

**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>				



**THERMAL CHARACTERISTICS**

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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 (*)	$I_C=0.1\text{ A}, I_B=0, L=25\text{mH}$	<b>BDX65</b>	60	-	-	V
			<b>BDX65A</b>	80	-	-	
			<b>BDX65B</b>	100	-	-	
			<b>BDX65C</b>	120	-	-	

$I_{CEO}$	Collector Cutoff Current	$V_{CE}=30\text{ V}$	<b>BDX65</b>	-	-	1	mA
		$V_{CE}=40\text{ V}$	<b>BDX65A</b>	-	-		
		$V_{CE}=50\text{ V}$	<b>BDX65B</b>	-	-		
		$V_{CE}=60\text{ V}$	<b>BDX65C</b>	-	-		
$I_{EBO}$	Emitter Cutoff Current	$V_{BE}=5\text{ V}$	<b>BDX65</b>	-	-	5.0	mA
			<b>BDX65A</b>	-	-		
			<b>BDX65B</b>	-	-		
			<b>BDX65C</b>	-	-		
$I_{CBO}$	Collector-Base Cutoff Current	$V_{CBO}=60\text{ V}$	<b>BDX65</b>	-	-	0.4	-
		$V_{CBO}=40\text{ V}$ $T_{CASE}=200^\circ\text{C}$		-	-	3	
		$V_{CBO}=50\text{ V}$	<b>BDX65A</b>	-	-	0.4	
		$V_{CBO}=80\text{ V}$ $T_{CASE}=200^\circ\text{C}$		-	-	3	
		$V_{CBO}=100\text{ V}$	<b>BDX65B</b>	-	-	0.4	
		$V_{CBO}=60\text{ V}$ $T_{CASE}=200^\circ\text{C}$		-	-	3	
		$V_{CBO}=120\text{ V}$	<b>BDX65C</b>	-	-	0.4	
		$V_{CBO}=70\text{ V}$ $T_{CASE}=200^\circ$		-	-	3	

$V_{CE(SAT)}$	Collector-Emitter saturation Voltage (*)	$I_C=5.0\text{ A}, I_B=20\text{ mA}$	<b>BDX65</b> <b>BDX65A</b> <b>BDX65B</b> <b>BDX65C</b>	-	-	2	V
$V_F$	Forward Voltage (pulse method)	$I_F=3\text{ A}$	<b>BDX65</b> <b>BDX65A</b> <b>BDX65B</b> <b>BDX65C</b>	-	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  $\leq 2.0\%$

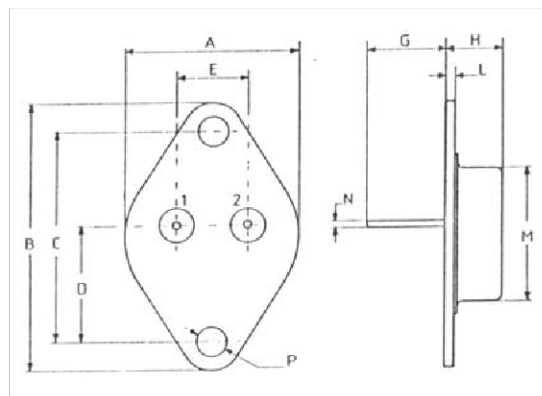
(1) collector-Emitter voltage limited et  $V_{CEcl} = V$

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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