

isc Silicon NPN Power Transistor

BDX91/93/95

DESCRIPTION

- Collector Current $-I_C = 10A$
- Collector-Emitter Breakdown Voltage-
: $V_{(BR)CEO} = 60V(\text{Min})$ - BDX91
80V(Min)- BDX93
100V(Min)- BDX95
- Complement to Type BDX92/94/96
- Minimum Lot-to-Lot variations for robust device performance and reliable operation

APPLICATIONS

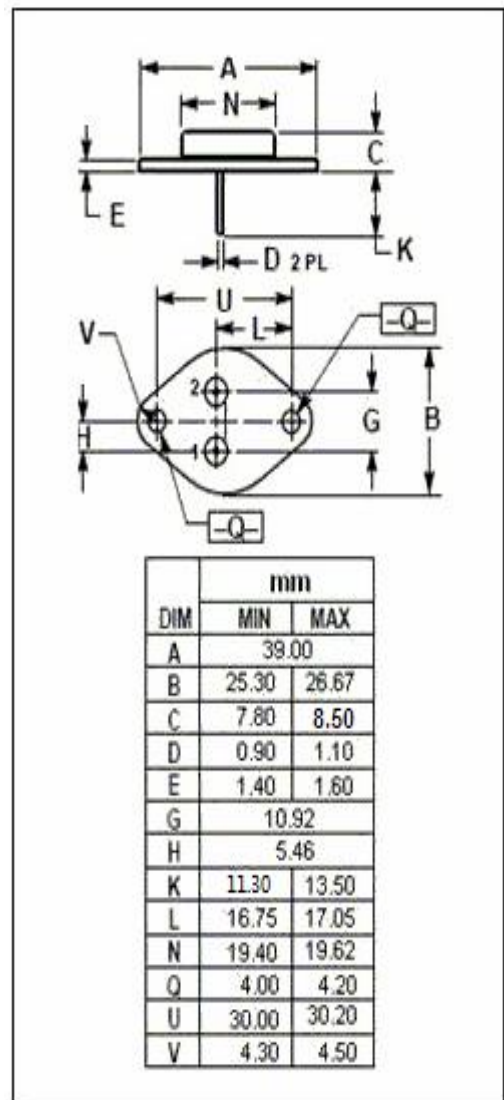
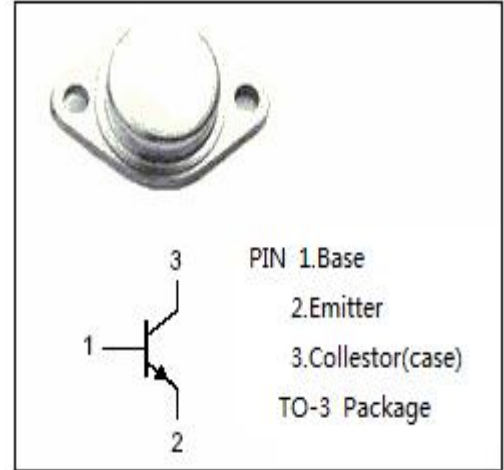
- Designed for use in general purpose power amplifier and switching applications

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

SYMBOL	PARAMETER	VALUE	UNIT
V_{CBO}	Collector-Base Voltage	BDX91 60	V
		BDX93 80	
		BDX95 100	
V_{CEO}	Collector-Emitter Voltage	BDX91 60	V
		BDX93 80	
		BDX95 100	
V_{EBO}	Emitter-Base Voltage	5	V
I_C	Collector Current-Continuous	10	A
I_{CM}	Collector Current-Peak	15	A
P_C	Collector Power Dissipation @ $T_C = 25^\circ\text{C}$	90	W
T_J	Junction Temperature	200	$^\circ\text{C}$
T_{stg}	Storage Temperature Range	-65~200	$^\circ\text{C}$

THERMAL CHARACTERISTICS

SYMBOL	PARAMETER	MAX	UNIT
$R_{th\ j-c}$	Thermal Resistance, Junction to Case	1.94	$^\circ\text{C/W}$



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ELECTRICAL CHARACTERISTICS

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

SYMBOL	PARAMETER		CONDITIONS	MIN	TYP.	MAX	UNIT
$V_{(BR)CEO}$	Collector-Emitter Breakdown Voltage	BDX91	$I_C= 30\text{mA} ;I_B=0$	45			V
		BDX93		60			
		BDX95		80			
$V_{CE(sat)-1}$	Collector-Emitter Saturation Voltage		$I_C= 3\text{A}; I_B= 0.3\text{A}$			0.8	V
$V_{CE(sat)-2}$	Collector-Emitter Saturation Voltage		$I_C= 5\text{A}; I_B= 1\text{A}$			1.0	V
$V_{BE(sat)-1}$	Base-Emitter Saturation Voltage		$I_C= 3\text{A}; I_B= 0.3\text{A}$			1.5	V
$V_{BE(sat)-2}$	Base-Emitter Saturation Voltage		$I_C= 5\text{A}; I_B= 1\text{A}$			2.0	V
$V_{BE(on)}$	Base-Emitter On Voltage		$I_C= 3\text{A}; V_{CE}= 2\text{V}$			1.4	V
I_{CBO}	Collector Cutoff Current	BDX91	$V_{CB}= 60\text{V}; I_E= 0$ $V_{CB}= 30\text{V}; I_E= 0; T_C= 150^{\circ}\text{C}$			0.1 2.0	mA
		BDX93	$V_{CB}= 80\text{V}; I_E= 0$ $V_{CB}= 40\text{V}; I_E= 0; T_C= 150^{\circ}\text{C}$			0.1 2.0	
		BDX95	$V_{CB}= 100\text{V}; I_E= 0$ $V_{CB}= 50\text{V}; I_E= 0; T_C= 150^{\circ}\text{C}$			0.1 2.0	
I_{CEO}	Collector Cutoff Current	BDX91	$V_{CE}= 60\text{V}; I_B= 0$			0.2	mA
		BDX93	$V_{CE}= 80\text{V}; I_B= 0$				
		BDX95	$V_{CE}= 100\text{V}; I_B= 0$				
I_{EBO}	Emitter Cutoff Current		$V_{EB}= 5\text{V}; I_C=0$			0.1	mA
h_{FE-1}	DC Current Gain		$I_C= 3\text{A}; V_{CE}= 2\text{V}$	20			
h_{FE-2}	DC Current Gain		$I_C= 5\text{A}; V_{CE}= 2\text{V}$	10			
f_T	Current-Gain—Bandwidth Product		$I_C= 1\text{A}; V_{CE}= 10\text{V}$	4			MHz
Switching times							
t_{on}	Turn-on Time		$I_C= 3\text{A}; I_{B1}= -I_{B2}= 0.3\text{A}$			1.0	$\mu\text{ s}$
t_{off}	Turn-off Time					2.0	$\mu\text{ s}$

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