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Silicon NPN Darlington Power Transistor

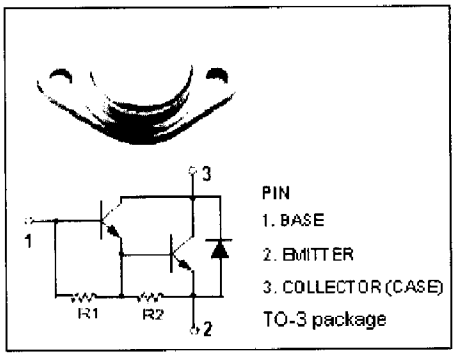
BDX83/A/B/C

DESCRIPTION

- High DC Current Gain-
  : h_{FE}= 1000(Min)@ I_C= 5A
- Collector-Emitter Sustaining Voltage-
  : $V_{CEO(SUS)}$ = 45V(Min)- BDX83; 60V(Min)- BDX83A
  80V(Min)- BDX83B; 100V(Min)- BDX83C

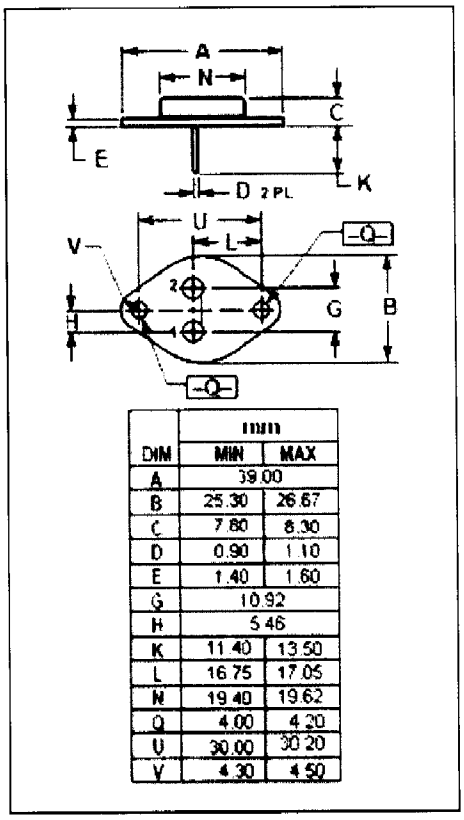
APPLICATIONS

- Power switching
- Hammer drivers
- Series and shunt regulators
- Audio amplifiers



ABSOLUTE MAXIMUM RATINGS(T_a=25℃)

SYMBOL	PARAMETER		VALUE	UNIT
V_{CBO}	Collector-Base Voltage	BDX83	45	V
		BDX83A	60	
		BDX83B	80	
		BDX83C	100	
V_{CEO}	Collector-Emitter Voltage	BDX83	45	V
		BDX83A	60	
		BDX83B	80	
		BDX83C	100	
V_{EBO}	Emitter-Base Voltage		5	V
I_C	Collector Current-Continuous		10	A
I_{CM}	Collector Current-Peak		15	A
I_B	Base Current		250	mA
P_C	Collector Power Dissipation @ T_C=25℃		125	W
T_J	Junction Temperature		200	℃
T_{stg}	Storage Temperature Range		-65~200	℃



DIM	mm MIN	MAX
A	39.00	
B	25.30	26.67
C	7.80	8.30
D	0.90	1.10
E	1.40	1.60
G	10.92	
H	5.46	
K	11.40	13.50
L	16.75	17.05
N	19.40	19.62
Q	4.00	4.20
U	30.00	30.20
V	4.30	4.50

THERMAL CHARACTERISTICS

SYMBOL	PARAMETER	MAX	UNIT
$R_{th\ j\text{-}c}$	Thermal Resistance,Junction to Case	1.4	℃/W

ELECTRICAL CHARACTERISTICS

T_C=25℃ unless otherwise specified

SYMBOL	PARAMETER		CONDITIONS	MIN	TYP.	MAX	UNIT
$V_{CEO(SUS)}$	Collector-Emitter Sustaining Voltage	BDX83	I_C= 100mA; I_B= 0	45			V
		BDX83A		60			
		BDX83B		80			
		BDX83C		100			
$V_{CE(sat)}$	Collector-Emitter Saturation Voltage		I_C= 5A; I_B= 10mA			2.0	V
$V_{BE(on)-1}$	Base-Emitter On Voltage		I_C= 5A; V_{CE}= 3V			2.8	V
$V_{BE(on)-2}$	Base-Emitter On Voltage		I_C= 10A; V_{CE}= 3V			4.5	V
I_{CEV}	Collector Cutoff Current	BDX83	V_{CE}= 45V; V_{BE}= -1.5V V_{CE}= 45V; V_{BE}= -1.5V; T_C= 150℃			0.5 3.0	mA
		BDX83A	V_{CE}= 60V; V_{BE}= -1.5V V_{CE}= 60V; V_{BE}= -1.5V; T_C= 150℃			0.5 3.0	
		BDX83B	V_{CE}= 80V; V_{BE}= -1.5V V_{CE}= 80V; V_{BE}= -1.5V; T_C= 150℃			0.5 3.0	
		BDX83C	V_{CE}= 100V; V_{BE}= -1.5V V_{CE}= 100V; V_{BE}= -1.5V; T_C= 150℃			0.5 3.0	
I_{CEO}	Collector Cutoff Current	BDX83	V_{CE}= 20V; I_B=0			1.0	mA
		BDX83A	V_{CE}= 30V; I_B=0				
		BDX83B	V_{CE}= 40V; I_B=0				
		BDX83C	V_{CE}= 50V; I_B=0				
I_{EBO}	Emitter Cutoff Current		V_{EB}= 5V; I_C=0			5.0	mA
h_{FE-1}	DC Current Gain		I_C= 1A; V_{CE}= 3V	750			
h_{FE-2}	DC Current Gain		I_C= 5A; V_{CE}= 3V	1000			
h_{FE-3}	DC Current Gain		I_C= 10A; V_{CE}= 3V	250			