

**isc Silicon NPN Power Transistor**

**BD743C**

**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 BD744C

**APPLICATIONS**

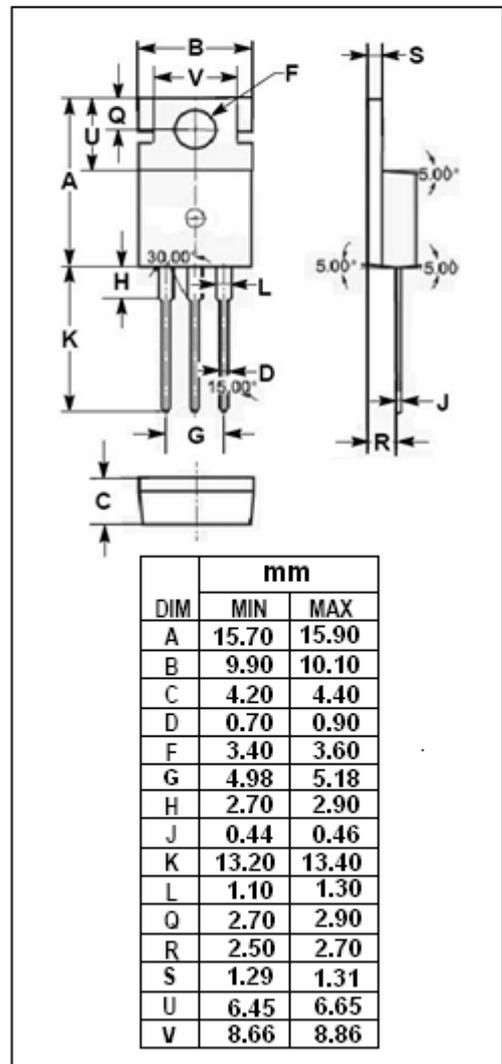
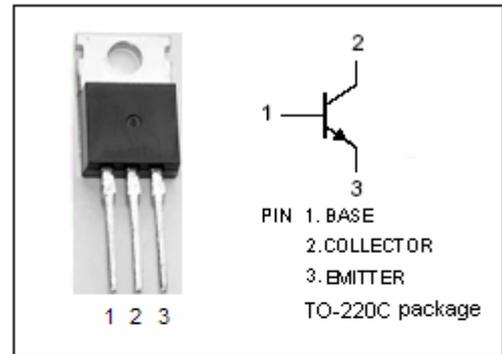
- Designed for use in general purpose power amplifier and switching applications.

**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	$^\circ C/W$



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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

$t_d$	Delay Time	$I_C=5\text{A}; I_{B1}=-I_{B2}=0.5\text{A};$		20	ns
$t_r$	Rise Time			350	ns
$t_s$	Storage Time			500	ns
$t_f$	Fall time			400	ns