

BDX67 – A – B – C

NPN SILICON DARLINGTON POWER TRANSISTOR

The BDX67, BDX67A, BDX67 and BDX67C are mounted in TO-3 metal package.
High current power darlington designed for power amplification and switching applications.
The complementary PNP are BDX66, BDX66A, BDX66B, BDX66C.
Compliance to RoHS.

ABSOLUTE MAXIMUM RATINGS

Symbol	Ratings			Value	Unit
V_{CEO}	Collector-Emitter Voltage		BDX67	60	V
			BDX67A	80	
			BDX67B	100	
			BDX67C	120	
V_{CBO}	Collector-Base Voltage		BDX67	80	V
			BDX67A	100	
			BDX67B	120	
			BDX67C	140	
V_{EBO}	Emitter-Base Voltage		BDX67	5.0	V
			BDX67A		
			BDX67B		
			BDX67C		
I_C	Collector Current	$I_{C(RMS)}$	BDX67	16	A
			BDX67A		
			BDX67B		
			BDX67C		
		I_{CM}	BDX67	20	
			BDX67A		
			BDX67B		
			BDX67C		
I_B	Base Current		BDX67	0.25	A
			BDX67A		
			BDX67B		
			BDX67C		
P_T	Power Dissipation	@ $T_C = 25^\circ$	BDX67	150	Watts W/°C
			BDX67A		
			BDX67B		
			BDX67C		
T_J	Junction Temperature			-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	BDX67	1.17	°C/W
		BDX67A		
		BDX67B		
		BDX67C		

ELECTRICAL CHARACTERISTICS

TC=25°C unless otherwise noted

Symbol	Ratings	Test Condition(s)		Min	Typ	Max	Unit
$V_{CEO(SUS)}$	Collector-Emitter Breakdown Voltage (*)	$I_C=0.1\text{ A}$, $L=25\text{mH}$	BDX67	60	-	-	V
			BDX67A	80	-	-	
			BDX67B	100	-	-	
			BDX67C	120	-	-	
I_{CEO}	Collector Cutoff Current	$V_{CE}=30\text{ V}$	BDX67	-	-	3	mA
		$V_{CE}=40\text{ V}$	BDX67A	-	-		
		$V_{CE}=50\text{ V}$	BDX67B	-	-		
		$V_{CE}=60\text{ V}$	BDX67C	-	-		
I_{EBO}	Emitter Cutoff Current	$V_{BE}=5\text{ V}$	BDX67	-	-	5.0	mA
			BDX67A				
			BDX67B				
			BDX67C				
I_{CBO}	Collector-Base Cutoff Current	$T_{CASE}=25^\circ\text{C}$ $V_{CB}=60\text{ V}$	BDX67	-	-	1	mA
		$T_{CASE}=200^\circ\text{C}$ $V_{CB}=40\text{ V}$		-	-	5	
		$T_{CASE}=25^\circ\text{C}$ $V_{CB}=80\text{ V}$	BDX67A	-	-	1	
		$T_{CASE}=200^\circ\text{C}$ $V_{CB}=50\text{ V}$		-	-	5	

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ELECTRICAL CHARACTERISTICS

TC=25°C unless otherwise noted

Symbol	Ratings	Test Condition(s)		Min	Typ	Max	Unit			
I_{CBO}	Collector-Base Cutoff Current	$T_{CASE}=25^{\circ}C$ $V_{CB}=100\text{ V}$	BDX67B	-	-	1	mA			
		$T_{CASE}=200^{\circ}C$ $V_{CB}=60\text{ V}$		-	-	5				
		$T_{CASE}=25^{\circ}C$ $V_{CB}=120\text{ V}$	BDX67C	-	-	1		5		
		$T_{CASE}=200^{\circ}C$ $V_{CB}=70\text{ V}$		-	-					
h_{FE}	Dc Current Gain	$V_{CE}=3\text{ V}, I_C=1\text{ A}$		-	5200	-	-			
		$V_{CE}=3\text{ V}, I_C=10\text{ A}$		1000	-	-				
		$V_{CE}=3\text{ V}, I_C=16\text{ A}$		-	4000	-				
$V_{CE(SAT)}$	Collector-Emitter Saturation Voltage (*)	$I_C=10\text{ A}$ $I_B=40\text{ mA}$	BDX67 BDX67A BDX67B BDX67C	-	-	2	V			
V_{BE}	Base-Emitter Voltage(1&2)	$V_{CE}=3\text{ V}$ $I_C=10\text{ A}$	BDX67 BDX67A BDX67B BDX67C	-	-	2,5	V			
V_F	Diode Forward Voltage	$I_F=10\text{ A}$	BDX67 BDX67A BDX67B BDX67C	-	2,5	-	V			
C_c	Collector Capacitance	$I_E=0\text{ A}$ $V_{CB}=10V$	BDX67 BDX67A BDX67B BDX67C	-	300	-	pF			
t_{on}	Switching Characteristics	$V_{CC}=12V$ $I_C=-10\text{ A}$ $I_{B1}=-I_{B2}=0.04\text{ A}$	BDX67 BDX67A BDX67B BDX67C	-	1	-	μS			
t_{off}			BDX67 BDX67A BDX67B BDX67C	-	3.5	-				
f_{hfe}			Small Signal Current Gain	$V_{CE}=-3\text{ V}$ $I_C=-5\text{ A}$	BDX67 BDX67A BDX67B BDX67C	-		50	-	kHz

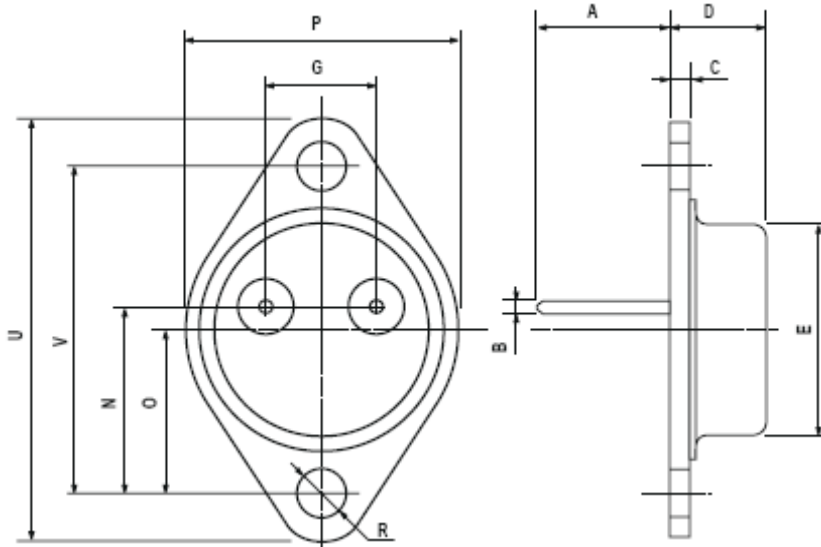
(*) Pulse Width $\approx 300 \mu s$, Duty Cycle $\angle 2.0\%$

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

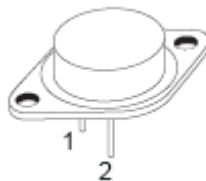
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MECHANICAL DATA CASE TO-3

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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