

isc Silicon NPN Darlington Power Transistor

BDX65/A/B/C

DESCRIPTION

- Collector Current -I_C= 12A
- High DC Current Gain-h_{FE}= 1000(Min)@ I_C= 5A
- Complement to Type BDX64/A/B/C

APPLICATIONS

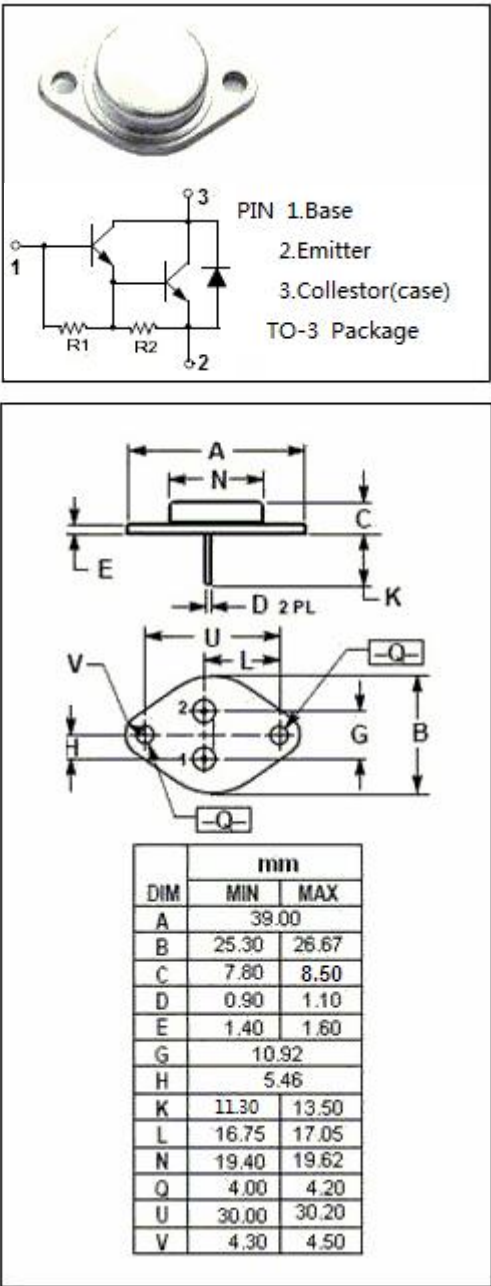
- Designed for audio output stages and general amplifier and switching applications

ABSOLUTE MAXIMUM RATINGS(T_a=25°C)

SYMBOL	PARAMETER		VALUE	UNIT
V _{CBO}	Collector-Base Voltage	BDX65	80	V
		BDX65A	100	
		BDX65B	120	
		BDX65C	140	
V _{CEO}	Collector-Emitter Voltage	BDX65	60	V
		BDX65A	80	
		BDX65B	100	
		BDX65C	120	
V _{EBO}	Emitter-Base Voltage		5	V
I _C	Collector Current-Continuous		12	A
I _{CM}	Collector Current-Peak		16	A
I _B	Base Current-Continuous		0.2	A
P _C	Collector Power Dissipation @ T _C =25°C		117	W
T _J	Junction Temperature		200	°C
T _{stg}	Storage Temperature Range		-55~200	°C

THERMAL CHARACTERISTICS

SYMBOL	PARAMETER	MAX	UNIT
R _{th j-c}	Thermal Resistance, Junction to Case	1.5	°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	BDX65	$I_C = 50\text{mA}; I_B = 0$	60			V
		BDX65A		80			
		BDX65B		100			
		BDX65C		120			
$V_{CE(sat)}$	Collector-Emitter Saturation Voltage		$I_C = 5\text{A}; I_B = 20\text{mA}$			2	V
$V_{BE(on)}$	Base-Emitter On Voltage		$I_C = 5\text{A}; V_{CE} = 3\text{V}$			2.5	V
V_{ECF}	C-E Diode Forward Voltage		$I_F = 5\text{A}$		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		$V_{CB} = V_{CE0max}; I_E = 0$ $V_{CB} = \frac{1}{2}V_{CB0max}; I_E = 0; T_J = 200^{\circ}\text{C}$			0.4 3	mA
I_{EBO}	Emitter Cutoff Current		$V_{EB} = 5\text{V}; I_C = 0$			5	mA
h_{FE-1}	DC Current Gain		$I_C = 1\text{A}; V_{CE} = 3\text{V}$		1500		
h_{FE-2}	DC Current Gain		$I_C = 5\text{A}; V_{CE} = 3\text{V}$	1000			
h_{FE-3}	DC Current Gain		$I_C = 10\text{A}; V_{CE} = 3\text{V}$		1500		
f_T	Current-Gain—Bandwidth Product		$I_C = 5\text{A}; V_{CE} = 3\text{V}$		7		MHz

Switching times

t_{on}	Turn-on Time	$I_C = 5\text{A}; I_{B1} = -I_{B2} = 20\text{mA}$		1		μs
t_{off}	Turn-off Time			6		μs