

isc Silicon NPN Power Transistor

BDX77

DESCRIPTION

- Collector-Emitter Breakdown Voltage-
: $V_{(BR)CEO} = 80V(\text{Min})$
- Complement to Type BDX78
- Minimum Lot-to-Lot variations for robust device performance and reliable operation

APPLICATIONS

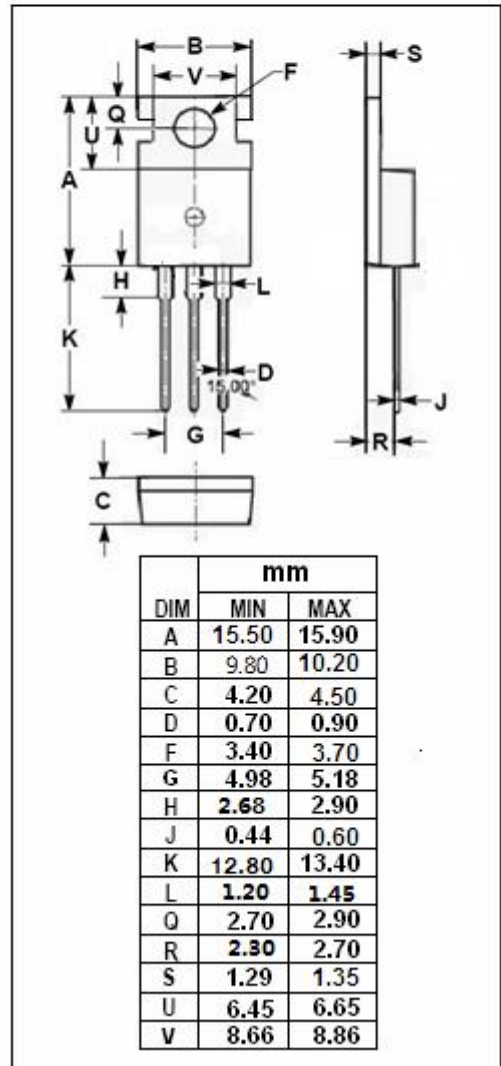
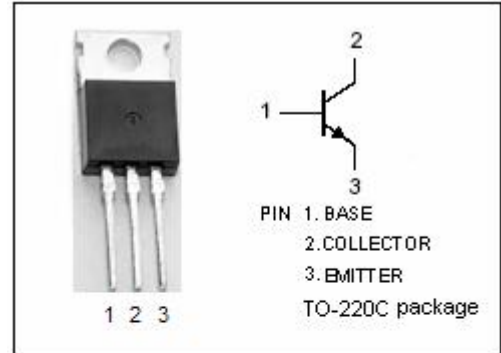
- Designed for use in hi-fi equipment delivering an output of 15 to 15 W into a 4Ω or 8Ω load.

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	80	V
V_{EBO}	Emitter-Base Voltage	5	V
I_C	Collector Current-Continuous	8	A
I_{CM}	Collector Current-Peak $t_p \leq 10\text{ms}$	12	A
I_{CSM}	Collector Current-Peak $t_p \leq 2\text{ms}$	25	A
I_B	Base Current	3	A
P_C	Collector Power Dissipation @ $T_C=25^\circ\text{C}$	60	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	2.08	$^\circ\text{C/W}$
$R_{th\ j-a}$	Thermal Resistance, Junction to Ambient	70	$^\circ\text{C/W}$



isc Silicon NPN Power Transistor**BDX77****ELECTRICAL CHARACTERISTICS****T_C=25°C unless otherwise specified**

SYMBOL	PARAMETER	CONDITIONS	MIN	MAX	UNIT
V _{(BR)CEO}	Collector-Emitter Breakdown Voltage	I _C = 30mA ; I _B = 0	80		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)-1}	Collector-Emitter Saturation Voltage	I _C = 3A; I _B = 0.3A		1.0	V
V _{CE(sat)-2}	Collector-Emitter Saturation Voltage	I _C = 6A; I _B = 0.6A		1.5	V
V _{BE(sat)}	Base-Emitter Saturation Voltage	I _C = 6A; I _B = 0.6A		2.0	V
V _{BE(on)}	Base-Emitter On Voltage	I _C = 3A ; V _{CE} = 2V		1.5	V
I _{CEO}	Collector Cutoff Current	V _{CE} = 30V; I _B = 0		0.2	mA
I _{CBO}	Collector Cutoff Current	V _{CB} = 40V; I _E = 0; T _J = 150°C		1.0	mA
I _{EBO}	Emitter Cutoff Current	V _{EB} = 5V; I _C =0		0.5	mA
h _{FE}	DC Current Gain	I _C = 1A ; V _{CE} = 2V	30		
f _T	Current-Gain—Bandwidth Product	I _C = 0.3A ; V _{CE} = 3V, f _{test} = 1.0MHz	7.0		MHz

Switching Times

t _{on}	Turn-On Time	I _C = 2A; I _{B1} = -I _{B2} = 0.2A		1	μs
t _{off}	Turn-Off Time			4	μs

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