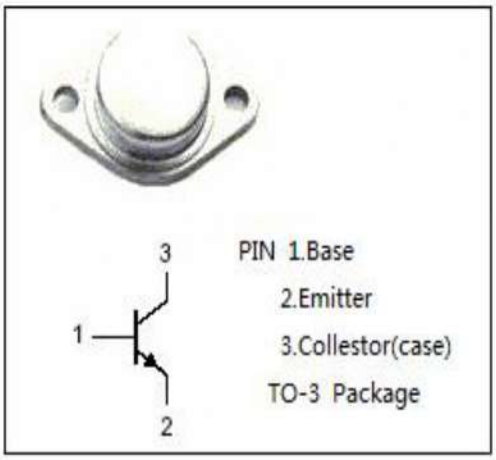
isc Silicon NPN Power Transistor BD142



DESCRIPTION

- Low Collector Saturation Voltage
- High Power Dissipation
- Minimum Lot-to-Lot variations for robust device performance and reliable operation

APPLICATIONS

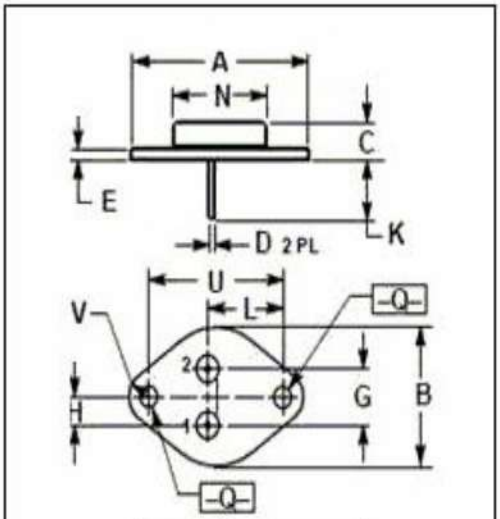
- LF large signal power amplification.
- Intended for a wide variety of intermediate power applications.
- Suited for use in audio and inverter circuits at 12V.

ABSOLUTE MAXIMUM RATINGS(T_a=25℃)

SYMBOL	PARAMETER	VALUE	UNIT
V_{CBO}	Collector-Base Voltage	50	V
V_{CEO}	Collector-Emitter Voltage	45	V
V_{EBO}	Emitter-Base Voltage	7	V
I_C	Collector Current-Continuous	15	A
I_B	Base Current	7	A
P_C	Collector Power Dissipation@T_C=25℃	117	W
T_J	Junction Temperature	200	℃
T_{stg}	Storage Temperature	-65~200	℃

THERMAL CHARACTERISTICS

SYMBOL	PARAMETER	MAX	UNIT
$R_{th\ j\text{-}c}$	Thermal Resistance,Junction to Case	1.5	℃/W



DIM	mm MIN	MAX
A	39.00	
B	25.30	26.67
C	7.80	8.50
D	0.90	1.10
E	1.40	1.60
G	10.92	
H	5.46	
K	11.30	13.50
L	16.75	17.05
N	19.40	19.62
Q	4.00	4.20
U	30.00	30.20
V	4.30	4.50

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ELECTRICAL CHARACTERISTICS

T_C=25℃ unless otherwise specified

SYMBOL	PARAMETER	CONDITIONS	MIN	MAX	UNIT
$V_{(BR)CEO}$	Collector-Emitter Breakdown Voltage	I_C=10mA; I_B=0	45		V
$V_{(BR)CBO}$	Collector-Base Breakdown Voltage	I_C= 0.1mA; I_E= 0	50		V
$V_{CE(sat)}$	Collector-Emitter Saturation Voltage	I_C= 4A; I_B= 0.4A		1.1	V
$V_{BE(on)}$	Base-Emitter On Voltage	I_C= 4A; V_{CE}= 4V		1.5	V
I_{CBO}	Collector Cutoff Current	V_{CB}= 50V; I_E= 0		100	uA
I_{EBO}	Emitter Cutoff Current	V_{EB}= 7V; I_C= 0		1.0	mA
h_{FE-1}	DC Current Gain	I_C= 4A; V_{CE}= 4V	12.5	160	
h_{FE-2}	DC Current Gain	I_C= 0.5A; V_{CE}= 4V	20		
$I_{s/b}$	Second Breakdown Collector Current with Base Forward Biased	V_{CE}= 39V,t= 1.0s,Nonrepetitive	3		A