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	V_{BE}=-1.5 V	50	V
I_C	Collector Current		15	A
I_B	Base Current		7	A
P_T	Power Dissipation	@ T_C = 25°	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 mA, I_B=0	45			V
$V_{CEX(BR)}$	Collector-Emitter Breakdown Voltage (*)	I_C=100 mA, V_{BE}=-1.5 V	50			V
$V_{CE(SAT)}$	Collector-Emitter Saturation Voltage (*)	I_C=4 A, I_B=0.4 A	-	-	1.1	V
I_{CEX}	Collector-Emitter Cutoff Current	V_{CE}=100 V V_{BE}=-1.5 V	-	-	2	mA
I_{EBO}	Emitter-Base Cutoff Current	V_{EB}=7 V	-	-	1	mA
V_{BE}	Base-Emitter Voltage (*)	I_C=4.0 A, V_{CE}=4.0V	-	-	1.5	V

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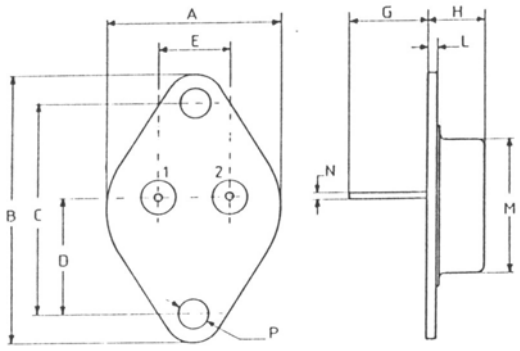
Symbol	Ratings	Test Condition(s)	Min	Typ	Mx	Unit
$I_{S/B}$	Second Breakdown collector current	t=1s, V_{CE}=39 V	3	-	-	A
h_{21E}	Static Forward Current Transfer Ratio (*)	V_{CE}=4.0 V, I_C=4.0 A	12.5	-	160	-
		V_{CE}=4.0 V, I_C=0.5 A	20	-	-	

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