

isc Silicon NPN Darlington Power Transistor

BDX63/A/B/C

DESCRIPTION

- Collector Current $I_C = 8A$
- High DC Current Gain $h_{FE} = 1000(\text{Min}) @ I_C = 3A$
- Complement to Type BDX62/A/B/C
- Minimum Lot-to-Lot variations for robust device performance and reliable operation

APPLICATIONS

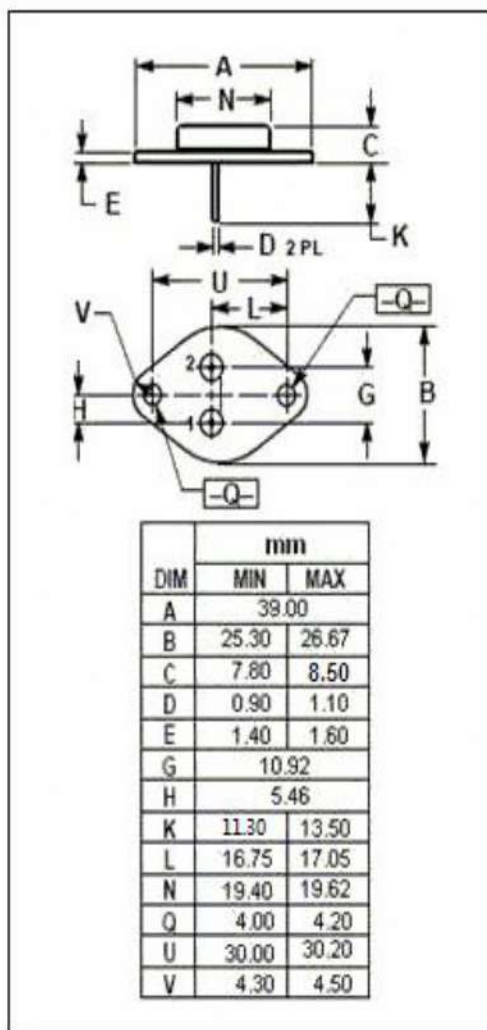
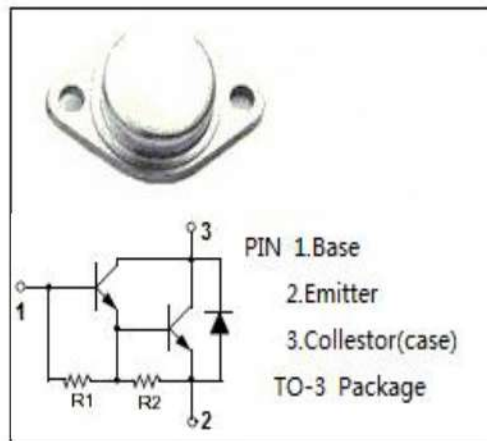
- Designed for audio output stages and general amplifier and switching applications

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

SYMBOL	PARAMETER	VALUE	UNIT
V_{CBO}	Collector-Base Voltage	BDX63	80
		BDX63A	100
		BDX63B	120
		BDX63C	140
V_{CEO}	Collector-Emitter Voltage	BDX63	60
		BDX63A	80
		BDX63B	100
		BDX63C	120
V_{EBO}	Emitter-Base Voltage	5	V
I_C	Collector Current-Continuous	8	A
I_{CM}	Collector Current-Peak	12	A
I_B	Base Current-Continuous	0.15	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
$V_{CE(SUS)}$	Collector-Emitter Sustaining Voltage	BDX63	60			V
		BDX63A	80			
		BDX63B	100			
		BDX63C	120			
$V_{CE(sat)}$	Collector-Emitter Saturation Voltage	$I_C = 3A; I_B = 12mA$			2	V
$V_{BE(on)}$	Base-Emitter On Voltage	$I_C = 3A; V_{CE} = 3V$			2.5	V
V_{ECF}	C-E Diode Forward Voltage	$I_F = 3A$		1.2		V
I_{CEO}	Collector Cutoff Current	$V_{CE} = \frac{1}{2}V_{CE0max}; I_B = 0$			0.2	mA
I_{CBO}	Collector Cutoff Current	$V_{CB} = V_{CE0max}; I_E = 0$ $V_{CB} = \frac{1}{2}V_{CB0max}; I_E = 0; T_J = 200^{\circ}\text{C}$			0.2 2	mA
I_{EBO}	Emitter Cutoff Current	$V_{EB} = 5V; I_C = 0$			5	mA
h_{FE-1}	DC Current Gain	$I_C = 0.5A; V_{CE} = 3V$		2500		
h_{FE-2}	DC Current Gain	$I_C = 3A; V_{CE} = 3V$	1000			
h_{FE-3}	DC Current Gain	$I_C = 8A; V_{CE} = 3V$		2600		
C_{OB}	Output Capacitance	$I_E = 0; V_{CB} = 10V; f_{test} = 1MHz$		100		pF
Switching times						
t_{on}	Turn-on Time	$I_C = 3A; I_{B1} = -I_{B2} = 12mA$		0.5		μs
t_{off}	Turn-off Time			5		μs

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