



## PNP BDX20

### SILICON TRANSISTORS EPITAXIAL BASE

The BDX20 are mounted in TO-3 metal package.  
 LF Large Signal Power Amplification  
 High Current Fast Switching  
 Thermal Fatigue Inspection  
 Compliance to RoHS.

#### ABSOLUTE MAXIMUM RATINGS

Symbol	Ratings	Value	Unit
$V_{CBO}$	Collector to Base Voltage	-60	V
$V_{CEO}$	Collector-Emitter Voltage	-140	V
$V_{CEX}$	Collector-Emitter Voltage $V_{BE}=1.5\text{ V}$	-160	V
$V_{EBO}$	Emitter-Base Voltage	-7	V
$I_C$	Collector Current – Continuous	-10	A
$I_B$	Base Current – Continuous	-7	A
$P_{TOT}$	Total Device Dissipation	117	W
$T_J$	Junction Temperature	200	°C
$T_s$	Storage Temperature	-65 to +200	°C

#### THERMAL CHARACTERISTICS

Symbol	Ratings	Value	Unit
$R_{thJC}$	Thermal Resistance, Junction to Case	1.5	°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 Sustaining Voltage (*)	$I_C=-200\text{ mA}, I_B=0$	-140	-	-	V
$V_{CEX}$	Collector-Emitter Breakdown Voltage (*)	$I_C=-100\text{ mA}, V_{BE}=1.5\text{ V}$	-160	-	-	V
$I_{CEX}$	Collector Cutoff Current	$V_{CE}=-140\text{ V}, V_{BE}=1.5\text{ V}$	-	-	-1.0	mA
		$V_{CE}=-140\text{ V}, V_{BE}=1.5\text{ V}$ $T_{CASE}=150^\circ\text{C}$	-	-	-10	
$I_{CBO}$	Collector-Base Cutoff Current	$V_{CB}=-140\text{ V}, I_E=0$	-	-	-1.0	mA
$I_{EBO}$	Emitter-Base Cutoff Current	$V_{BE}=-7.0\text{ V}, I_C=0$	-	-	-5.0	mA
$h_{21E}$	Static Forward Current Transfer Ratio (*)	$I_C=-3\text{ A}, V_{CE}=-4\text{ V}$	20	-	70	-
		$I_C=10\text{ A}, V_{CE}=-4\text{ V}$	-	10	-	
$V_{CE(SAT)}$	Collector-Emitter Saturation Voltage (*)	$I_C=-3\text{ A}, I_B=-0.3\text{ A}$	-	-	-1.0	V
		$I_C=-10\text{ A}, I_B=-2\text{ A}$	-	-	-5.0	
$V_{BE}$	Base-Emitter Voltage (*)	$I_C=-3\text{ A}, V_{CE}=-4\text{ V}$	-	-1.7	-	V
		$I_C=-10\text{ A}, V_{CE}=-4\text{ V}$	-	-5.7	-	
$f_T$	Transition Frequency	$V_{CE}=-10\text{ V}, I_C=-1\text{ A}$ $f=1.0\text{ MHz}$	4	-	-	MHz

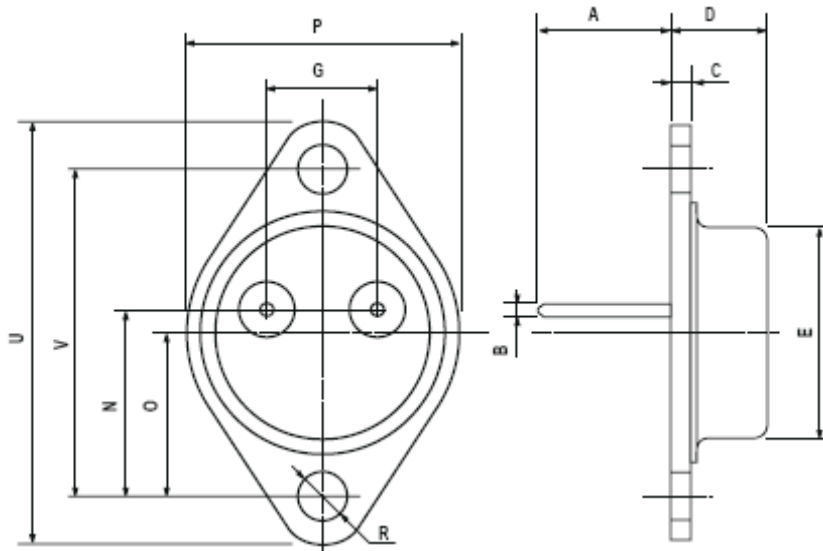
In accordance with JEDEC Registration Data

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

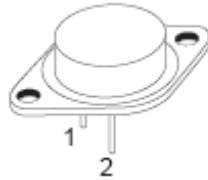
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### MECHANICAL DATA CASE TO-3

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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