

isc Silicon NPN Darlington Power Transistor

BDX69/A/B/C

DESCRIPTION

- High DC Current Gain-
: $h_{FE} = 1000(\text{Min}) @ I_C = 20A$
- Low Saturation Voltage
- Complement to Type BDX68/A/B/C
- Minimum Lot-to-Lot variations for robust device performance and reliable operation

APPLICATIONS

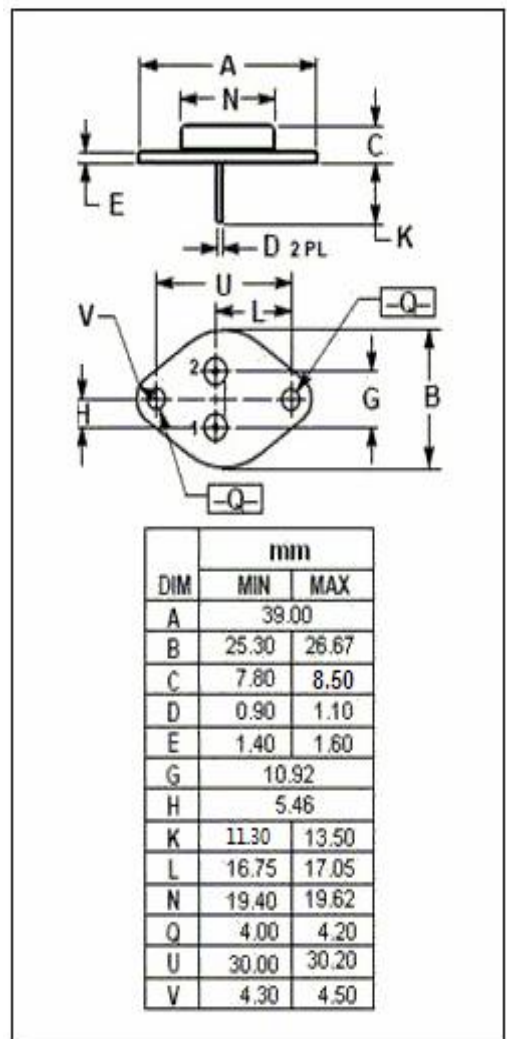
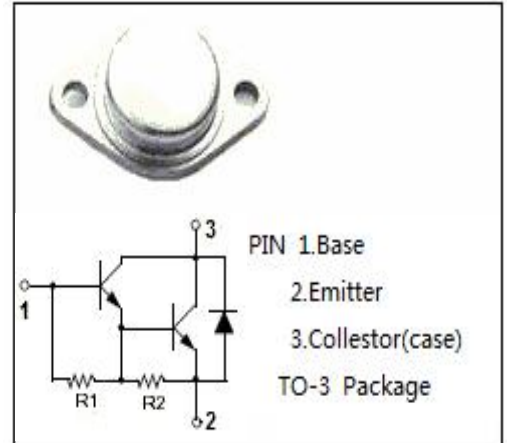
- Designed for audio output stages and general amplifier and switching applications

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

SYMBOL	PARAMETER	VALUE	UNIT
V_{CBO}	Collector-Base Voltage	BDX69	80
		BDX69A	100
		BDX69B	120
		BDX69C	140
V_{CEO}	Collector-Emitter Voltage	BDX69	60
		BDX69A	80
		BDX69B	100
		BDX69C	120
V_{EBO}	Emitter-Base Voltage	5	V
I_C	Collector Current-Continuous	25	A
I_{CM}	Collector Current-Peak	40	A
I_B	Base Current	500	mA
P_C	Collector Power Dissipation @ $T_C = 25^\circ\text{C}$	150	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	0.875	$^\circ\text{C/W}$



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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	BDX69	$I_C=50\text{mA}$; $L=25\text{mH}$	60			V
		BDX69A		80			
		BDX69B		100			
		BDX69C		120			
$V_{CE(sat)}$	Collector-Emitter Saturation Voltage		$I_C=20\text{A}$; $I_B=80\text{mA}$			2.0	V
$V_{BE(on)}$	Base-Emitter On Voltage		$I_C=20\text{A}$; $V_{CE}=3\text{V}$			2.5	V
I_{CBO}	Collector Cutoff Current	BDX69	$V_{CB}=80\text{V}$; $I_E=0$ $V_{CB}=40\text{V}$; $I_E=0$; $T_C=150^\circ\text{C}$			2.0 10	mA
		BDX69A	$V_{CB}=100\text{V}$; $I_E=0$ $V_{CB}=50\text{V}$; $I_E=0$; $T_C=150^\circ\text{C}$			2.0 10	
		BDX69B	$V_{CB}=120\text{V}$; $I_E=0$ $V_{CB}=60\text{V}$; $I_E=0$; $T_C=150^\circ\text{C}$			2.0 10	
		BDX69C	$V_{CB}=140\text{V}$; $I_E=0$ $V_{CB}=70\text{V}$; $I_E=0$; $T_C=150^\circ\text{C}$			2.0 10	
I_{CEO}	Collector Cutoff Current	BDX69	$V_{CE}=30\text{V}$; $I_B=0$			6.0	mA
		BDX69A	$V_{CE}=40\text{V}$; $I_B=0$				
		BDX69B	$V_{CE}=50\text{V}$; $I_B=0$				
		BDX69C	$V_{CE}=60\text{V}$; $I_B=0$				
I_{EBO}	Emitter Cutoff Current		$V_{EB}=5\text{V}$; $I_C=0$			10	mA
h_{FE-1}	DC Current Gain		$I_C=5\text{A}$; $V_{CE}=3\text{V}$		3000		
h_{FE-2}	DC Current Gain		$I_C=20\text{A}$; $V_{CE}=3\text{V}$	1000			
h_{FE-3}	DC Current Gain		$I_C=30\text{A}$; $V_{CE}=3\text{V}$		4000		
C_{OB}	Output Capacitance		$I_E=0$; $V_{CB}=10\text{V}$, $f_{test}=1.0\text{MHz}$		600		pF

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