

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

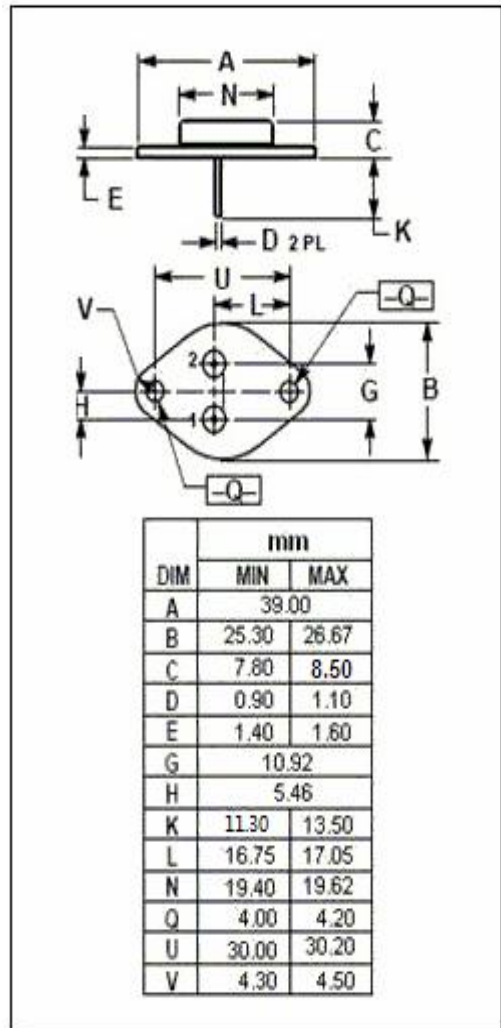
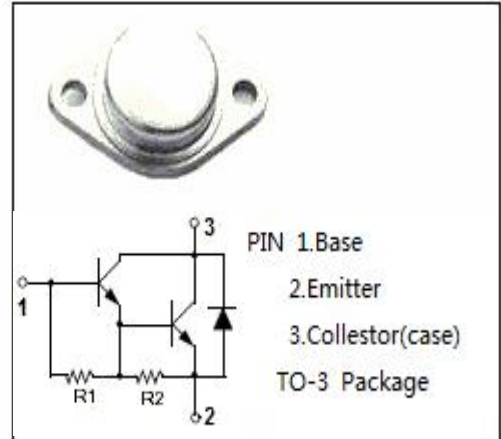
- Designed for audio output stages and general amplifier and switching applications

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

SYMBOL	PARAMETER	VALUE	UNIT	
V_{CBO}	Collector-Base Voltage	BDX63	80	V
		BDX63A	100	
		BDX63B	120	
		BDX63C	140	
V_{CEO}	Collector-Emitter Voltage	BDX63	60	V
		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°C unless otherwise specified

SYMBOL	PARAMETER	CONDITIONS	MIN	TYP.	MAX	UNIT	
V _{CEO(SUS)}	Collector-Emitter Sustaining Voltage	I _C = 50mA ; I _B =0	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} = 1/2 V _{CEOmax} ; I _B = 0			0.2	mA	
I _{CBO}	Collector Cutoff Current	V _{CB} = V _{CEOmax} ; I _E = 0 V _{CB} = 1/2 V _{CB0max} ; I _E = 0; T _J = 200°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		μ s	
t _{off}	Turn-off Time			5		μ s	

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