

isc Silicon PNP Darlington Power Transistor

BDX84/A/B/C

DESCRIPTION

- High DC Current Gain-
: $h_{FE} = 1000(\text{Min}) @ I_C = -5A$
- Collector-Emitter Sustaining Voltage-
: $V_{CEO(SUS)} = -45V(\text{Min})$ - BDX84; $-60V(\text{Min})$ - BDX84A
 $-80V(\text{Min})$ - BDX84B; $-100V(\text{Min})$ - BDX84C
- Minimum Lot-to-Lot variations for robust device performance and reliable operation

APPLICATIONS

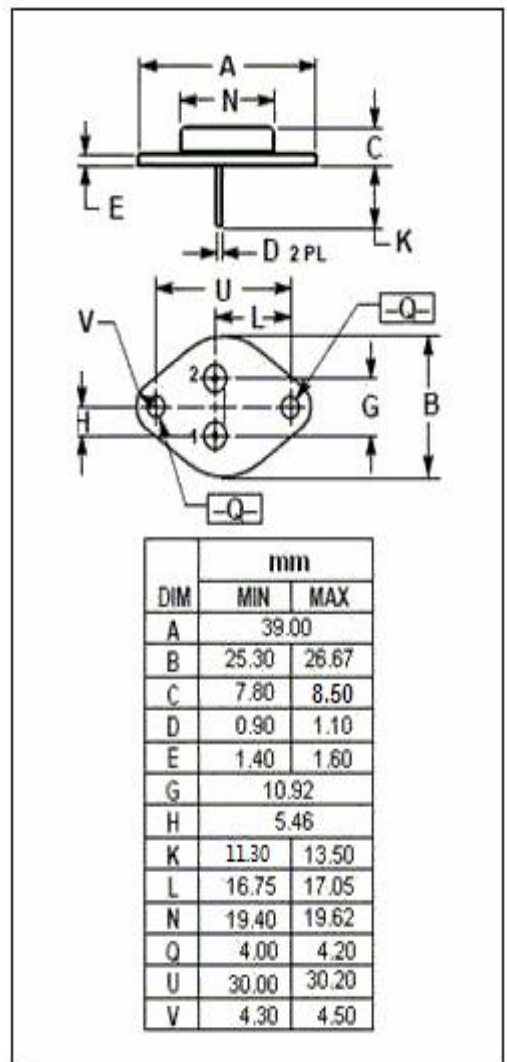
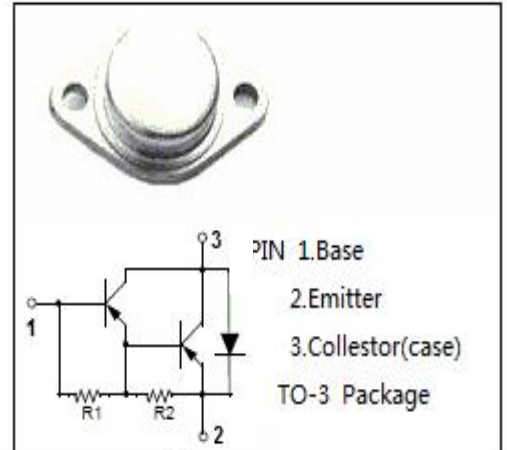
- Power switching
- Hammer drivers
- Series and shunt regulators
- Audio amplifiers

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

SYMBOL	PARAMETER	VALUE	UNIT
V_{CBO}	Collector-Base Voltage	BDX84 -45	V
		BDX84A -60	
		BDX84B -80	
		BDX84C -100	
V_{CEO}	Collector-Emitter Voltage	BDX84 -45	V
		BDX84A -60	
		BDX84B -80	
		BDX84C -100	
V_{EBO}	Emitter-Base Voltage	-5	V
I_C	Collector Current-Continuous	-10	A
I_{CM}	Collector Current-Peak	-15	A
I_B	Base Current	-250	mA
P_C	Collector Power Dissipation @ $T_C = 25^\circ\text{C}$	125	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	1.4	$^\circ\text{C/W}$



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ELECTRICAL CHARACTERISTICS

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

SYMBOL	PARAMETER		CONDITIONS	MIN	TYP.	MAX	UNIT
$V_{CEO(SUS)}$	Collector-Emitter Sustaining Voltage	BDX84	$I_C = -50\text{mA}; I_B = 0$	-45			V
		BDX84A		-60			
		BDX84B		-80			
		BDX84C		-100			
$V_{CE(sat)}$	Collector-Emitter Saturation Voltage		$I_C = -5\text{A}; I_B = -10\text{mA}$			-2.0	V
$V_{BE(on)-1}$	Base-Emitter On Voltage		$I_C = -5\text{A}; V_{CE} = -3\text{V}$			-2.8	V
$V_{BE(on)-2}$	Base-Emitter On Voltage		$I_C = -10\text{A}; V_{CE} = -3\text{V}$			-4.5	V
I_{CEV}	Collector Cutoff Current	BDX84	$V_{CE} = -45\text{V}; V_{BE} = 1.5\text{V}$ $V_{CE} = -45\text{V}; V_{BE} = 1.5\text{V}; T_C = 150^\circ\text{C}$			-0.5 -3.0	mA
		BDX84A	$V_{CE} = -60\text{V}; V_{BE} = 1.5\text{V}$ $V_{CE} = -60\text{V}; V_{BE} = 1.5\text{V}; T_C = 150^\circ\text{C}$			-0.5 -3.0	
		BDX84B	$V_{CE} = -80\text{V}; V_{BE} = 1.5\text{V}$ $V_{CE} = -80\text{V}; V_{BE} = 1.5\text{V}; T_C = 150^\circ\text{C}$			-0.5 -3.0	
		BDX84C	$V_{CE} = -100\text{V}; V_{BE} = 1.5\text{V}$ $V_{CE} = -100\text{V}; V_{BE} = 1.5\text{V}; T_C = 150^\circ\text{C}$			-0.5 -3.0	
I_{CEO}	Collector Cutoff Current	BDX84	$V_{CE} = -20\text{V}; I_B = 0$			-1.0	mA
		BDX84A	$V_{CE} = -30\text{V}; I_B = 0$				
		BDX84B	$V_{CE} = -40\text{V}; I_B = 0$				
		BDX84C	$V_{CE} = -50\text{V}; I_B = 0$				
I_{EBO}	Emitter Cutoff Current		$V_{EB} = -5\text{V}; I_C = 0$			-5.0	mA
h_{FE-1}	DC Current Gain		$I_C = -1\text{A}; V_{CE} = -3\text{V}$	750			
h_{FE-2}	DC Current Gain		$I_C = -5\text{A}; V_{CE} = -3\text{V}$	1000			
h_{FE-3}	DC Current Gain		$I_C = -10\text{A}; V_{CE} = -3\text{V}$	250			

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