



## 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			

# BDX 65, A, B, C

## 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	-	-		

# BDX 65, A, B, C

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

# BDX 65, A, B, C

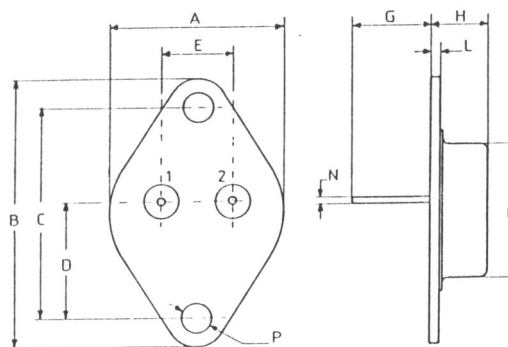
Symbol	Ratings	Test Condition(s)	Min	Typ	Mx	Unit
$f_T$	Transition Frequency	$V_{CE}=3\text{ V}$ , $I_C=5\text{ A}$ , $f=1\text{ MHz}$	-	7	-	MHz
$h_{21E}$	Static forward current transfer ratio (*)	$V_{CE}=3\text{ V}$ , $I_C=1\text{ A}$	-	1500	-	-
		$V_{CE}=3\text{ V}$ , $I_C=5\text{ A}$	1000	-	-	-
		$V_{CE}=3\text{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