

isc Silicon PNP Power Transistor

BD744A

DESCRIPTION

- Collector-Emitter Breakdown Voltage-
: $V_{(BR)CEO} = -60V(\text{Min})$
- Collector Power Dissipation-
: $P_C = 90W @ I_C = 25^\circ\text{C}$
- 15A Continuous Collector Current
- Complement to Type BD743A
- Minimum Lot-to-Lot variations for robust device performance and reliable operation

APPLICATIONS

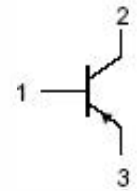
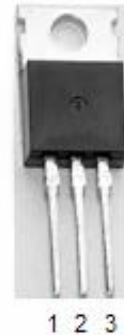
- Designed for use in general purpose power amplifier and switching applications.

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

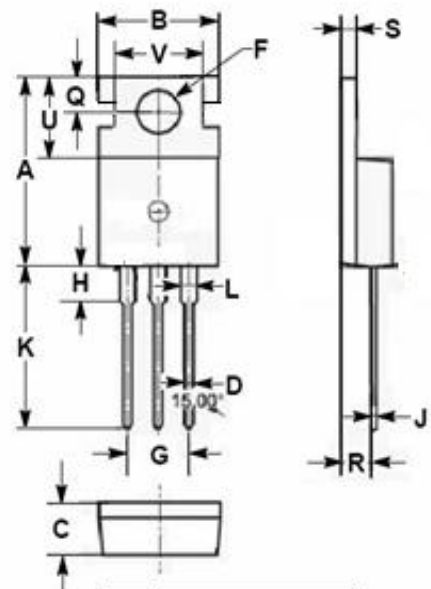
SYMBOL	PARAMETER	VALUE	UNIT
V_{CBO}	Collector-Base Voltage	-70	V
V_{CEO}	Collector-Emitter Voltage	-60	V
V_{EBO}	Emitter-Base Voltage	-5	V
I_C	Collector Current-Continuous	-15	A
I_{CM}	Collector Current-Peak	-20	A
I_B	Base Current-Continuous	-5	A
P_C	Collector Power Dissipation @ $T_a = 25^\circ\text{C}$	2	W
	Collector Power Dissipation @ $T_C = 25^\circ\text{C}$	90	
T_J	Junction Temperature	150	$^\circ\text{C}$
T_{stg}	Storage Temperature Range	-65~150	$^\circ\text{C}$

THERMAL CHARACTERISTICS

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



PIN 1. BASE
2. COLLECTOR
3. EMITTER
TO-220C package



DIM	mm	
	MIN	MAX
A	15.50	15.90
B	9.80	10.20
C	4.20	4.50
D	0.70	0.90
F	3.40	3.70
G	4.98	5.18
H	2.68	2.90
J	0.44	0.60
K	12.80	13.40
L	1.20	1.45
Q	2.70	2.90
R	2.30	2.70
S	1.29	1.35
U	6.45	6.65
V	8.66	8.86

isc Silicon PNP Power Transistor

BD744A

ELECTRICAL CHARACTERISTICS

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

SYMBOL	PARAMETER	CONDITIONS	MIN		MAX	UNIT
$V_{(BR)CEO}$	Collector-Emitter Breakdown Voltage	$I_C = -30\text{mA}$; $I_B = 0$	-60			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	$V_{CB} = -70\text{V}$; $I_E = 0$			-0.1	mA
		$V_{CB} = -70\text{V}$; $I_E = 0$; $T_C = 125^{\circ}\text{C}$			-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			

Switching Times

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

NOTICE:

ISC reserves the rights to make changes of the content herein the datasheet at any time without notification. The information contained herein is presented only as a guide for the applications of our products.

ISC products are intended for usage in general electronic equipment. The products are not designed for use in equipment which require specialized quality and/or reliability, or in equipment which could have applications in hazardous environments, aerospace industry, or medical field. Please contact us if you intend our products to be used in these special applications.

ISC makes no warranty or guarantee regarding the suitability of its products for any particular purpose, nor does ISC assume any liability arising from the application or use of any products, and specifically disclaims any and all liability, including without limitation special, consequential or incidental damages.