



## PNP BDX34 – BDX34A – BDX34B – BDX34C

### COMPLEMENTARY SILICON POWER DARLINGTON TRANSISTORS

The BDX34, BDX34A, BDX34B and BDX34C are silicon epitaxial-base PNP power transistors in monolithic Darlington configuration and are mounted in Jedec TO-220 plastic package. They are intended for use in power linear and switching applications. The complementary NPN types are the BDX33, BDX33A, BDX33B and BDX33C respectively. Compliance to RoHS.

#### ABSOLUTE MAXIMUM RATINGS

Symbol	Ratings		Value	Unit	
$V_{CE0}$	Collector-Emitter Voltage	$I_B=0$	BDX34	-45	V
			BDX34A	-60	
			BDX34B	-80	
			BDX34C	-100	
$V_{CBO}$	Collector-Base Voltage	$I_E=0$	BDX34	-45	V
			BDX34A	-60	
			BDX34B	-80	
			BDX34C	-100	
$I_C$	Collector Current	$I_{C(RMS)}$	-10	A	
		$I_{CM}$	-15		
$I_B$	Base Current		-0.25	A	
$P_T$	Power Dissipation	@ $T_C = 25^\circ$	70	W	
$T_J$	Junction Temperature		-65 to +150	$^\circ C$	
$T_S$	Storage Temperature				

#### THERMAL CHARACTERISTICS

Symbol	Ratings	Value	Unit
$R_{thJ-C}$	Thermal Resistance, Junction to Case	1.78	$^\circ C/W$



## PNP BDX34 – BDX34A – BDX34B – BDX34C

### ELECTRICAL CHARACTERISTICS

TC=25°C unless otherwise noted

Symbol	Ratings	Test Condition(s)	Min	Typ	Max	Unit	
$V_{CE0(SUS)}$	Collector-Emitter Breakdown Voltage (*)	$I_C = -100 \text{ mA}$	BDX34	-45	-	-	V
			BDX34A	-60	-	-	
			BDX34B	-80	-	-	
			BDX34C	-100	-	-	
$V_{CER(SUS)}$	Collector-Emitter Sustaining Voltage (*)	$I_B = -100 \text{ mA}$ $R_{BE} = 100\Omega$	BDX34	-45	-	-	V
			BDX34A	-60	-	-	
			BDX34B	-80	-	-	
			BDX34C	-100	-	-	
$V_{CEV(SUS)}$	Collector-Emitter Sustaining Voltage (*)	$I_C = 1-00 \text{ mA}$ $V_{BE} = -1.5 \text{ V}$	BDX34	-45	-	-	V
			BDX34A	-60	-	-	
			BDX34B	-80	-	-	
			BDX34C	-100	-	-	
$I_{CEO}$	Collector Cutoff Current	$V_{CB} = -22\text{V}$	BDX34	-	-	-0.5	mA
		$V_{CB} = -30\text{V}$	BDX34A	-	-		
		$V_{CB} = -40\text{V}$	BDX34B	-	-		
		$V_{CB} = -50\text{V}$	BDX34C	-	-		
		$V_{CB} = -22\text{V}, T_C = 100^\circ\text{C}$	BDX34	-	-	-10	
		$V_{CB} = -30\text{V}, T_C = 100^\circ\text{C}$	BDX34A	-	-		
		$V_{CB} = -40\text{V}, T_C = 100^\circ\text{C}$	BDX34B	-	-		
		$V_{CB} = -50\text{V}, T_C = 100^\circ\text{C}$	BDX34C	-	-		
$I_{EBO}$	Emitter Cutoff Current	$V_{BE} = -5 \text{ V}$	BDX34	-	-	-5.0	mA
			BDX34A				
			BDX34B				
			BDX34C				
$I_{CBO}$	Collector-Base Cutoff Current	$V_{CBO} = -45 \text{ V}$	BDX34	-	-	-0.2	mA
		$V_{CBO} = -60 \text{ V}$	BDX34A	-	-		
		$V_{CBO} = -80 \text{ V}$	BDX34B	-	-		
		$V_{CBO} = -100 \text{ V}$	BDX34C	-	-		
$I_{CBO}$	Collector-Base Cutoff Current	$V_{CBO} = -45 \text{ V}$ $T_C = 100^\circ\text{C}$	BDX34	-	-	-5	mA
		$V_{CBO} = -60 \text{ V}$ $T_C = 100^\circ\text{C}$	BDX34A	-	-		
		$V_{CBO} = -80 \text{ V}$ $T_C = 100^\circ\text{C}$	BDX34B	-	-		
		$V_{CBO} = -100 \text{ V}$ $T_C = 100^\circ\text{C}$	BDX34C	-	-		



## PNP BDX34 – BDX34A – BDX34B – BDX34C

### ELECTRICAL CHARACTERISTICS

TC=25°C unless otherwise noted

Symbol	Ratings	Test Condition(s)	Min	Typ	Max	Unit	
$V_{CE(SAT)}$	Collector-Emitter saturation Voltage (*)	$I_C=-4.0\text{ A}, I_B=-8.0\text{ mA}$	BDX34	-	-	-2.5	V
			BDX34A				
			BDX34B				
			BDX34C				
		$I_C=-3.0\text{ A}, I_B=-6.0\text{ mA}$	BDX34	-	-	-2.5	
			BDX34A				
			BDX34B				
			BDX34C				
$V_F$	Forward Voltage (pulse method)	$I_F=-8\text{ A}$	BDX34	-	-	4.0	V
			BDX34A				
			BDX34B				
			BDX34C				
$V_{BE}$	Base-Emitter Voltage (*)	$I_C=-4.0\text{ A}, V_{CE}=-3.0\text{ V}$	BDX34	-	-	-2.5	V
			BDX34A				
		$I_C=-3.0\text{ A}, V_{CE}=-3.0\text{ V}$	BDX34B	-	-	-2.5	
			BDX34C				
$h_{FE}$	DC Current Gain (*)	$V_{CE}=-3.0\text{ V}, I_C=-4.0\text{ A}$	BDX34	750	-	-	-
			BDX34A				
		$V_{CE}=-3.0\text{ V}, I_C=-3.0\text{ A}$	BDX34B	750	-	-	
			BDX34C				

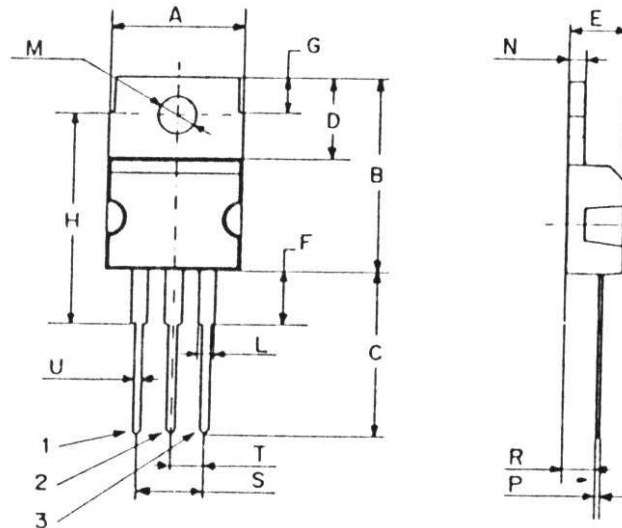
(\*) Pulse Width  $\approx 300\ \mu\text{s}$ , Duty Cycle  $\angle 2.0\%$



## PNP BDX34 – BDX34A – BDX34B – BDX34C

### MECHANICAL DATA CASE TO-220

DIMENSIONS (mm)		
	Min.	Max.
A	9,90	10,30
B	15,65	15,90
C	13,20	13,40
D	6,45	6,65
E	4,30	4,50
F	2,70	3,15
G	2,60	3,00
H	15,75	17,15
L	1,15	1,40
M	3,50	3,70
N	-	1,37
P	0,46	0,55
R	2,50	2,70
S	4,98	5,08
T	2,49	2,54
U	0,70	0,90



Pin 1 :	Base
Pin 2 :	Collector
Pin 3 :	Emitter
Case :	Collector

Revised September 2012

Information furnished is believed to be accurate and reliable. However, Comset Semiconductors assumes no responsibility for the consequences of use of such information nor for any infringement of patents or other rights of third parties which may result from its use. Data are subject to change without notice. Comset Semiconductors makes no warranty, representation or guarantee regarding the suitability of its products for any particular purpose, nor does Comset Semiconductors assume any liability arising out of the application or use of any product and specifically disclaims any and all liability, including without limitation consequential or incidental damages. Comset Semiconductors' products are not authorized for use as critical components in life support devices or systems.