

**Silicon PNP Power Transistor**

**BD744C**

**DESCRIPTION**

- Collector-Emitter Breakdown Voltage-  
:  $V_{(BR)CEO} = -100V(\text{Min})$
- Collector Power Dissipation-  
:  $P_C = 90W @ I_C = 25^\circ C$
- 15A Continuous Collector Current
- Complement to Type BD743C

**APPLICATIONS**

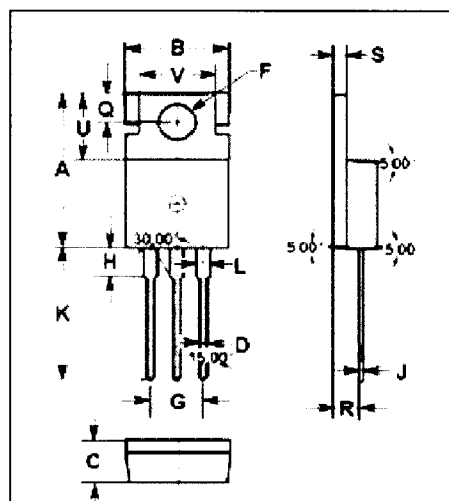
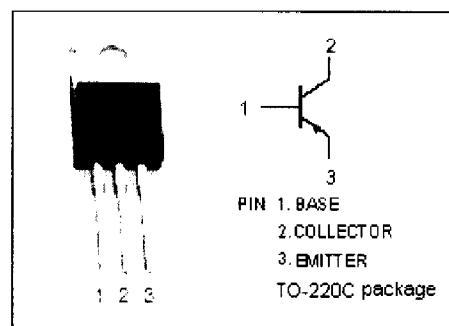
- Designed for use in general purpose power amplifier and switching applications.

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

SYMBOL	PARAMETER	VALUE	UNIT
$V_{CBO}$	Collector-Base Voltage	-110	V
$V_{CEO}$	Collector-Emitter Voltage	-100	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	$^\circ C/W$



DIM	mm	
	MIN	MAX
A	15.70	15.90
B	9.90	10.10
C	4.20	4.40
D	0.70	0.90
F	3.40	3.60
G	4.98	5.18
H	2.70	2.90
J	0.44	0.46
K	13.20	13.40
L	1.10	1.30
Q	2.70	2.90
R	2.50	2.70
S	1.29	1.31
U	6.45	6.65
V	8.66	8.86



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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	$I_C = -30\text{mA}; I_B = 0$	-100		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	$V_{CB} = -110\text{V}; I_E = 0$		-0.1	mA
		$V_{CB} = -110\text{V}; I_E = 0; T_C = 125^\circ\text{C}$		-5.0	
$I_{CEO}$	Collector Cutoff Current	$V_{CE} = -60\text{V}; I_B = 0$		-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		

## Switching Times

Symbol	Parameter	Conditions	MIN	MAX	UNIT
$t_d$	Delay Time	$I_C = -5\text{A}; I_{B1} = -I_{B2} = -5\text{A}; V_{BE(off)} = 4.2\text{V}; R_L = 6\ \Omega; t_p = 20\ \mu\text{s}; \text{Duty Cycle} \leq 2\%$		20	ns
$t_r$	Rise Time			120	ns
$t_s$	Storage Time			600	ns
$t_f$	Fall time			300	ns