Absolute Maximum Ratings (@T_A = +25°C, unless otherwise specified.)

Characteristic	Symbol	Value	Unit
Collector-Base Voltage	V_{CBO}	60	V
Collector-Emitter Voltage	V_{CEO}	50	V
Emitter-Base Voltage	V_{EBO}	5	V
Collector Current – Continuous	I_C	100	mA
Peak Pulse Collector Current	I_{CM}	200	mA
Base Current	I_B	30	mA

Thermal Characteristics (@T_A = +25°C, unless otherwise specified.)

Characteristic		Symbol	Value	Unit
Power Dissipation	(Note 5)	P_D	400	mW
	(Note 6)		1000	
Thermal Resistance, Junction to Ambient	(Note 5)	$R_{\theta JA}$	310	°C/W
	(Note 6)		120	
Thermal Resistance, Junction to Lead	(Note 7)	$R_{\theta JL}$	120	°C/W
Operating and Storage and Temperature Range		T_J, T_{STG}	-55 to +150	°C

ESD Ratings (Note 8)

Characteristic	Symbol	Value	Unit	JEDEC Class
Electrostatic Discharge - Human Body Model	ESD HBM	4,000	V	3A
Electrostatic Discharge - Machine Model	ESD MM	400	V	C

Electrical Characteristics (@T_A = +25°C, unless otherwise specified.)

Characteristic		Symbol	Min	Typ	Max	Unit	Test Condition
OFF CHARACTERISTICS							
Collector-Base Breakdown Voltage		BV_{CBO}	60	—	—	V	I_C = 10μA, I_E = 0
Collector-Emitter Breakdown Voltage (Note 8)		BV_{CEO}	50	—	—	V	I_C = 1mA, I_B = 0
Emitter-Base Breakdown Voltage		BV_{EBO}	5	—	—	V	I_E = 10μA, I_C = 0
Collector Cut-Off Current		I_{CBO}	—	—	0.1	μA	V_{CB} = 60V, I_E = 0
Emitter Cut-Off Current		I_{EBO}	—	—	0.1	μA	V_{EB} = 5V, I_C = 0
ON CHARACTERISTICS (Note 9)							
Collector-Emitter Saturation Voltage		$V_{CE(SAT)}$	—	0.10	0.25	V	I_C = 100mA, I_B = 10mA
DC Current Gain	DN0150ALP4	h_{FE}	120	—	240	—	V_{CE} = 6V, I_C = 2mA
	DN0150BLP4		200	—	400		
SMALL SIGNAL CHARACTERISTICS							
Transition Frequency		f_T	60	—	—	MHz	V_{CE} = 10V, I_E = -1mA f = 30MHz
Output Capacitance		C_{ob}	—	1.3	—	pF	V_{CB} = 10V, I_E = 0, f = 1MHz

Notes:
5. For the device mounted on minimum recommended pad layout 1oz copper that is on a single-sided 1.6mm FR4 PCB; device is measured under still air conditions whilst operating in steady state condition. The entire exposed collector pad is attached to the heatsink.
6. Same as Note 5, except the exposed collector pad is mounted on 25mm x 25mm 2oz copper.
7. Thermal resistance from junction to solder-point (on the exposed collector pad).
8. Refer to JEDEC specification JESD22-A114 and JESD22-A115.
9. Measured under pulsed conditions. Pulse width ≤ 300μs. Duty cycle ≤ 2%.

Electrical Characteristics (@T_A = +25°C, unless otherwise specified.)

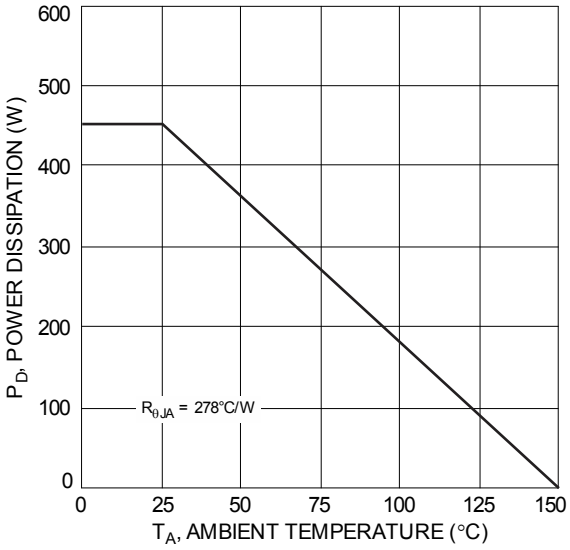


Fig. 1 Power Dissipation vs. Ambient Temperature (Note 3)

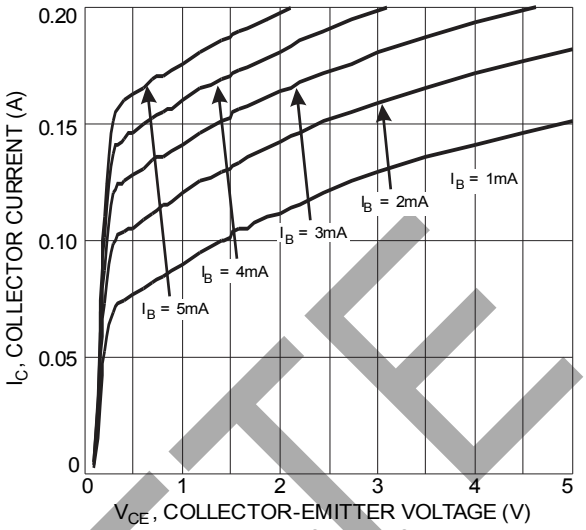


Fig. 2 Typical Collector Current
vs. Collector-Emitter Voltage (DN0150BLP4)

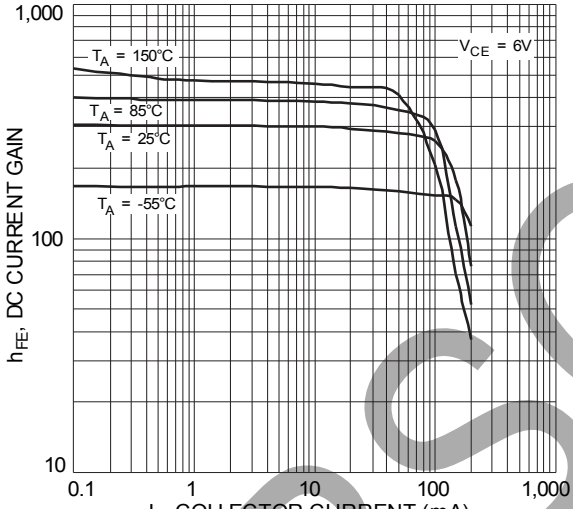


Fig. 3 Typical DC Current Gain
vs. Collector Current (DN0150BLP4)

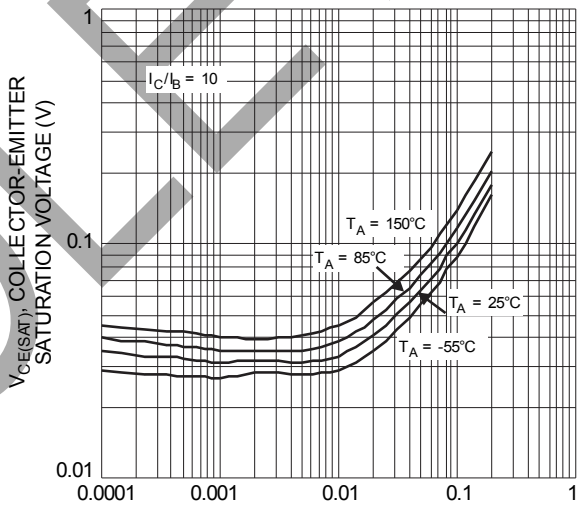


Fig. 4 Typical Collector-Emitter Saturation Voltage
vs. Collector Current

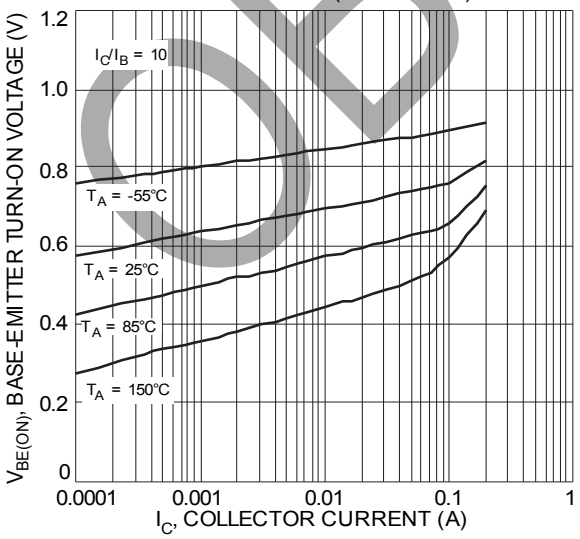


Fig. 5 Typical Base-Emitter Turn-On Voltage
vs. Collector Current

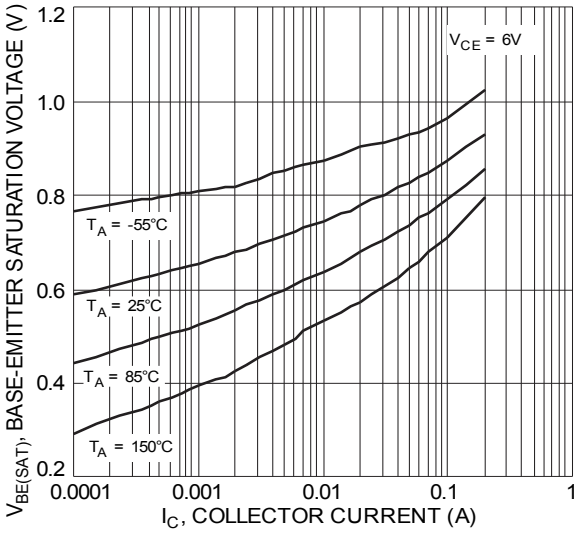


Fig. 6 Typical Base-Emitter Saturation Voltage
vs. Collector Current

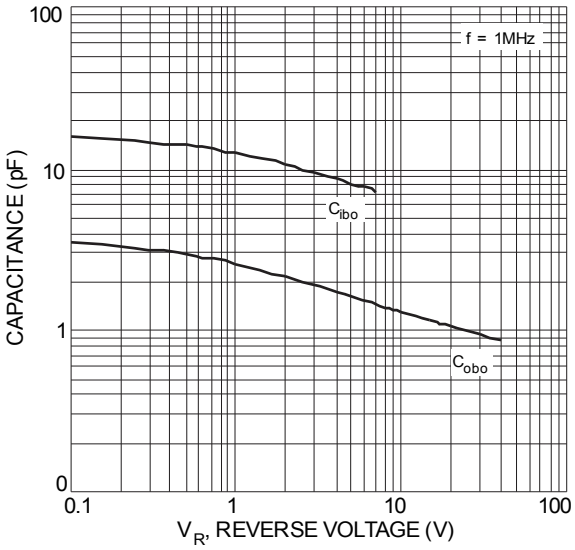


Fig. 7 Typical Capacitance Characteristics

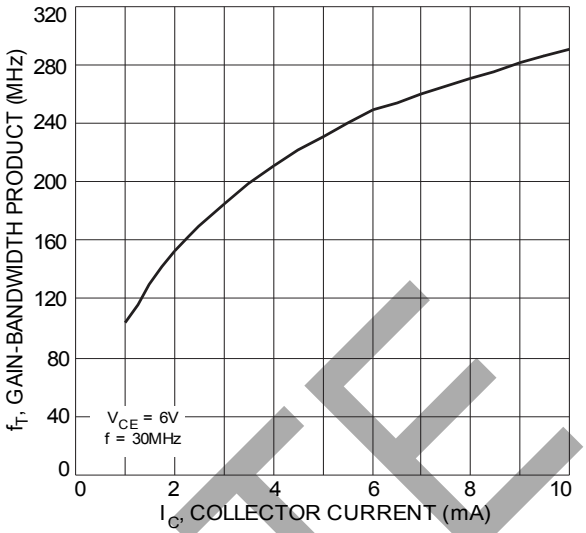
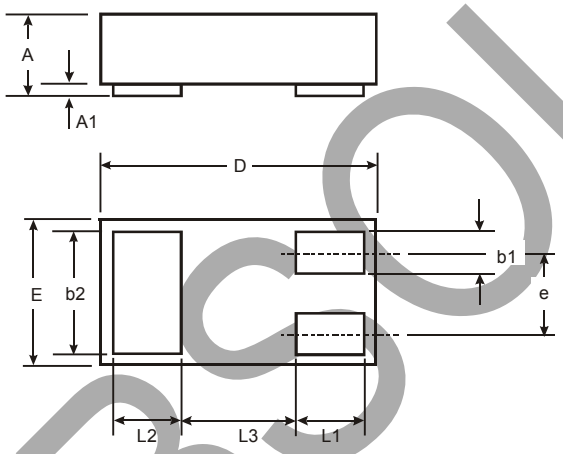


Fig. 8 Typical Gain-Bandwidth Product vs. Collector Current

Package Outline Dimensions

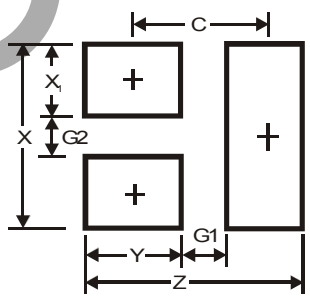
Please see AP02002 at http://www.diodes.com/datasheets/ap02002.pdf for the latest version.



X2-DFN1006-3			
Dim	**Min**	**Max**	**Typ**
A	—	0.40	—
A1	0	0.05	0.02
b1	0.10	0.20	0.15
b2	0.45	0.55	0.50
D	0.95	1.05	1.00
E	0.55	0.65	0.60
e	—	—	0.35
L1	0.20	0.30	0.25
L2	0.20	0.30	0.25
L3	—	—	0.40
All Dimensions in mm			

Suggested Pad Layout

Please see AP02001 at http://www.diodes.com/datasheets/ap02001.pdf for the latest version.



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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