

BDX65, 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}	<i>Collector-Emitter Voltage</i>	BDX65	60	V	
		BDX65A	80		
		BDX65B	100		
		BDX65C	120		
V_{CBO}	<i>Collector-Base Voltage</i>	BDX65	80	V	
		BDX65A	100		
		BDX65B	120		
		BDX65C	140		
V_{EBO}	<i>Emitter-Base Voltage</i>	BDX65 BDX65A BDX65B BDX65C	5.0	V	
I_C	<i>Collector Current</i>	$I_{C(RMS)}$	BDX65 BDX65A BDX65B BDX65C	12	A
		I_{CM}	BDX65 BDX65A BDX65B BDX65C	16	
I_B	<i>Base Current</i>	BDX65 BDX65A BDX65B BDX65C	0.2	A	
P_T	<i>Power Dissipation</i>	@ $T_C = 25^\circ$	BDX65 BDX65A BDX65B BDX65C	117	Watts W/°C
T_J	<i>Junction Temperature</i>		BDX65 BDX65A BDX65B BDX65C	-55 to +200	°C
T_S	<i>Storage Temperature</i>				

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Symbol	Ratings	Value	Unit
R_{thJ-C}	Thermal Resistance, Junction to Case	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	-	-		
I_{EBO}	Emitter Cutoff Current	$V_{BE}=5\text{ V}$	BDX65	-	-	5.0	mA
			BDX65A	-	-		
			BDX65B	-	-		
			BDX65C	-	-		
I_{CBO}	Collector-Base Cutoff Current	$V_{CBO}=60\text{ V}$	BDX65	-	-	0.4	-
		$V_{CBO}=40\text{ V}$ $T_{CASE}=200^\circ\text{C}$		-	-	3	
		$V_{CBO}=50\text{ V}$	BDX65A	-	-	0.4	
		$V_{CBO}=80\text{ V}$ $T_{CASE}=200^\circ\text{C}$		-	-	3	
		$V_{CBO}=100\text{ V}$	BDX65B	-	-	0.4	
		$V_{CBO}=60\text{ V}$ $T_{CASE}=200^\circ\text{C}$		-	-	3	
		$V_{CBO}=120\text{ V}$	BDX65C	-	-	0.4	
		$V_{CBO}=70\text{ V}$ $T_{CASE}=200^\circ$		-	-	3	

$V_{CE(SAT)}$	Collector-Emitter saturation Voltage (*)	$I_C=5.0\text{ A}$, $I_B=20\text{ mA}$	BDX65 BDX65A BDX65B BDX65C	-	-	2	V
V_F	Forward Voltage (pulse method)	$I_F=3\text{ A}$	BDX65 BDX65A BDX65B BDX65C	-	1.8	-	V

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V_{BE}	Base-Emitter Voltage (*)	$I_C=5.0\text{ A}, V_{CE}=3\text{ V}$	BDX65 BDX65A BDX65B BDX65C	-	-	2.5	V
f_{hfe}	Cut-off frequency	$V_{CE}=3\text{ V}, I_C=5\text{ A}$	BDX65 BDX65A BDX65B BDX65C	-	50	-	kHz
f_T	Transition Frequency	$V_{CE}=3\text{ V}, I_C=5\text{ A}, f=1\text{ MHz}$	BDX65 BDX65A BDX65B BDX65C	-	7	-	MHz
h_{FE}	D.C. current gain (*)	$V_{CE}=3\text{ V}, I_C=1\text{ A}$	BDX65 BDX65A BDX65B BDX65C	-	3300	-	
		$V_{CE}=3\text{ V}, I_C=5\text{ A}$	BDX65 BDX65A BDX65B BDX65C	1000	-	-	-
		$V_{CE}=3\text{ V}, I_C=10\text{ A}$	BDX65 BDX65A BDX65B BDX65C	-	3700	-	

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

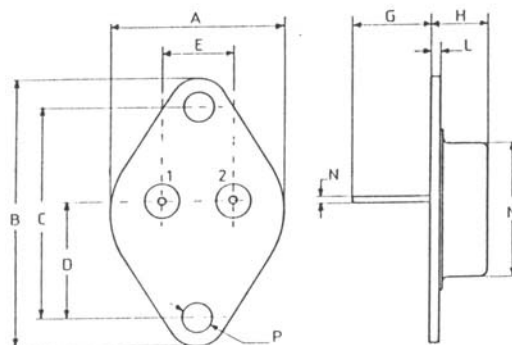
(1) collector-Emitter voltage limited et $V_{CEci} = V$

an auxiliary circuit

rated by

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 :	Emitter
Case :	Collector



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