

INCHANGE Semiconductor

isc Product Specification

isc Silicon NPN Power Transistor

BDX77F

DESCRIPTION

- Collector-Emitter Breakdown Voltage-
: $V_{(BR)CEO} = 80V(\text{Min})$
- Complement to Type BDX78F

APPLICATIONS

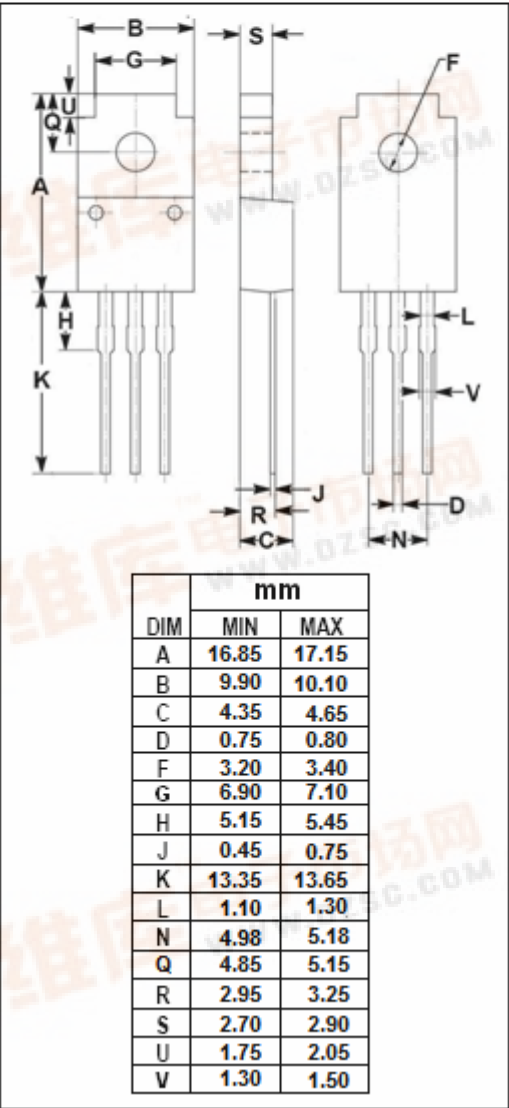
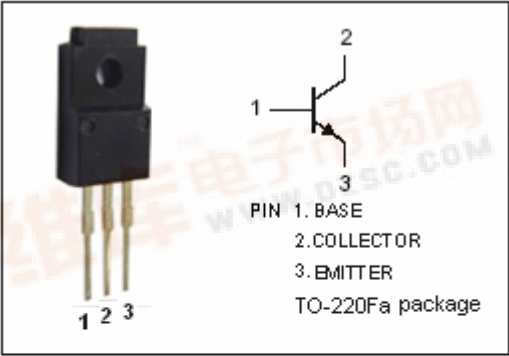
- Designed for use in hi-fi equipment delivering an output of 15 to 15 W into a 4Ω or 8Ω load.

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 s	12	A
I_B	Base Current	3	A
P_C	Collector Power Dissipation @ $T_C=25^{\circ}\text{C}$	32	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	6.3	$^{\circ}\text{C/W}$



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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	$I_C=0.2\text{A}; I_B=0$	80		V
$V_{(BR)CBO}$	Collector-Base Breakdown Voltage	$I_C=1\text{mA}; I_E=0$	100		V
$V_{(BR)EBO}$	Emitter-Base Breakdown Voltage	$I_E=1\text{mA}; I_C=0$	5		V
$V_{CE(sat)-1}$	Collector-Emitter Saturation Voltage	$I_C=3\text{A}; I_B=0.3\text{A}$		1.0	V
$V_{CE(sat)-2}$	Collector-Emitter Saturation Voltage	$I_C=6\text{A}; I_B=0.6\text{A}$		1.5	V
$V_{BE(sat)}$	Base-Emitter Saturation Voltage	$I_C=6\text{A}; I_B=0.6\text{A}$		2.0	V
$V_{BE(on)}$	Base-Emitter On Voltage	$I_C=3\text{A}; V_{CE}=2\text{V}$		1.5	V
I_{CEO}	Collector Cutoff Current	$V_{CE}=30\text{V}; I_B=0$		0.2	mA
I_{CBO}	Collector Cutoff Current	$V_{CB}=V_{CBO}; I_E=0$ $V_{CB}=\frac{1}{2}V_{CBO}; I_E=0; T_J=150^{\circ}\text{C}$		0.1 1.0	mA
I_{EBO}	Emitter Cutoff Current	$V_{EB}=5\text{V}; I_C=0$		0.5	mA
h_{FE}	DC Current Gain	$I_C=2\text{A}; V_{CE}=2\text{V}$	30		
f_T	Current-Gain—Bandwidth Product	$I_C=0.3\text{A}; V_{CE}=3\text{V}; f_{test}=1.0\text{MHz}$	7.0		MHz

Switching Times

t_{on}	Turn-On Time	$I_C=2\text{A}; I_{B1}=-I_{B2}=0.2\text{A}$		1	μs
t_{off}	Turn-Off Time			4	μs