

BD142

**NPN SILICON TRANSISTOR
POWER LINERAR AND SWITCHING
APPLICATIONS**

LF Large Signal Power Amplification
Low Saturation Voltage
High Dissipation Rating
Intended for a wide variety of intermediate-power applications.
It is especially suited for use in audio and inverter circuits at 12 volts.

ABSOLUTE MAXIMUM RATINGS

Symbol	Ratings	Value	Unit
V_{CEO}	Collector-Emitter Voltage	45	V
V_{EBO}	Collector-Emitter Voltage	45	V
V_{CBO}	Emitter-Base Voltage	7	V
V_{CEX}	Collector-Emitter Voltage <small>V_{BE} = -1.5 V</small>	50	V
I_C	Collector Current	15	A
I_B	Base Current	7	A
P_T	Power Dissipation <small>@ T_C = 25°</small>	117	Watts
T_J	Junction Temperature	-65 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	1.5	°C/W

ELECTRICAL CHARACTERISTICS

TC=25°C unless otherwise noted

Symbol	Ratings	Test Condition(s)	Min	Typ	Mx	Unit
$V_{CEO(BR)}$	Collector-Emitter Breakdown Voltage (*)	$I_C=200\text{ mA}, I_B=0$	45			V
$V_{CEX(BR)}$	Collector-Emitter Breakdown Voltage (*)	$I_C=100\text{ mA}, V_{BE}=-1.5\text{ V}$	50			V
$V_{CE(SAT)}$	Collector-Emitter Saturation Voltage (*)	$I_C=4\text{ A}, I_B=0.4\text{ A}$	-	-	1.1	V
I_{CEX}	Collector-Emitter Cutoff Current	$V_{CE}=100\text{ V}$ $V_{BE}=-1.5\text{ V}$	-	-	2	mA
I_{EBO}	Emitter-Base Cutoff Current	$V_{EB}=7\text{ V}$	-	-	1	mA
V_{BE}	Base-Emitter Voltage (*)	$I_C=4.0\text{ A}, V_{CE}=4.0\text{ V}$	-	-	1.5	V

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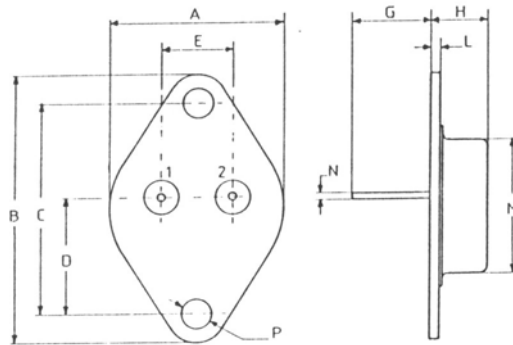
Symbol	Ratings	Test Condition(s)	Min	Typ	Mx	Unit
$I_{S/B}$	Second Breakdown collector current	$t=1s, V_{CE}=39 V$	3	-	-	A
h_{21E}	Static Forward Current Transfer Ratio (*)	$V_{CE}=4.0 V, I_C=4.0 A$	12.5	-	160	-
		$V_{CE}=4.0 V, I_C=0.5 A$	20	-	-	

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

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

MECHANICAL DATA CASE TO-3

DIMENSIONS		
	mm	inches
A	25,51	1,004
B	38,93	1,53
C	30,12	1,18
D	17,25	0,68
E	10,89	0,43
G	11,62	0,46
H	8,54	0,34
L	1,55	0,6
M	19,47	0,77
N	1	0,04
P	4,06	0,16



Pin 1 :	Base
Pin 2 :	Emitter
Case :	Collector