



**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 $V_{BE}=-1.5\text{ V}$	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

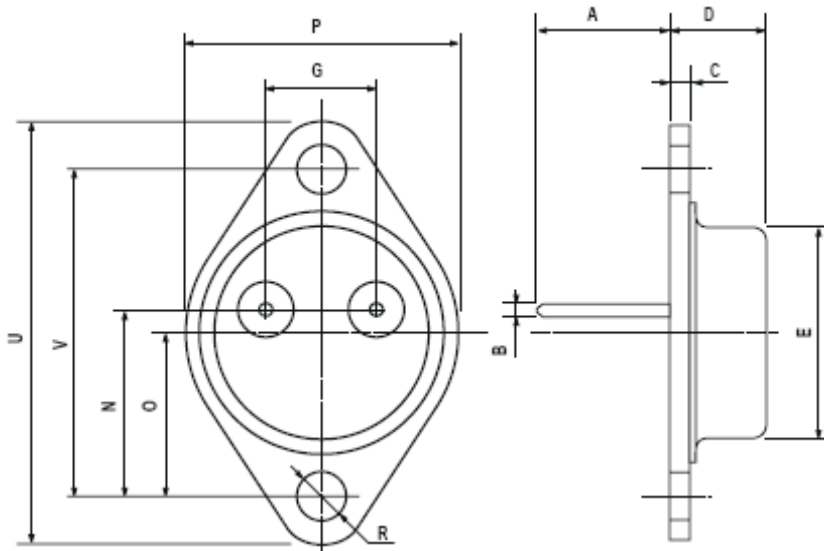
Symbol	Ratings	Test Condition(s)	Min	Typ	Max	Unit
$V_{CEO(BR)}$	Collector-Emitter Breakdown Voltage (*)	$I_C=200\text{ mA}, I_B=0$	45			V
$V_{CEX(BR)}$	Collector-Emitter Breakdown Voltage (*)	$I_C=100\text{ mA}, V_{BE}=-1.5\text{ V}$	50			V
$V_{CE(SAT)}$	Collector-Emitter Saturation Voltage (*)	$I_C=4\text{ A}, I_B=0.4\text{ A}$	-	-	1.1	V
$I_{CEX}$	Collector-Emitter Cutoff Current	$V_{CE}=40\text{ V}, V_{BE}=-1.5\text{ V}$	-	-	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
$I_{S/B}$	Second Breakdown collector current	$t=1\text{ s}, V_{CE}=39\text{ V}$	3	-	-	A
$h_{FE}$	Static Forward Current Transfer Ratio (*)	$V_{CE}=4.0\text{ V}, I_C=4.0\text{ A}$	12.5	-	160	-
		$V_{CE}=4.0\text{ V}, I_C=0.5\text{ A}$	20	-	-	-

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

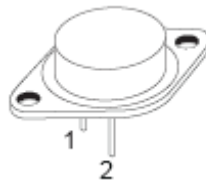
# BD142

## 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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