



BDX 65, A, B, C

NPN SILICON DARLINGTONS

General purpose darlingtonts designed for power amplifier and switching applications.

ABSOLUTE MAXIMUM RATINGS

Symbol	Ratings		Value	Unit
V_{CEO}	Collector-Emitter Voltage		BDX65 60	V
			BDX65A 80	
			BDX65B 100	
			BDX65C 120	
V_{CEV}	Collector-Emitter Voltage	$V_{BE} = -1.5\text{ V}$	BDX65 80	V
			BDX65A 100	
			BDX65B 120	
			BDX65C 120	
V_{EBO}	Emitter-Base Voltage		BDX65 BDX65A BDX65B BDX65C 5.0	V
I_C	Collector Current	$I_{C(RMS)}$	BDX65 BDX65A BDX65B BDX65C 12	A
		I_{CM}	BDX65 BDX65A BDX65B BDX65C 16	
I_B	Base Current		BDX65 BDX65A BDX65B BDX65C 0.2	A
P_T	Power Dissipation	@ $T_C = 25^\circ$	BDX65 BDX65A BDX65B BDX65C 117	Watts W/°C
T_J	Junction Temperature		BDX65 BDX65A BDX65B BDX65C -55 to +200	°C
T_S	Storage Temperature			

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THERMAL CHARACTERISTICS

Symbol	Ratings	Value	Unit
R_{thJ-C}	Thermal Resistance, Junction to Case BDX65 BDX65A BDX65B BDX65C	1.5	°C/W

ELECTRICAL CHARACTERISTICS

TC=25°C unless otherwise noted

Symbol	Ratings	Test Condition(s)	Min	Typ	Mx	Unit	
$V_{CEO(SUS)}$	Collector-Emitter Breakdown Voltage (*)	$I_C=0.1\text{ A}$, $I_B=0$, $L=25\text{mH}$	BDX65	60	-	-	V
			BDX65A	80	-	-	
			BDX65B	100	-	-	
			BDX65C	120	-	-	
I_{CEO}	Collector Cutoff Current	$V_{CE}=30\text{ V}$	BDX65	-	-	1	mA
		$V_{CE}=40\text{ V}$	BDX65A	-	-		
		$V_{CE}=50\text{ V}$	BDX65B	-	-		
		$V_{CE}=60\text{ V}$	BDX65C	-	-		

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Symbol	Ratings	Test Condition(s)	Min	Typ	Mx	Unit
I_{EBO}	Emitter Cutoff Current	$V_{BE}=5\text{ V}$	-	-	5.0	mA
I_{CBO}	Collector-Base Cutoff Current	$V_{CBO}=60\text{ V}$	-	-	0.4	mA
		$V_{CBO}=60\text{ V}$ $T_{CASE}=150^{\circ}\text{C}$	-	-	3	
		$V_{CBO}=80\text{ V}$	-	-	0.4	
		$V_{CBO}=80\text{ V}$ $T_{CASE}=150^{\circ}\text{C}$	-	-	3	
		$V_{CBO}=100\text{ V}$	-	-	0.4	
		$V_{CBO}=100\text{ V}$ $T_{CASE}=150^{\circ}\text{C}$	-	-	3	
		$V_{CBO}=120\text{ V}$	-	-	0.4	
		$V_{CBO}=120\text{ V}$ $T_{CASE}=150^{\circ}$	-	-	3	
$V_{CE(SAT)}$	Collector-Emitter saturation Voltage (*)	$I_C=5.0\text{ A}, I_B=20\text{ mA}$	-	-	2	V
V_F	Forward Voltage (pulse method)	$I_F=3\text{ A}$	-	1.8	-	V
V_{BE}	Base-Emitter Voltage (*)	$I_C=5.0\text{ A}, V_{CE}=3\text{ V}$	-	-	3	V
F_{h21e}	Forward current transfer ratio Cutoff frequency	$V_{CE}=3\text{ V}, I_C=5\text{ A}$	-	60	-	kHz

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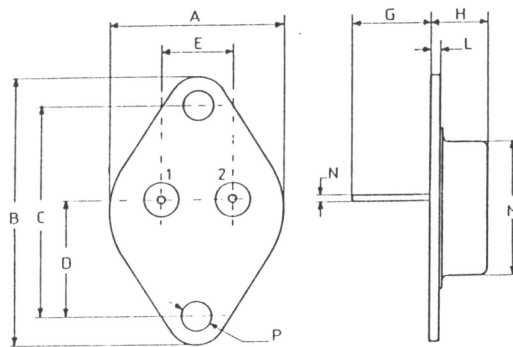
Symbol	Ratings	Test Condition(s)	Min	Typ	Mx	Unit
f_T	Transition Frequency	$V_{CE}=3\text{ V}$, $I_C=5\text{ A}$, $f=1\text{ MHz}$	-	7	-	MHz
h_{21E}	Static forward current transfer ratio (*)	$V_{CE}=3\text{ V}$, $I_C=1\text{ A}$	-	1500	-	-
		$V_{CE}=3\text{ V}$, $I_C=5\text{ A}$	1000	-	-	-
		$V_{CE}=3\text{ V}$, $I_C=10\text{ A}$	-	1500	-	-

(*) Pulse Width $\approx 300\ \mu\text{s}$, Duty Cycle $\angle 2.0\%$

(1) collector-Emitter voltage limited et $V_{CEci} = V_{\text{rated}}$ by an auxiliary circuit

MECHANICAL DATA CASE TO-3

DIMENSIONS		
	mm	inches
A	25,51	1,004
B	38,93	1,53
C	30,12	1,18
D	17,25	0,68
E	10,89	0,43
G	11,62	0,46
H	8,54	0,34
L	1,55	0,6
M	19,47	0,77
N	1	0,04
P	4,06	0,16



Pin 1 :	Base
Pin 2 :	Collector
Case :	Emitter