

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

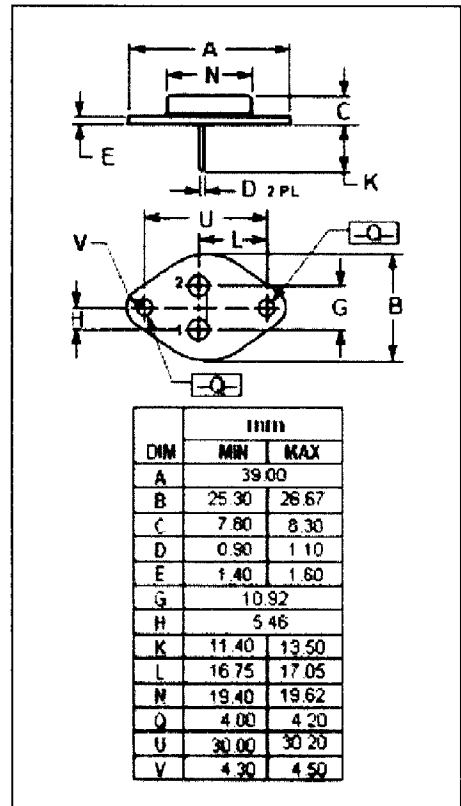
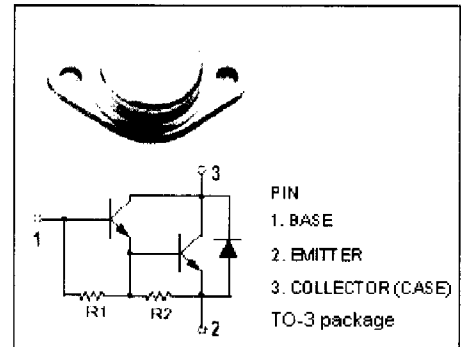
- Designed for audio output stages and general amplifier and switching applications

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

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 @ $T_C = 25^\circ C$	117	W	
$T_J$	Junction Temperature	200	$^\circ C$	
$T_{stg}$	Storage Temperature Range	-65~200	$^\circ C$	

THERMAL CHARACTERISTICS

SYMBOL	PARAMETER	MAX	UNIT
$R_{th\ j-c}$	Thermal Resistance, Junction to Case	1.5	$^\circ C/W$



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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	$I_C=100\text{mA}; I_B=0$	BDX65	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	$I_C=1\text{A}; V_{CE}=3\text{V}$		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		$\mu\text{s}$
$t_{off}$	Turn-off Time			6		$\mu\text{s}$