

## BDX64 – A – B – C

### PNP SILICON DARLINGTON POWER TRANSISTOR

The BDX64, BDX64A, BDX64B and BDX64C are mounted in TO-3 metal package. High current power darlington designed for power amplification and switching applications. The complementary NPN are BDX65, BDX65A, BDX65B, BDX65C. Compliance to RoHS.

#### ABSOLUTE MAXIMUM RATINGS

Symbol	Ratings		Value	Unit	
$V_{CEO}$	Collector-Emitter Voltage		BDX64	-60	V
			BDX64A	-80	
			BDX64B	-100	
			BDX64C	-120	
$V_{CEV}$	Collector-Emitter Voltage	$V_{BE} = -1.5 \text{ V}$	BDX64	-60	V
			BDX64A	-80	
			BDX64B	-100	
			BDX64C	-120	
$V_{EBO}$	Emitter-Base Voltage		-5.0	V	
$I_C$	Collector Current		$I_{C(RMS)}$	-12	A
			$I_{CM}$	-16	
$I_B$	Base Current		0.2	A	
$P_T$	Power Dissipation	@ $T_C = 25^\circ$	117	W	
$T_J$	Junction Temperature		-55 to +200	$^\circ\text{C}$	
$T_S$	Storage Temperature				

#### THERMAL CHARACTERISTICS

Symbol	Ratings	Value	Unit
$R_{thJ-C}$	Thermal Resistance, Junction to Case	1.5	$^\circ\text{C/W}$

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### ELECTRICAL CHARACTERISTICS

TC=25°C unless otherwise noted

Symbol	Ratings	Test Condition(s)		Min	Typ	Max	Unit
$V_{CE(SUS)}$	Collector-Emitter Breakdown Voltage (*)	$I_C = -0.1\text{ A}$ $I_B = 0$ $L = 25\text{mH}$	BDX64	-60	-	-	V
			BDX64A	-80	-	-	
			BDX64B	-100	-	-	
			BDX64C	-120	-	-	
$I_{CEO}$	Collector Cutoff Current	$V_{CE} = -30\text{ V}$ $V_{CE} = -40\text{ V}$ $V_{CE} = -50\text{ V}$ $V_{CE} = -60\text{ V}$	BDX64	-	-	-1.0	mA
			BDX64A	-	-		
			BDX64B	-	-		
			BDX64C	-	-		
$I_{EBO}$	Emitter Cutoff Current	$V_{BE} = -5\text{ V}$	BDX64	-	-	-5.0	mA
			BDX64A				
			BDX64B				
			BDX64C				
$I_{CBO}$	Collector-Base Cutoff Current	$V_{CBO} = -60\text{ V}$ $V_{CBO} = -40\text{ V}$ $T_{CASE} = 200^\circ\text{C}$ $V_{CBO} = -80\text{ V}$ $V_{CBO} = -50\text{ V}$ $T_{CASE} = 200^\circ\text{C}$ $V_{CBO} = -100\text{ V}$ $V_{CBO} = -60\text{ V}$ $T_{CASE} = 200^\circ\text{C}$ $V_{CBO} = -120\text{ V}$ $V_{CBO} = -70\text{ V}$ $T_{CASE} = 200^\circ$	BDX64	-	-	0.2	-
			BDX64	-	-	2	
			BDX64A	-	-	0.2	
			BDX64A	-	-	2	
			BDX64B	-	-	0.2	
			BDX64B	-	-	2	
			BDX64C	-	-	0.2	
			BDX64C	-	-	2	
$V_{CE(SAT)}$	Collector-Emitter saturation Voltage (*)	$I_C = -5.0\text{ A}$ $I_B = -20\text{ mA}$	BDX64	-	-	-2	V
			BDX64A				
			BDX64B				
			BDX64C				
$V_F$	Forward Voltage (pulse method)	$I_F = 5\text{ A}$	BDX64	-	1.8	-	V
			BDX64A				
			BDX64B				
			BDX64C				
$V_{BE}$	Base-Emitter Voltage (*)	$I_C = -5.0\text{ A}$ $V_{CE} = -3\text{ V}$	BDX64	-	-	-2.5	V
			BDX64A				
			BDX64B				
			BDX64C				

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### ELECTRICAL CHARACTERISTICS

TC=25°C unless otherwise noted

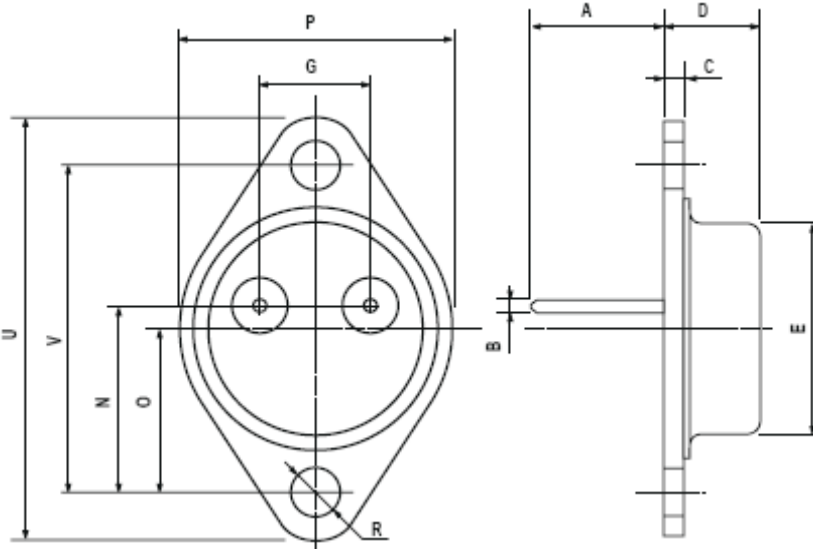
Symbol	Ratings	Test Condition(s)	Min	Typ	Max	Unit	
$F_{hfe}$	Cut-off frequency	- $V_{CE}=3$ V - $I_C=5$ A	BDX64	-	80	-	kHz
			BDX64A				
			BDX64B				
			BDX64C				
$f_T$	Transition Frequency	$V_{CE}=-3$ V $I_C=-5$ A $f=1$ MHz	BDX64	-	7	-	MHz
			BDX64A				
			BDX64B				
			BDX64C				
$h_{FE}$	D.C. current gain (*)	- $V_{CE}=-3$ V - $I_C=-1$ A	BDX64	-	1500	-	-
			BDX64A				
			BDX64B				
			BDX64C				
		- $V_{CE}=-3$ V - $I_C=-5$ A	BDX64	1000	-	-	
			BDX64A				
			BDX64B				
			BDX64C				
		- $V_{CE}=-3$ V - $I_C=-12$ A	BDX64	-	750	-	
			BDX64A				
			BDX64B				
			BDX64C				

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

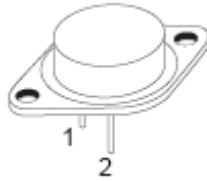
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### MECHANICAL DATA CASE TO-3

DIMENSIONS (mm)		
	min	max
A	11	13.10
B	0.97	1.15
C	1.5	1.65
D	8.32	8.92
F	19	20
G	10.70	11.1
N	16.50	17.20
P	25	26
R	4	4.09
U	38.50	39.30
V	30	30.30



Pin 1 :	Base
Pin 2 :	Emitter
Case :	Collector



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