



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.
 Compliance to RoHS.

ABSOLUTE MAXIMUM RATINGS

Symbol	Ratings	Value	Unit
V_{CEO}	Collector-Emitter Voltage	45	V
V_{CBO}	Collector-Emitter Voltage	50	V
V_{EBO}	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 @ $T_C = 25^\circ$	117	Watts
T_J	Junction Temperature	-65 to +200	°C
T_S	Storage Temperature		

THERMAL CHARACTERISTICS

Symbol	Ratings	Value	Unit
R_{thJ-C}	Thermal Resistance, Junction to Case	1.5	°C/W

ELECTRICAL CHARACTERISTICS

$T_C=25^\circ\text{C}$ unless otherwise noted

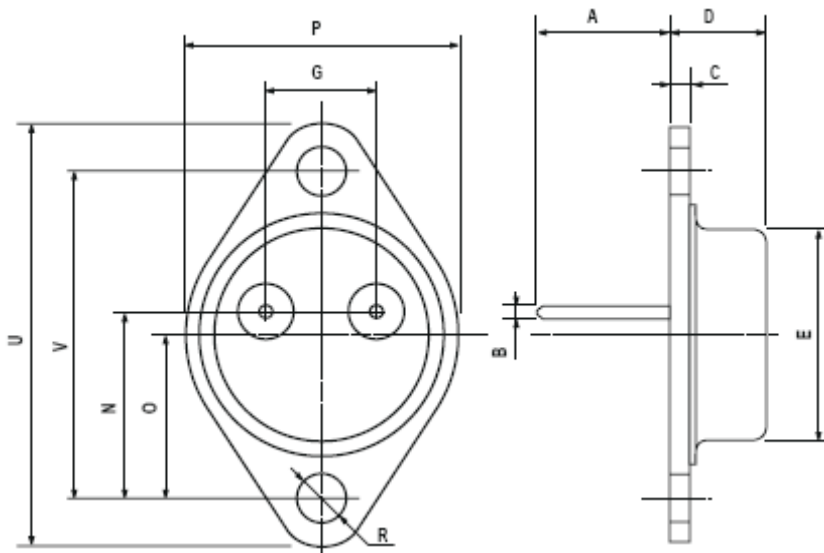
Symbol	Ratings	Test Condition(s)	Min	Typ	Max	Unit
$V_{CEO(BR)}$	Collector-Emitter Breakdown Voltage (*)	$I_C=200$ mA, $I_B=0$	45			V
$V_{CEX(BR)}$	Collector-Emitter Breakdown Voltage (*)	$I_C=100$ mA, $V_{BE}=-1.5$ V	50			V
$V_{CE(SAT)}$	Collector-Emitter Saturation Voltage (*)	$I_C=4$ A, $I_B=0.4$ A	-	-	1.1	V
I_{CEX}	Collector-Emitter Cutoff Current	$V_{CE}=40$ 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, $V_{CE}=4.0$ V	-	-	1.5	V
$I_{S/B}$	Second Breakdown collector current	$t=1$ s, $V_{CE}=39$ V	3	-	-	A
h_{FE}	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 μ s, Duty Cycle $\angle 2.0\%$

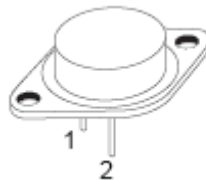
BD142

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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