

isc Silicon NPN Power Transistor

BD743

DESCRIPTION

- Collector-Emitter Breakdown Voltage-
: $V_{(BR)CEO} = 45V(\text{Min})$
- Collector Power Dissipation-
: $P_C = 90W @ I_C = 25^\circ C$
- 15A Continuous Collector Current
- Complement to Type BD744
- Minimum Lot-to-Lot variations for robust device performance and reliable operation

APPLICATIONS

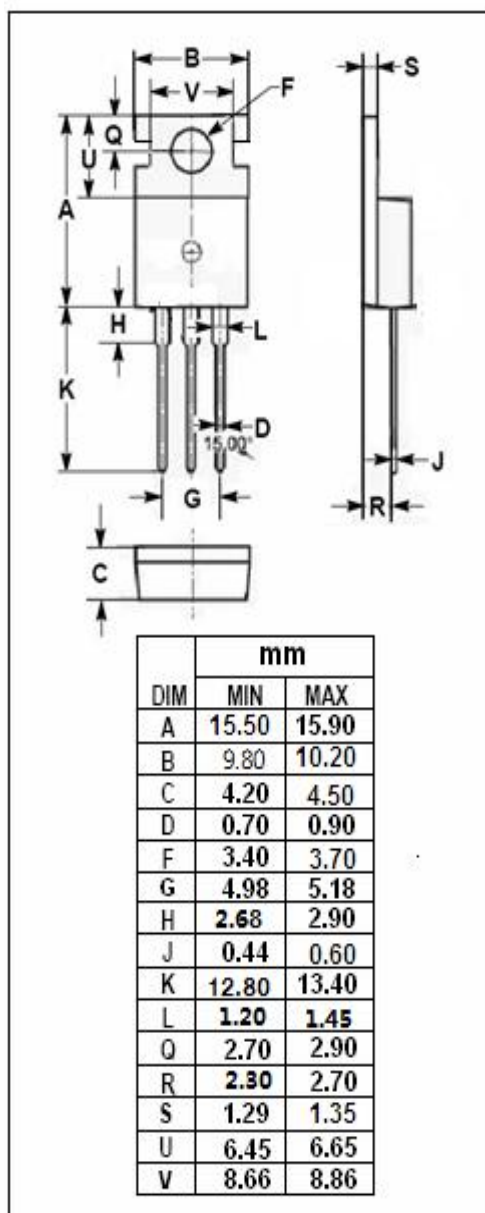
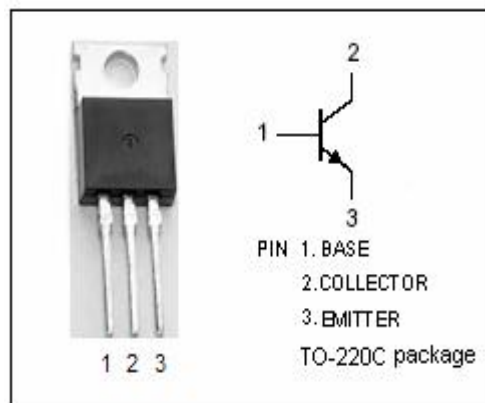
- Designed for use in general purpose power amplifier and switching applications.

ABSOLUTE MAXIMUM RATINGS($T_a = 25^\circ C$)

SYMBOL	PARAMETER	VALUE	UNIT
V_{CBO}	Collector-Base Voltage	50	V
V_{CEO}	Collector-Emitter Voltage	45	V
V_{EBO}	Emitter-Base Voltage	5	V
I_C	Collector Current-Continuous	15	A
I_{CM}	Collector Current-Peak	20	A
I_B	Base Current-Continuous	5	A
P_C	Collector Power Dissipation @ $T_a = 25^\circ C$	2	W
	Collector Power Dissipation @ $T_c = 25^\circ C$	90	
T_J	Junction Temperature	150	$^\circ C$
T_{stg}	Storage Temperature Range	-65~150	$^\circ C$

THERMAL CHARACTERISTICS

SYMBOL	PARAMETER	MAX	UNIT
$R_{th j-c}$	Thermal Resistance, Junction to Case	1.4	$^\circ C/W$
$R_{th j-a}$	Thermal Resistance, Junction to Ambient	62.5	$^\circ C/W$



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ELECTRICAL CHARACTERISTICS

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

SYMBOL	PARAMETER	CONDITIONS	MIN		MAX	UNIT
$V_{(BR)CEO}$	Collector-Emitter Breakdown Voltage	$I_C=30\text{mA}; I_B=0$	45			V
$V_{CE(sat)-1}$	Collector-Emitter Saturation Voltage	$I_C=5\text{A}; I_B=0.5\text{A}$			1.0	V
$V_{CE(sat)-2}$	Collector-Emitter Saturation Voltage	$I_C=15\text{A}; I_B=5\text{A}$			3.0	V
$V_{BE(on)-1}$	Base-Emitter On Voltage	$I_C=5\text{A}; V_{CE}=4\text{V}$			1.0	V
$V_{BE(on)-2}$	Base-Emitter On Voltage	$I_C=15\text{A}; V_{CE}=4\text{V}$			3.0	V
I_{CBO}	Collector Cutoff Current	$V_{CB}=50\text{V}; I_E=0$			0.1	mA
		$V_{CB}=50\text{V}; I_E=0; T_C=125^{\circ}\text{C}$			5.0	
I_{CEO}	Collector Cutoff Current	$V_{CE}=30\text{V}; I_B=0$			0.1	mA
I_{EBO}	Emitter Cutoff Current	$V_{EB}=5\text{V}; I_C=0$			0.5	mA
h_{FE-1}	DC Current Gain	$I_C=1\text{A}; V_{CE}=4\text{V}$	40			
h_{FE-2}	DC Current Gain	$I_C=5\text{A}; V_{CE}=4\text{V}$	20		150	
h_{FE-3}	DC Current Gain	$I_C=15\text{A}; V_{CE}=4\text{V}$	5			

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