MOSPEC

DARLINGTON COPLEMENTARY SILICON POWER TRANSISTORS

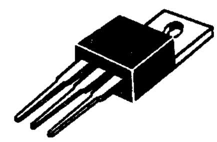
..designed for general-purpose amplifier and low speed switching applications

FEATURES:

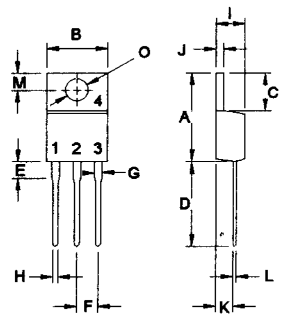
* Collector-Emitter Sustaining Voltage-
  $V_{CEO(SUS)}$ = 45 V (Min) - BDX33,BDX34
  = 60 V (Min) - BDX33A,BDX34A
  = 80 V (Min) - BDX33B,BDX34B
  = 100 V(Min) - BDX33C,BDX34C
* Monolithic Construction with Built-in Base-Emitter Shunt Resistor

NPN	PNP
BDX33	BDX34
BDX33A	BDX34A
BDX33B	BDX34B
BDX33C	BDX34C

10 AMPERE
DARLINGTON
COMPLEMENTARY SILICON
POWER TRANSISTORS
45-100 VOLTS
70 WATTS



TO-220



PIN 1.BASE
2.COLLECTOR
3.EMITTER
4.COLLECTOR(CASE)

DIM	MILLIMETERS	
	MIN	MAX
A	14.68	15.31
B	9.78	10.42
C	5.01	6.52
D	13.06	14.62
E	3.57	4.07
F	2.42	3.66
G	1.12	1.36
H	0.72	0.96
I	4.22	4.98
J	1.14	1.38
K	2.20	2.97
L	0.33	0.55
M	2.48	2.98
O	3.70	3.90

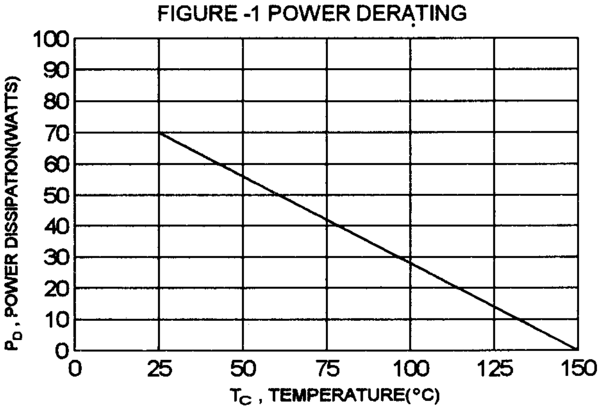
MAXIMUM RATINGS

Characteristic	Symbol	BDX33 BDX34	BDX33A BDX34A	BDX33B BDX34B	BDX33C BDX34C	Unit
Collector-Emitter Voltage	V_{CEO}	45	60	80	100	V
Collector-Base Voltage	V_{CBO}	45	60	80	100	V
Emitter-Base Voltage	V_{EBO}	5.0				V
Collector Current - Continuous Peak	I_C I_{CM}	10 15				A
Base Current	I_B	0.25				A
Total Power Dissipation @T_C = 25°C Derate above 25°C	P_D	70 0.56				W W/°C
Operating and Storage Junction Temperature Range	T_J ,T_{STG}	-65 to +150				°C

THERMAL CHARACTERISTICS

Characteristic	Symbol	Max	Unit
Thermal Resistance Junction to Case	$R_{\theta jc}$	1.78	°C/W

FIGURE -1 POWER DERATING

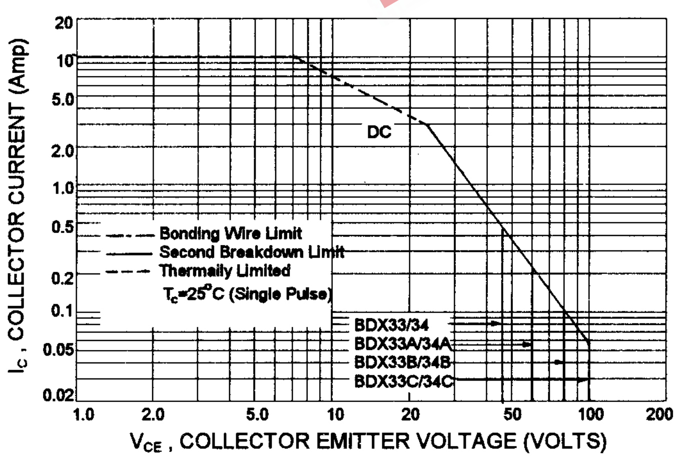


ELECTRICAL CHARACTERISTICS (T_C = 25°C unless otherwise noted)

Characteristic		Symbol	Min	Max	Unit
OFF CHARACTERISTICS					
Collector-Emitter Sustaining Voltage(1) (I_C= 100 mA, I_B= 0)	BDX33, BDX34 BDX33A, BDX34A BDX33B, BDX34B BDX33C, BDX34C	$V_{CEO(sus)}$	45 60 80 100		V
Collector Cutoff Current (V_{CE}= 22 V, I_B= 0) (V_{CE}= 30 V, I_B= 0) (V_{CE}= 40 V, I_B= 0) (V_{CE}= 50 V, I_B= 0)	BDX33, BDX34 BDX33A, BDX34A BDX33B, BDX34B BDX33C, BDX34C	I_{CEO}		0.5 0.5 0.5 0.5	mA
Collector-Base Cutoff Current (V_{CB}= Rated V_{CB}, I_E= 0)		I_{CBO}		200	uA
Emitter-Base Cutoff Current (V_{EB}= 5.0 V, I_C= 0)		I_{EBO}		10	mA
ON CHARACTERISTICS (1)					
DC Current Gain (I_C= 4.0 A, V_{CE}= 3.0 V) (I_C= 3.0 A, V_{CE}= 3.0 V)	BDX33/33A/34/34A BDX33B/33C/34B/34C	hFE	750 750		
Collector-Emitter Saturation Voltage (I_C =4.0 A, I_B = 8.0 mA) (I_C= 3.0 A, I_B = 6.0 mA)	BDX33/33A/34/34A BDX33B/33C/34B/34C	$V_{CE(sat)}$		2.5 2.5	V
Base-Emitter On Voltage (I_C= 4.0 A, V_{CE}= 3.0 V) (I_C= 3.0 A, V_{CE}= 3.0 V)	BDX33/33A/34/34A BDX33B/33C/34B/34C	$V_{BE(on)}$		2.5 2.5	V

(1) Pulse Test: Pulse Width =300 us,Duty Cycle ≦ 2.0%

FIG-2 SAFE OPERATING AREA



There are two limitation on the power handling ability of a transistor:average junction temperature and second breakdown safe operating area curves indicate I_C-V_{CE} limits of the transistor that must be observed for reliable operation i.e., the transistor must not be subjected to greater dissipation than curves indicate.

The data of FIG-2 is base on$T_{J(PK)}$=150 °C;T_C isvariable depending on conditions. second breakdown pulse limits are valid for duty cycles to 10% provided $T_{J(PK)}$<150°C ,At high case temperatures, thermal limitation will reduce the power that can be handled to values less than the limitations imposed by second breakdown.