

isc Silicon NPN Darlington Power Transistor

BDX65/A/B/C

DESCRIPTION

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

APPLICATIONS

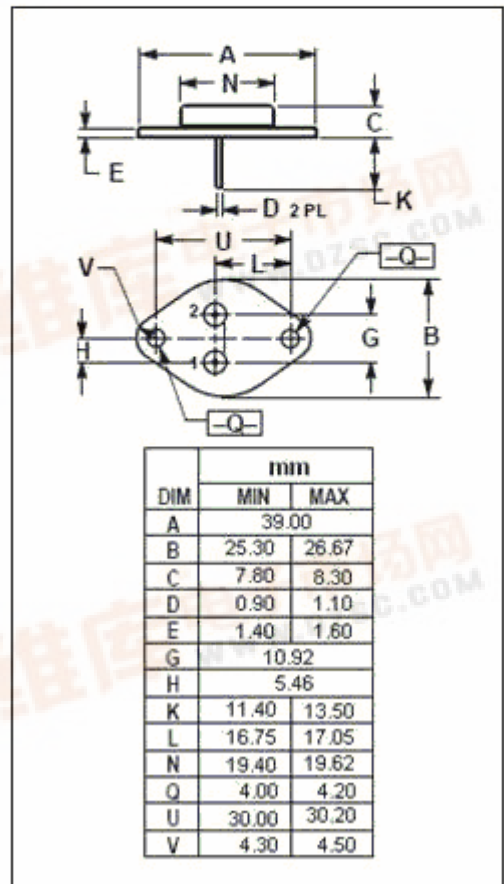
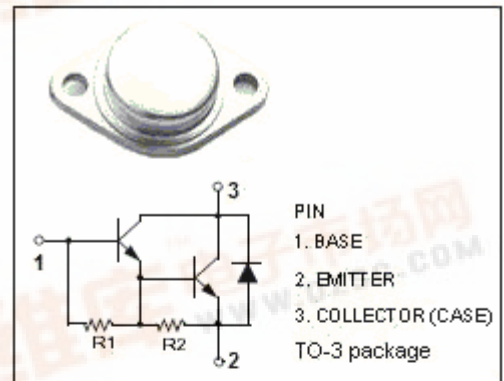
- Designed for audio output stages and general amplifier and switching applications

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

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 @ $T_C = 25^\circ\text{C}$	117	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	1.5	$^\circ\text{C/W}$



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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	BDX65	$I_C=100\text{mA}; I_B=0$	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	$V_{CE}=\frac{1}{2}V_{CEOmax}; I_B=0$			0.2	mA	
I_{CBO}	Collector Cutoff Current	$V_{CB}=V_{CEOmax}; I_E=0$ $V_{CB}=\frac{1}{2}V_{CB0max}; I_E=0; T_J=200^{\circ}\text{C}$			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	$I_C=1\text{A}; V_{CE}=3\text{V}$		3300			
h_{FE-2}	DC Current Gain	$I_C=5\text{A}; V_{CE}=3\text{V}$	1000				
h_{FE-3}	DC Current Gain	$I_C=12\text{A}; V_{CE}=3\text{V}$		3700			
C_{OB}	Output Capacitance	$I_E=0; V_{CB}=10\text{V}; f_{test}=1\text{MHz}$		200		pF	

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