

isc Silicon NPN Darlington Power Transistor

BDX87/A/B/C

DESCRIPTION

- High DC Current Gain-
: $h_{FE} = 750(\text{Min}) @ I_C = 6A$
- Collector-Emitter Sustaining Voltage-
: $V_{CEO(\text{SUS})} = 45V(\text{Min})$ - BDX87; $60V(\text{Min})$ - BDX87A
 $80V(\text{Min})$ - BDX87B; $100V(\text{Min})$ - BDX87C
- Complement to Type BDX88/A/B/C
- Minimum Lot-to-Lot variations for robust device performance and reliable operation

APPLICATIONS

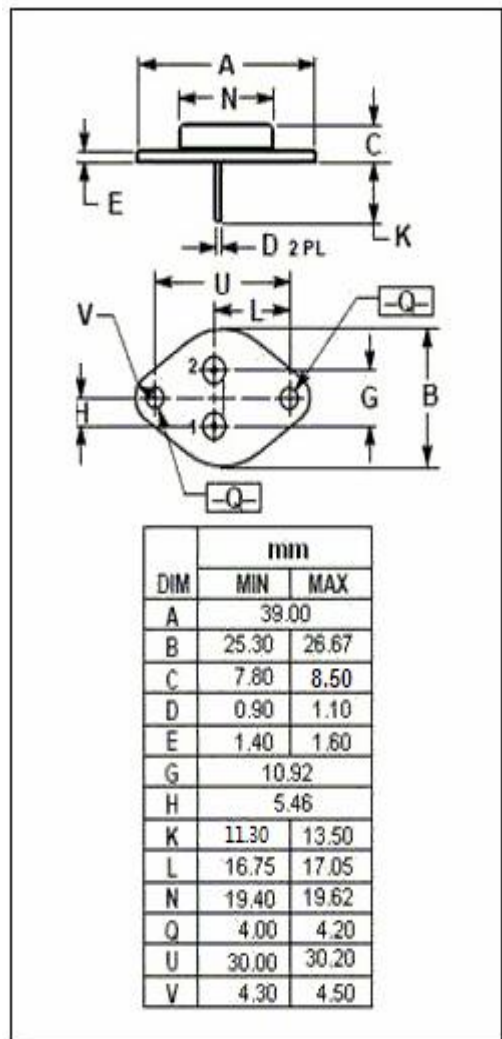
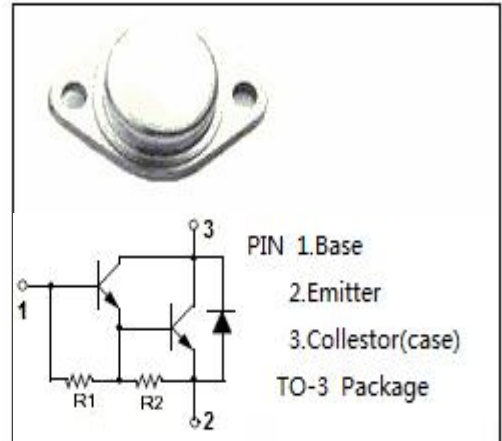
- Designed for use in power linear and switching applications.

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

SYMBOL	PARAMETER	VALUE	UNIT
V_{CBO}	Collector-Base Voltage	BDX87	45
		BDX87A	60
		BDX87B	80
		BDX87C	100
V_{CEO}	Collector-Emitter Voltage	BDX87	45
		BDX87A	60
		BDX87B	80
		BDX87C	100
V_{EBO}	Emitter-Base Voltage	5	V
I_C	Collector Current-Continuous	12	A
I_{CM}	Collector Current-Peak	18	A
I_B	Base Current	200	mA
P_C	Collector Power Dissipation @ $T_C = 25^\circ\text{C}$	120	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	1.45	$^\circ\text{C/W}$



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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	BDX87	$I_C = 50\text{mA}; I_B = 0$	45			V
		BDX87A		60			
		BDX87B		80			
		BDX87C		100			
$V_{CE(sat)-1}$	Collector-Emitter Saturation Voltage		$I_C = 6\text{A}; I_B = 24\text{mA}$			2.0	V
$V_{CE(sat)-2}$	Collector-Emitter Saturation Voltage		$I_C = 12\text{A}; I_B = 120\text{mA}$			3.0	V
$V_{BE(sat)}$	Base-Emitter Saturation Voltage		$I_C = 12\text{A}; I_B = 120\text{mA}$			4.0	V
$V_{BE(on)}$	Base-Emitter On Voltage		$I_C = 6\text{A}; V_{CE} = 3\text{V}$			2.8	V
I_{CBO}	Collector Cutoff Current	BDX87	$V_{CB} = 45\text{V}; I_E = 0$ $V_{CB} = 45\text{V}; I_E = 0; T_C = 150^{\circ}\text{C}$			0.5 5.0	mA
		BDX87A	$V_{CB} = 60\text{V}; I_E = 0$ $V_{CB} = 60\text{V}; I_E = 0; T_C = 150^{\circ}\text{C}$			0.5 5.0	
		BDX87B	$V_{CB} = 80\text{V}; I_E = 0$ $V_{CB} = 80\text{V}; I_E = 0; T_C = 150^{\circ}\text{C}$			0.5 5.0	
		BDX87C	$V_{CB} = 100\text{V}; I_E = 0$ $V_{CB} = 100\text{V}; I_E = 0; T_C = 150^{\circ}\text{C}$			0.5 5.0	
I_{CEO}	Collector Cutoff Current	BDX87	$V_{CE} = 22\text{V}; I_B = 0$			1.0	mA
		BDX87A	$V_{CE} = 30\text{V}; I_B = 0$				
		BDX87B	$V_{CE} = 40\text{V}; I_B = 0$				
		BDX87C	$V_{CE} = 50\text{V}; I_B = 0$				
I_{EBO}	Emitter Cutoff Current		$V_{EB} = 5\text{V}; I_C = 0$			2.0	mA
h_{FE-1}	DC Current Gain		$I_C = 5\text{A}; V_{CE} = 3\text{V}$	1000			
h_{FE-2}	DC Current Gain		$I_C = 6\text{A}; V_{CE} = 3\text{V}$	750		18000	
h_{FE-3}	DC Current Gain		$I_C = 12\text{A}; V_{CE} = 3\text{V}$	100			

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