

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

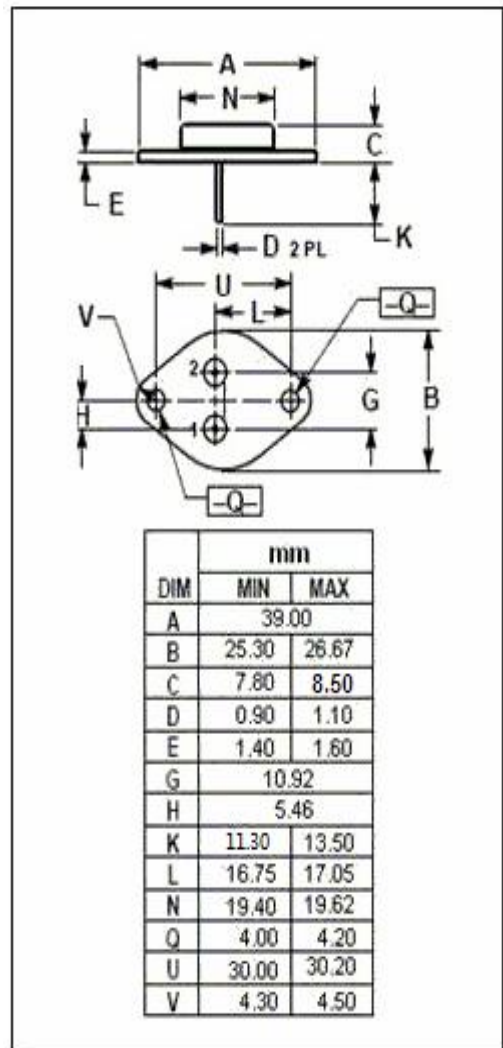
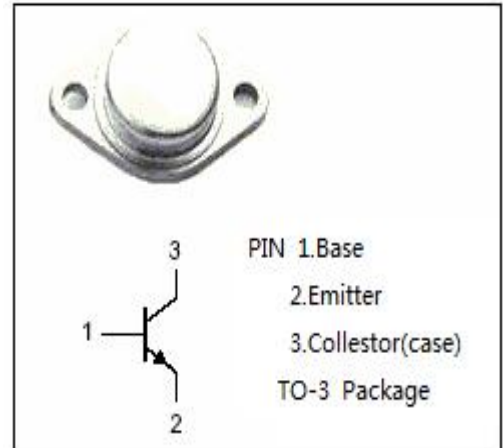
- LF large signal power amplification.
- Intended for a wide variety of intermediate power applications.
- Suited for use in audio and inverter circuits at 12V.

ABSOLUTE MAXIMUM RATINGS(T_a=25°C)

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°C	117	W
T _J	Junction Temperature	200	°C
T _{stg}	Storage Temperature	-65~200	°C

THERMAL CHARACTERISTICS

SYMBOL	PARAMETER	MAX	UNIT
R _{th j-c}	Thermal Resistance, Junction to Case	1.5	°C/W



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ELECTRICAL CHARACTERISTICS

T_C=25°C 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	μA
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

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