

**SPTECH Silicon NPN Power Transistor**

**BD142**

**DESCRIPTION**

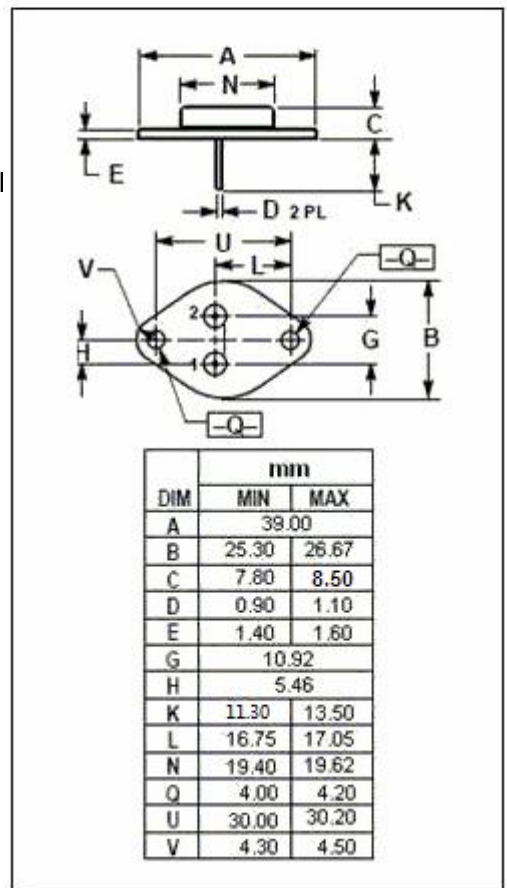
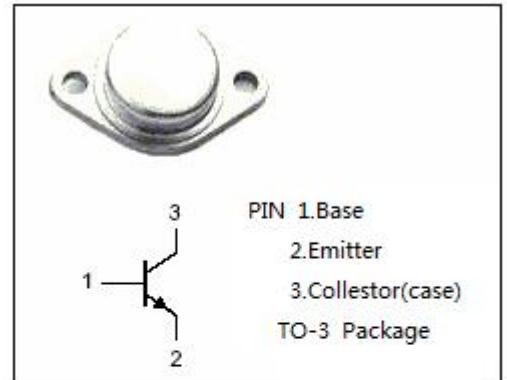
- Low Collector Saturation Voltage
- High Power Dissipation

**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<sub>a</sub>=25°C)**

SYMBOL	PARAMETER	VALUE	UNIT
V <sub>CBO</sub>	Collector-Base Voltage	50	V
V <sub>CEO</sub>	Collector-Emitter Voltage	45	V
V <sub>EBO</sub>	Emitter-Base Voltage	7	V
I <sub>C</sub>	Collector Current-Continuous	15	A
I <sub>B</sub>	Base Current	7	A
P <sub>C</sub>	Collector Power Dissipation@T <sub>C</sub> =25°C	117	W
T <sub>J</sub>	Junction Temperature	200	°C
T <sub>stg</sub>	Storage Temperature	-65~200	°C
SYMBOL	PARAMETER	MAX	UNIT
R <sub>th j-c</sub>	Thermal Resistance, Junction to Case	1.5	°C/W



**ELECTRICAL CHARACTERISTICS**

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

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