BDX63 – A – B – C

NPN SILICON DARLINGTON POWER TRANSISTOR

The BDX63, BDX63A, BDX63 and BDX63C are mounted in TO-3 metal package.
High current power darlingtons designed for power amplification and switching applications.
The complementary PNP are BDX62, BDX62A, BDX62B, BDX62C.
Compliance to RoHS.

ABSOLUTE MAXIMUM RATINGS

Symbol	Ratings			Value	Unit
V_{CEO}	Collector-Emitter Voltage		BDX63	60	V
			BDX63A	80	
			BDX63B	100	
			BDX63C	120	
V_{CEV}	Collector-EmitterVoltage	V_{BE}=-1.5 V	BDX63	80	V
			BDX63A	100	
			BDX63B	120	
			BDX63C	140	
V_{EBO}	Emitter-Base Voltage			5.0	V
I_C	Collector Current	$I_{C(RMS)}$		8	A
		I_{CM}		12	
I_B	Base Current			0.15	A
P_T	Power Dissipation	@ T_C = 25°		90	W
T_J	Junction Temperature			-55 to +200	°C
T_S	Storage Temperature				

THERMAL CHARACTERISTICS

Symbol	Ratings	Value	Unit
R_{thJ-C}	Thermal Resistance, Junction to Case	1.94	°C/W

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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 A I_B=0 L=25mH	BDX63	60	-	-	V
			BDX63A	80	-	-	
			BDX63B	100	-	-	
			BDX63C	120	-	-	
I_{CEO}	Collector Cutoff Current	V_{CE}=30 V	BDX63	-	-	0.5	mA
		V_{CE}=40 V	BDX63A	-	-		
		V_{CE}=50 V	BDX63B	-	-		
		V_{CE}=60 V	BDX63C	-	-		
I_{EBO}	Emitter Cutoff Current	V_{BE}=5 V	BDX63	-	-	5.0	mA
			BDX63A				
			BDX63B				
			BDX63C				
I_{CBO}	Collector-Base Cutoff Current	V_{CBO}=60 V	BDX63	-	-	0.2	-
		V_{CBO}=400 V T_{CASE}=200°C		-	-	2	
		V_{CBO}=80 V	BDX63A	-	-	0.2	
		V_{CBO}=50 V T_{CASE}=200°C		-	-	2	
		V_{CBO}=100 V	BDX63B	-	-	0.2	
		V_{CBO}=60 V T_{CASE}=200°C		-	-	2	
		V_{CBO}=120 V	BDX63C	-	-	0.2	
		V_{CBO}=70 V T_{CASE}=200°		-	-	2	
$V_{CE(SAT)}$	Collector-Emitter saturation Voltage (*)	I_C=3.0 A I_B=12 mA	BDX63	-	-	2	V
			BDX63A				
			BDX63B				
			BDX63C				
V_F	Forward Voltage (pulse method)	I_F=3 A	BDX63	-	1.2	-	V
			BDX63A				
			BDX63B				
			BDX63C				
V_{BE}	Base-Emitter Voltage (*)	I_C=3.0 A V_{CE}=3V	BDX63	-	-	2.5	V
			BDX63A				
			BDX63B				
			BDX63C				

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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=3 A	BDX63 BDX63A BDX63B BDX63C	-	100	-	kHz
f_T	Transition Frequency	V_{CE}=3 V, I_C=3 A f=1 MHz	BDX63 BDX63A BDX63B BDX63C	-	7	-	MHz
h_{FE}	D.C. current gain (*)	V_{CE}=3 V I_C=0.5 A	BDX63 BDX63A BDX63B BDX63C	-	2500	-	-
		V_{CE}=3 V I_C=3 A	BDX63 BDX63A BDX63B BDX63C	1000	-	-	
		V_{CE}=3 V I_C=8 A	BDX63 BDX63A BDX63B BDX63C	-	2600	-	

(*) Pulse Width ≈ 300 μs, Duty Cycle ∠ 2.0%

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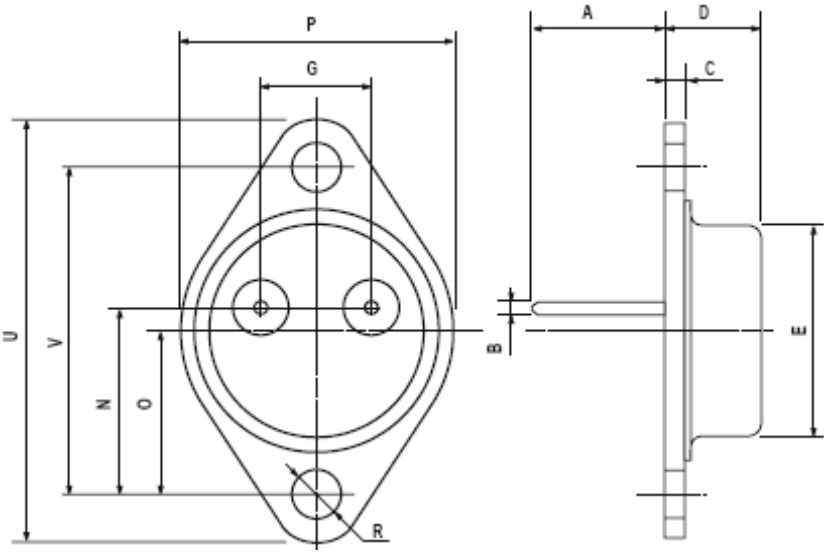
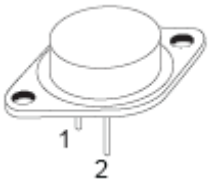
MECHANICAL DATA CASE TO-3

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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