

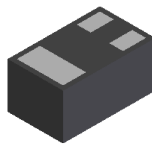
**Features**

- Epitaxial Die Construction
- Ultra-Small Leadless Surface Mount Package
- Ultra-low Profile (0.40mm max)
- Complementary NPN Type Available (DN0150ALP4 / DN0150BLP4)
- "Lead Free", RoHS Compliant (Note 1)
- Halogen and Antimony Free, "Green" Device (Note 2)
- Qualified to AEC-Q101 Standards for High Reliability

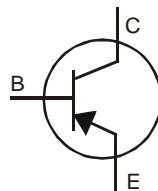
**Mechanical Data**

- Case: DFN1006H4-3
- Case Material: Molded Plastic, "Green" Molding Compound. UL Flammability Classification Rating 94V-0
- Moisture Sensitivity: Level 1 per J-STD-020
- Terminals: Finish — NiPdAu over Copper leadframe. Solderable per MIL-STD-202, Method 208
- Weight: 0.0008 grams (approximate)

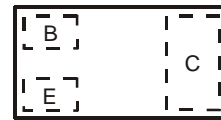
DFN1006H4-3



Bottom View



Device Symbol



Top View  
Device Schematic

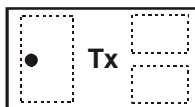
**Ordering Information** (Note 3)

Product	Marking	Reel size (inches)	Tape width (mm)	Quantity per reel
DP0150ALP4-7	T5	7	8	3,000
DP0150ALP4-7B	T5	7	8	10,000
DP0150BLP4-7	T6	7	8	3,000
DP0150BLP4-7B	T6	7	8	10,000

- Notes:
1. No purposefully added lead.
  2. Diodes Inc's "Green" policy can be found on our website at <http://www.diodes.com>
  3. For packaging details, go to our website at <http://www.diodes.com>.

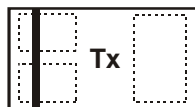
**Marking Information**

DP0150ALP4-7  
DP0150BLP4-7



Top View  
Dot Denotes  
Collector Side

DP0150ALP4-7B  
DP0150BLP4-7B



Top View  
Bar Denotes Base  
and Emitter Side

Tx = Product Type Marking Code  
T5 = DP0150ALP4  
T6 = DP0150BLP4

**Maximum Ratings** @T<sub>A</sub> = 25°C unless otherwise specified

Characteristic	Symbol	Value	Unit
Collector-Base Voltage	V <sub>CBO</sub>	-50	V
Collector-Emitter Voltage	V <sub>CEO</sub>	-50	V
Emitter-Base Voltage	V <sub>EBO</sub>	-5	V
Collector Current - Continuous	I <sub>C</sub>	-100	mA
Peak Pulse Collector Current	I <sub>CM</sub>	-200	mA
Base Current	I <sub>B</sub>	-30	mA

**Thermal Characteristics**

Characteristic	Symbol	Value	Unit
Power Dissipation (Note 4)	P <sub>D</sub>	450	mW
Thermal Resistance, Junction to Ambient (Note 4)	R <sub>θJA</sub>	278	°C/W
Operating and Storage Temperature Range	T <sub>J</sub> , T <sub>STG</sub>	-55 to +150	°C

**Electrical Characteristics** @T<sub>A</sub> = 25°C unless otherwise specified

Characteristic	Symbol	Min	Typ	Max	Unit	Test Condition
<b>OFF CHARACTERISTICS</b>						
Collector-Base Breakdown Voltage	V <sub>(BR)CBO</sub>	-50	—	—	V	I <sub>C</sub> = -10μA, I <sub>E</sub> = 0
Collector-Emitter Breakdown Voltage (Note 5)	V <sub>(BR)CEO</sub>	-50	—	—	V	I <sub>C</sub> = -1mA, I <sub>B</sub> = 0
Emitter-Base Breakdown Voltage	V <sub>(BR)EBO</sub>	-5	—	—	V	I <sub>E</sub> = -10μA, I <sub>C</sub> = 0
Collector Cut-Off Current	I <sub>CB0</sub>	—	—	-0.1	μA	V <sub>CB</sub> = -50V, I <sub>E</sub> = 0
Emitter Cut-Off Current	I <sub>EBO</sub>	—	—	-0.1	μA	V <sub>EB</sub> = -5V, I <sub>C</sub> = 0
<b>ON CHARACTERISTICS (Note 5)</b>						
Collector-Emitter Saturation Voltage	V <sub>CE(SAT)</sub>	—	-0.15	-0.3	V	I <sub>C</sub> = -100mA, I <sub>B</sub> = -10mA
DC Current Gain	h <sub>FE</sub>	120	—	240	—	V <sub>CE</sub> = -6V, I <sub>C</sub> = -2mA
		200	—	400		
<b>SMALL SIGNAL CHARACTERISTICS</b>						
Transition Frequency	f <sub>T</sub>	80	—	—	MHz	V <sub>CE</sub> = -10V, I <sub>E</sub> = 1mA f = 30MHz
Output Capacitance	C <sub>ob</sub>	—	1.6	—	pF	V <sub>CB</sub> = -10V, I <sub>E</sub> = 0, f = 1MHz

- Notes: 4. Device mounted on FR-4 PCB with minimum recommended pad layout.  
5. Measured under pulsed conditions. Pulse width = 300μs. Duty cycle ≤2%

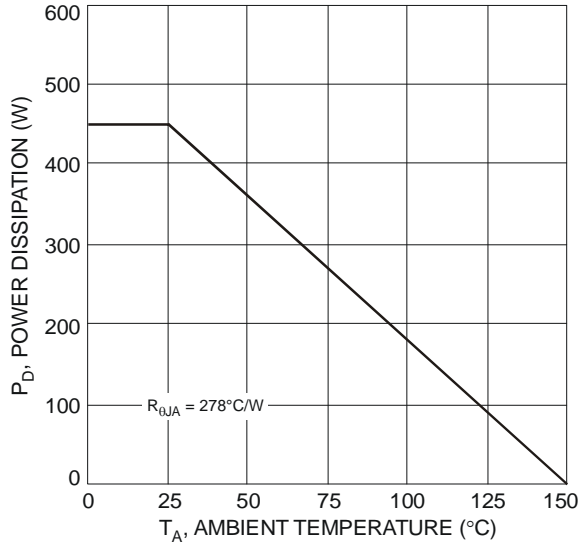


Fig. 1 Power Dissipation vs. Ambient Temperature (Note 3)

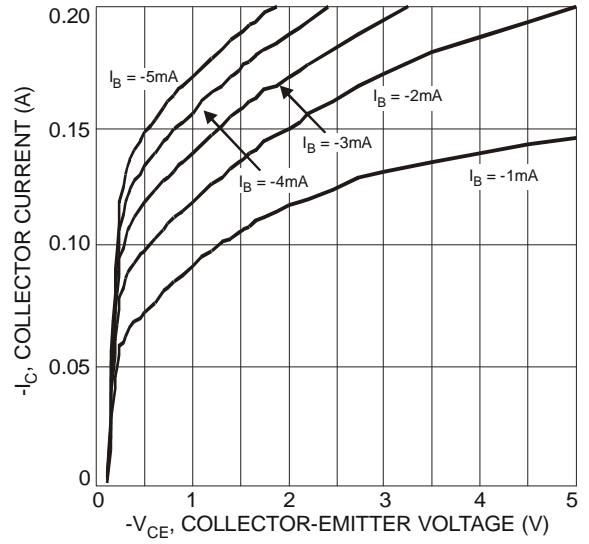


Fig. 2 Typical Collector Current vs. Collector-Emitter Voltage (DN0150BLP4)

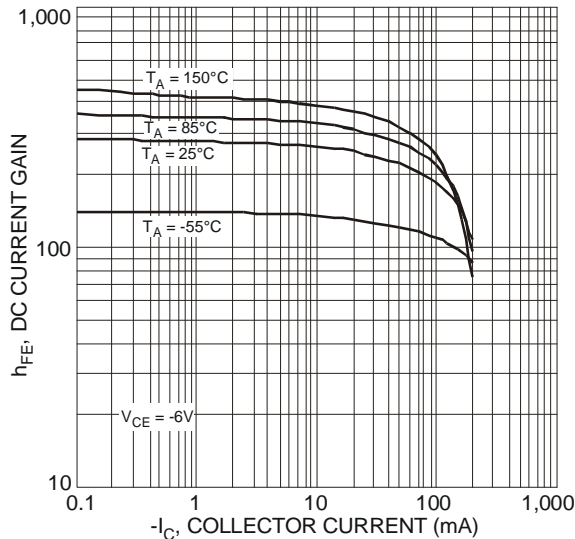


Fig. 3 Typical DC Current Gain vs. Collector Current (DN0150BLP4)

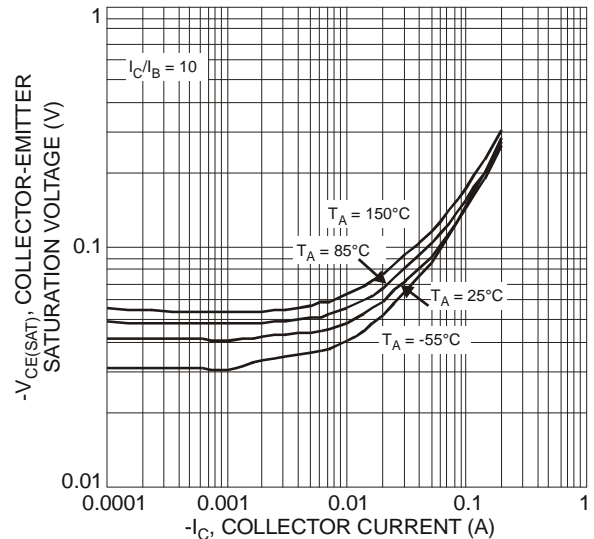


Fig. 4 Typical Collector-Emitter Saturation Voltage vs. Collector Current

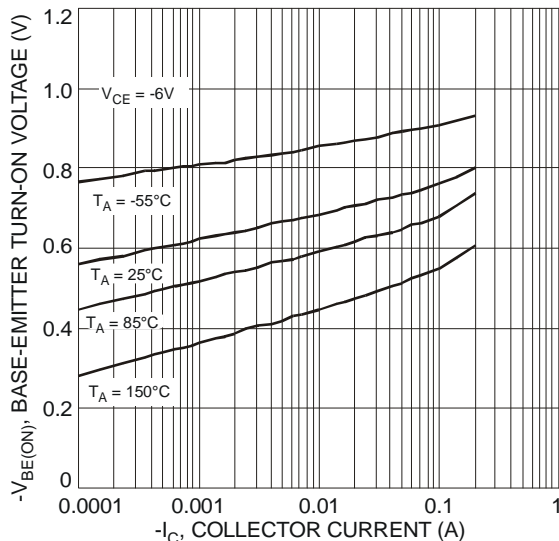


Fig. 5 Typical Base-Emitter Turn-On Voltage vs. Collector Current

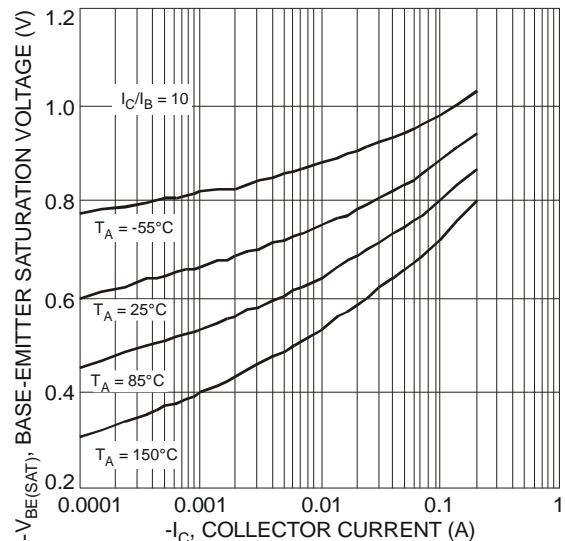


Fig. 6 Typical Base-Emitter Saturation Voltage vs. Collector Current

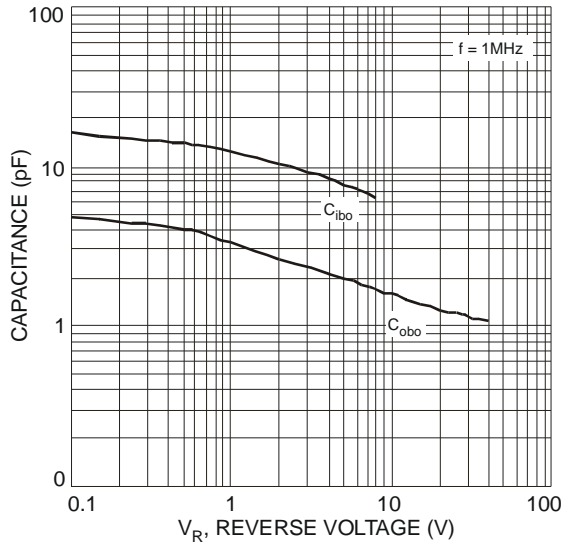


Fig. 7 Typical Capacitance Characteristics

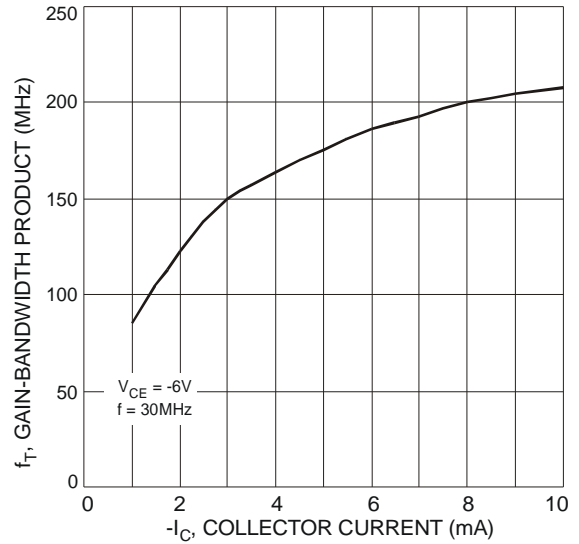
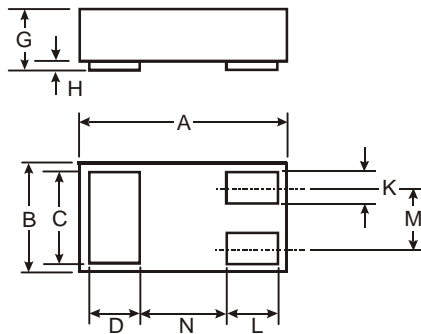


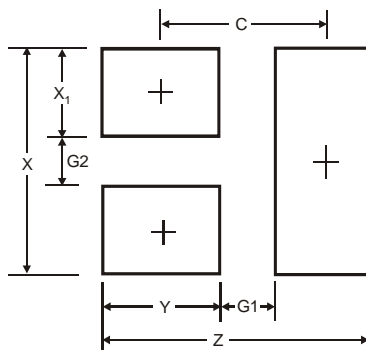
Fig. 8 Typical Gain-Bandwidth Product vs. Collector Current

**Package Outline Dimensions**



DFN1006H4-3			
Dim	Min	Max	Typ
A	0.95	1.075	1.00
B	0.55	0.675	0.60
C	0.45	0.55	0.50
D	0.20	0.30	0.25
G	—	0.40	—
H	0	0.05	0.02
K	0.10	0.20	0.15
L	0.20	0.30	0.25
M	—	—	0.35
N	—	—	0.40
All Dimensions in mm			

**Suggested Pad Layout**



Dimensions	Value (in mm)
Z	1.1
G1	0.3
G2	0.2
X	0.7
X1	0.25
Y	0.4
C	0.7

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