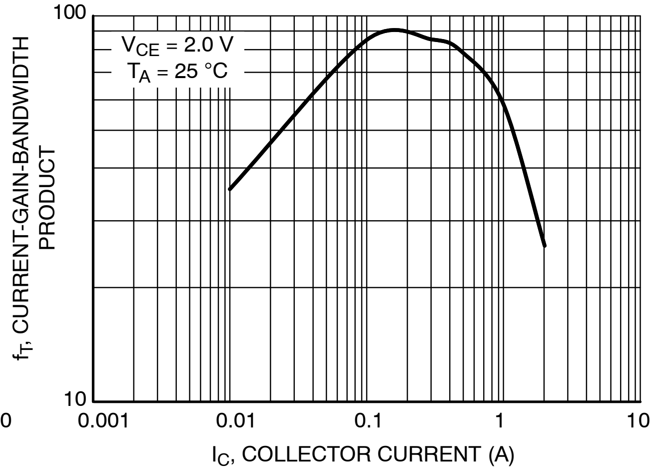

Figure 6. Current-Gain-Bandwidth Product

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TYPICAL CHARACTERISTICS (continued)

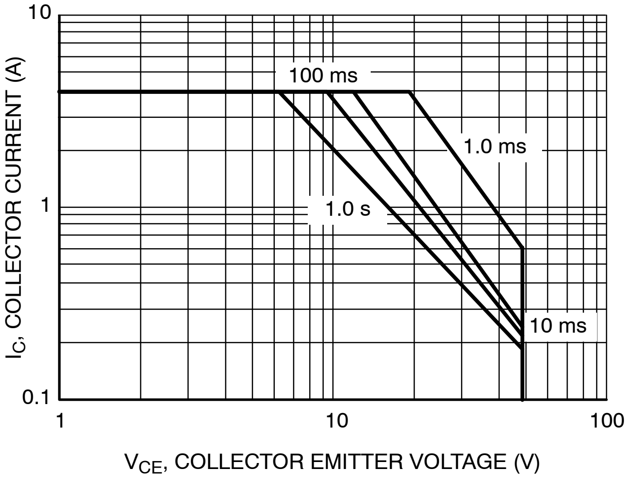

Figure 7. State Operating Area

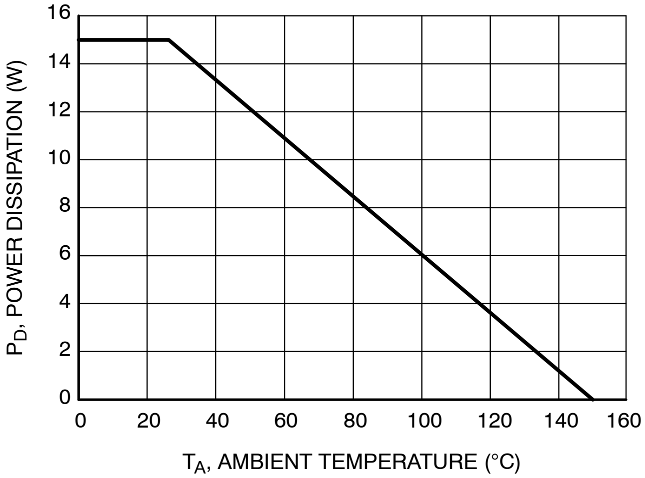

Figure 8. Power Derating

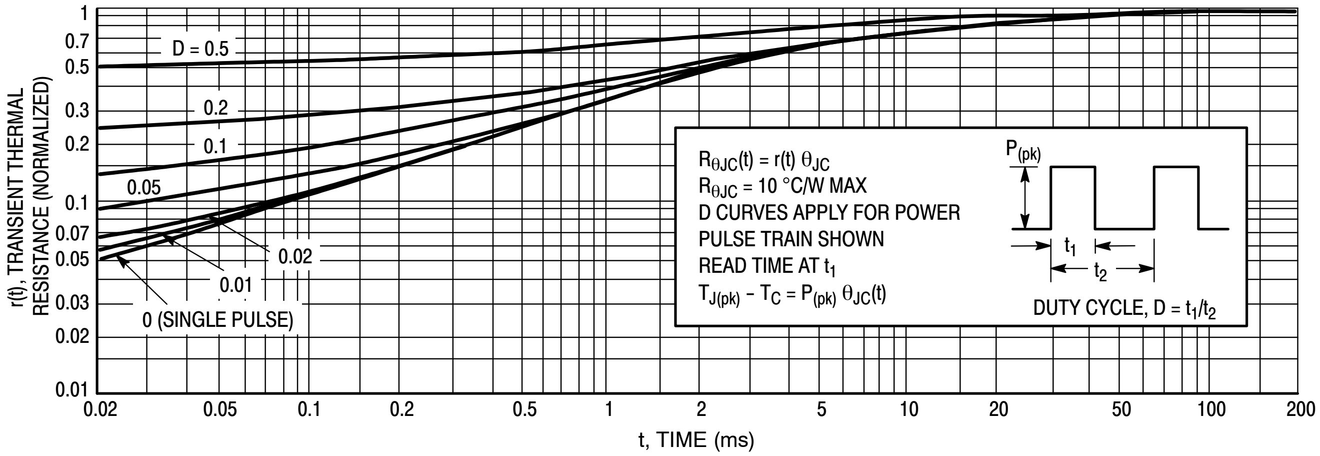

Figure 9. Thermal Response

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REVISION HISTORY

Revision	Description of Changes	Date
5	Rebranded the Data Sheet to **onsemi** format.	6/25/2025

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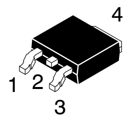
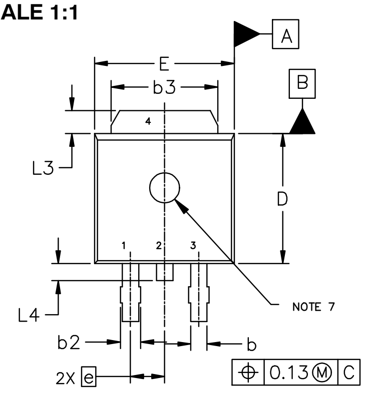


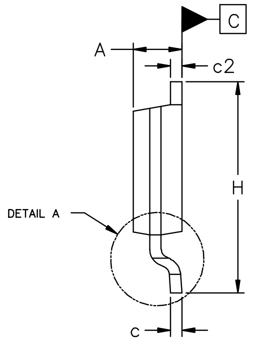
SCALE 1:1

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

DATE 12 AUG 2025

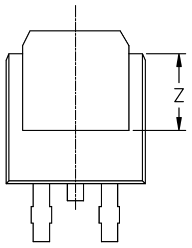


TOP VIEW

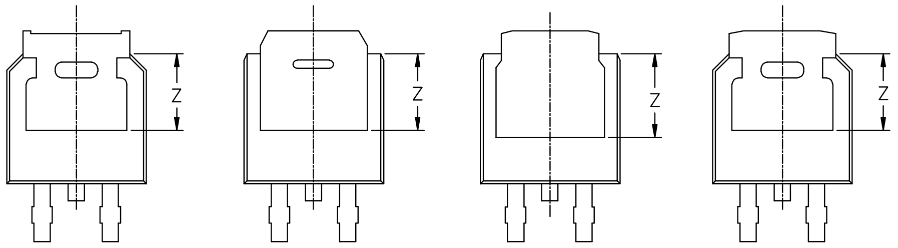


SIDE VIEW

	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	---	---



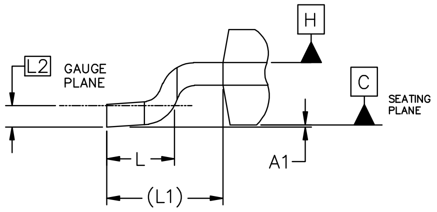
BOTTOM VIEW



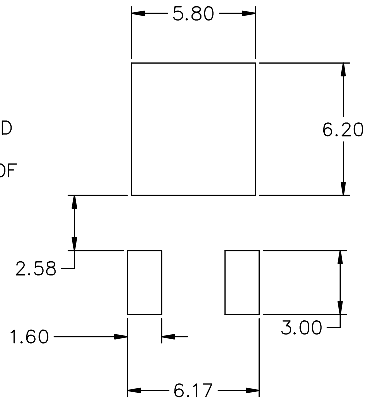
ALTERNATE CONSTRUCTIONS

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.



DETAIL A
ROTATED 90° CW



RECOMMENDED MOUNTING FOOTPRINT*

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

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DESCRIPTION:	**DPAK3 6.10x6.54x2.28, 2.29P**		**PAGE 1 OF 2**

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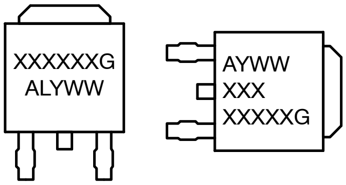
CASE 369C
ISSUE J

DATE 12 AUG 2025

GENERIC MARKING DIAGRAM*



IC **Discrete**

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.

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

STYLE 2:
PIN 1. GATE
2. DRAIN
3. SOURCE
4. DRAIN

STYLE 3:
PIN 1. ANODE
2. CATHODE
3. ANODE
4. CATHODE

STYLE 4:
PIN 1. CATHODE
2. ANODE
3. GATE
4. ANODE

STYLE 5:
PIN 1. GATE
2. ANODE
3. CATHODE
4. ANODE

STYLE 6:
PIN 1. MT1
2. MT2
3. GATE
4. MT2

STYLE 7:
PIN 1. GATE
2. COLLECTOR
3. EMITTER
4. COLLECTOR

STYLE 8:
PIN 1. N/C
2. CATHODE
3. ANODE
4. CATHODE

STYLE 9:
PIN 1. ANODE
2. CATHODE
3. RESISTOR ADJUST
4. CATHODE

STYLE 10:
PIN 1. CATHODE
2. ANODE
3. CATHODE
4. ANODE

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