



•

PNP PRE-BIASED (R1=R2) SMALL SIGNAL SURFACE MOUNT TRANSISTOR

per MIL-STD-202, Method 208

OUT

(or -supply)

Supply or GND

Weight: 0.0009 grams (approximate)

Case Material: Molded Plastic, "Green" Molding Compound.

Terminals: Finish — NiPdAu over Copper leadframe. Solderable

UL Flammability Classification Rating 94V-0

Moisture Sensitivity: Level 1 per J-STD-020

Mechanical Data

Case: DFN1006-3

Features

- **Epitaxial Planar Die Construction**
- Ultra-Small Leadless Surface Mount Package .
- Ideally Suited for Automated Assembly Processes
- "Lead Free", RoHS Compliant (Note 1)
- Halogen and Antimony Free "Green" Device (Note 2)
- Qualified to AEC-Q101 Standards for High Reliability

Part Number	R1 (NOM)	R2 (NOM)	Marking
DDTA144ELP	47K	47K	P2

DFN1006-3



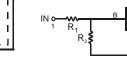


Bottom View

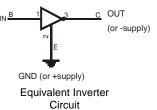
C

Top View

Pin-Out



Device Symbol



Ordering Information (Note 3)

Product	Marking	Reel size (inches)	Tape width (mm)	Quantity per reel
DDTA144ELP-7	P2	7	8	3,000
DDTA144ELP-7B	P2	7	8	10,000

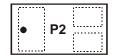
1. No purposefully added lead. Notes:

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

DDTA144ELP-7



Top View Dot Denotes Collector Side

DDTA144ELP-7B



Top View Bar Denotes Base and Emitter Side

P2 = Product Type Marking Code



Maximum Ratings @T_A = 25°C unless otherwise specified

Characteristic	Symbol	Value	Unit
Supply Voltage	Vcc	-50	V
Input Voltage	V _{IN}	+10 to -40	V
Output Current (I _o)	I _{C(MAX)}	-200	mA

Thermal Characteristics @T_A = 25°C unless otherwise specified

Characteristic	Symbol	Value	Unit
Power Dissipation (Note 4)	PD	250	mW
Power Deration above 25°C	P _{der}	2	mW/°C
Thermal Resistance, Junction to Ambient Air (Note 4) (Equivalent to one heated junction of PNP)	$R_{ heta JA}$	500	°C/W
Operating and Storage Temperature Range	TJ, T _{STG}	-55 to +150	°C

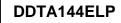
Electrical Characteristics @T_A = 25°C unless otherwise specified

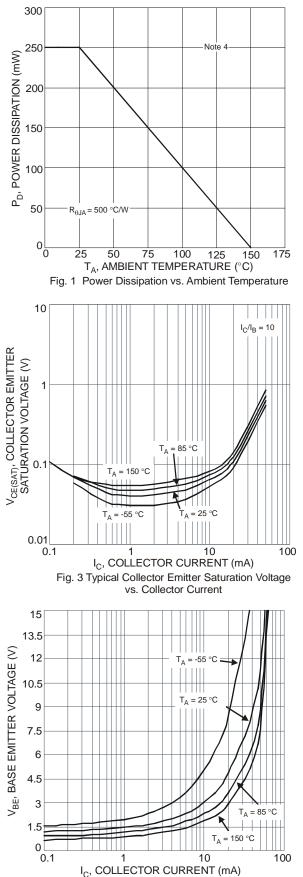
Characteristic	Symbol	Min	Тур	Max	Unit	Test Condition
Off Characteristics (Notes 5 & 6)						
Collector-Base Breakdown Voltage	BV _{CBO}	-50		—	V	$I_{\rm C} = -10 \mu A, I_{\rm E} = 0$
Collector-Emitter Breakdown Voltage	BVCEO	-50		_	V	$I_{\rm C} = -1.0 {\rm mA}, I_{\rm B} = 0$
Emitter-Base Breakdown Voltage	BV _{EBO}	-4.5			V	$I_{\rm E} = -100 \mu A, I_{\rm C} = 0$
Collector Cutoff Current	ICEX			-100	nA	$V_{CE} = -50V, V_{EB(OFF)} = 3.0V$
Base Cutoff Current (I _{BEX})	I _{BL}	_	_	-60	μA	$V_{CE} = -50V, V_{EB(OFF)} = 3.0V$
Collector-Base Cut Off Current	I _{CBO}	_	_	-100	nA	$V_{CB} = -50V, I_E = 0$
Collector-Emitter Cut Off Current, IO(off)	ICEO			-100	nA	$V_{CE} = -50V, I_B = 0$
Emitter-Base Cut Off Current	I _{EBO}			-100	μA	$V_{EB} = -4V, I_{C} = 0$
Input Off Voltage	V _{I(off)}	-300	_		mV	V _{CC} = -5V, I _O = -100uA
On Characteristics (Notes 5 & 6)						
Input-On Voltage	V _{I(on)}			-3.0	V	$V_0 = -0.3V, I_0 = -5mA$
Input Current	lı –	_	_	-7.2	mA	$V_I = -5V$
		90		—		$V_{CE} = -5V, I_{C} = -2.5mA$
		120				$V_{CE} = -5V, I_{C} = -5mA$
DC Current Gain	h _{FE}	150	_	—		$V_{CE} = -5V, I_{C} = -10mA$
		100				$V_{CE} = -5V, I_{C} = -100mA$
		180				$V_{CE} = -5V, I_{C} = -200 \text{mA}$
		250		—		$V_{CE} = -5V, I_{C} = -300 \text{mA}$
Output On Voltage	N/	_	_	-150	mV	$I_{I} = -1mA, I_{O} = -10mA$
(Collector-Emitter Saturation Voltage)	V _{O(on)}			- <u>800</u> 750	mV	$I_{I} = -1mA, I_{O} = -450mA$
Input Resistance	R1	33	47	61	KΩ	—
Resistance Ratio	(R2/R1)	0.8	1.0	1.2		—
Small Signal Characteristics						
Current Gain-Bandwidth Product	f⊤	—	250	—	MHz	$V_{CE} = -10V$, $I_E = -5mA$, $f = 100 \text{ MHz}$

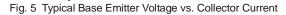
Notes: 4. Device mounted on FR-4 PCB, 1" x 0.85" x 0.062".

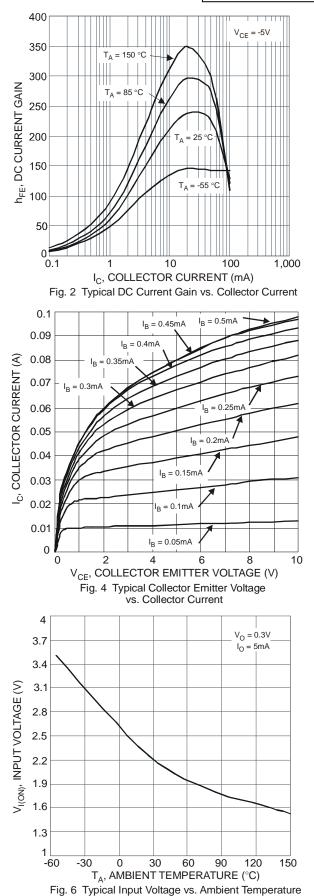
Short duration pulse test used to minimize self-heating effect. Pulse Test: Pulse width tp<300 uS, Duty Cycle, d<=2%.
Guaranteed by design.



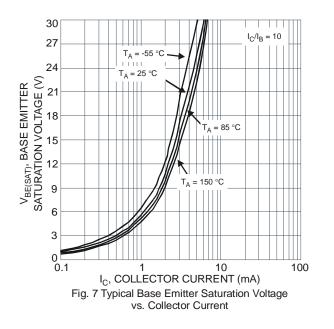




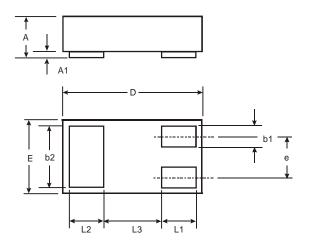






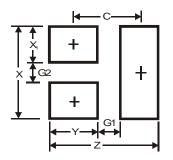


Package Outline Dimensions



DFN1006-3					
Dim	Min	Max	Тур		
Α	0.47	0.53	0.50		
A1	0	0.05	0.03		
b1	0.10	0.20	0.15		
b2	0.45	0.55	0.50		
D	0.95	1.075	1.00		
Е	0.55	0.675	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



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



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