

isc Silicon NPN Power Transistor
BD953
DESCRIPTION

- Collector-Emitter Breakdown Voltage-
: $V_{(BR)CEO} = 100V(\text{Min})$
- DC Current Gain-
: $h_{FE} = 40(\text{Min}) @ I_C = 500\text{mA}$
- Complement to Type BD954
- Minimum Lot-to-Lot variations for robust device performance and reliable operation

APPLICATIONS

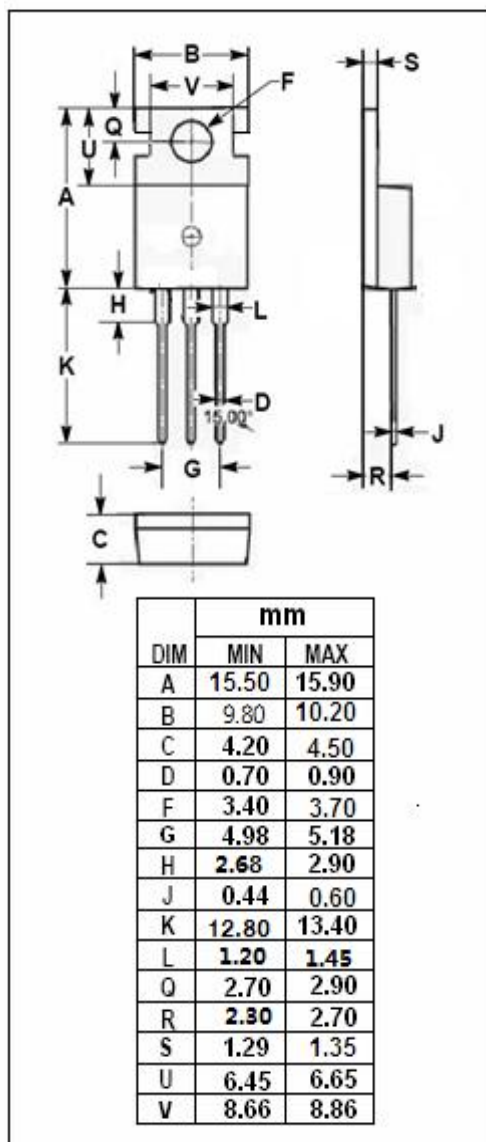
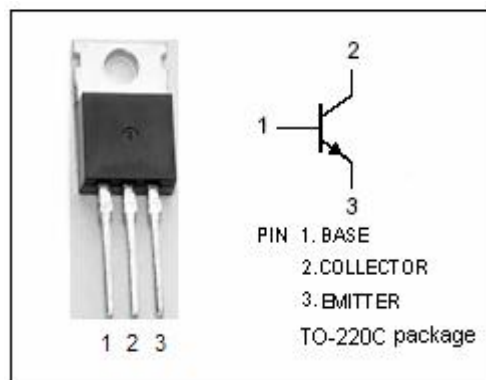
- Designed for power amplifier and switching applications

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

SYMBOL	PARAMETER	VALUE	UNIT
V_{CBO}	Collector-Base Voltage	100	V
V_{CEO}	Collector-Emitter Voltage	100	V
V_{EBO}	Emitter-Base Voltage	5	V
I_C	Collector Current-Continuous	5	A
I_{CM}	Collector Current-Peak	8	A
P_C	Collector Power Dissipation @ $T_C = 25^\circ\text{C}$	40	W
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	3.12	$^\circ\text{C/W}$
$R_{th\ j-a}$	Thermal Resistance, Junction to Ambient	70	$^\circ\text{C/W}$



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ELECTRICAL CHARACTERISTICS

T_C=25°C unless otherwise specified

SYMBOL	PARAMETER	CONDITIONS	MIN	TYP.	MAX	UNIT
V _{(BR)CEO}	Collector-Emitter Breakdown Voltage	I _C = 1mA ; I _B = 0	100			V
V _{(BR)CBO}	Collector-Base Breakdown Voltage	I _C = 1mA ; I _E = 0	100			V
V _{(BR)EBO}	Emitter-Base Breakdown Voltage	I _E = 1mA ; I _C = 0	5			V
V _{CE(sat)}	Collector-Emitter Saturation Voltage	I _C = 2A; I _B = 0.2A			1.0	V
V _{BE(on)}	Base-Emitter On Voltage	I _C = 2A; V _{CE} = 4V			1.4	V
I _{CBO}	Collector Cutoff Current	V _{CB} = 100V; I _E = 0			50	μA
		V _{CB} = 50V; I _E = 0, T _J =150°C			1.0	mA
I _{CEO}	Collector Cutoff Current	V _{CE} = 50V; I _B = 0			0.1	mA
I _{EBO}	Emitter Cutoff Current	V _{EB} = 5V; I _C = 0			0.2	mA
h _{FE-1}	DC Current Gain	I _C = 500mA ; V _{CE} = 4V	40			
h _{FE-2}	DC Current Gain	I _C = 2A ; V _{CE} = 4V	20			
f _T	Current-Gain—Bandwidth Product	I _C = 500mA ; V _{CE} = 4V	3			MHz

Switching Times

t _{on}	Turn-On Time	I _C = 1.0A; I _{B1} = -I _{B2} = 0.1A; V _{CC} = 20V; R _L = 20 Ω		0.3		μs
t _{off}	Turn-Off Time			1.5		μs

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