

DARLINGTON COMPLEMENTARY SILICON POWER TRANSISTORS

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

FEATURES:

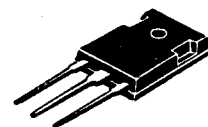
- * Collector-Emitter Sustaining Voltage-
 $V_{CE(SUS)} = 60 \text{ V (Min) - BDV66, BDV67}$
 $= 80 \text{ V (Min) - BDV66A, BDV67A}$
 $= 100 \text{ V (Min) - BDV66B, BDV67B}$
- * Collector-Emitter Saturation Voltage
 $V_{CE(sat)} = 2.0 \text{ V (Max.) @ } I_C = 10\text{A}$
- * Monolithic Construction with Built-in Base-Emitter Shunt Resistor

PNP	NPN
BDV66	BDV67
BDV66A	BDV67A
BDV66B	BDV67B

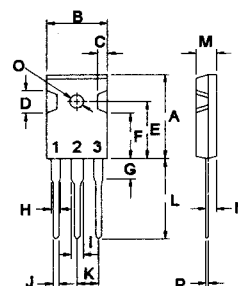
16 AMPERE
DARLINGTON
COMPLEMENTARY SILICON
POWER TRANSISTORS
60-100 VOLTS
125 WATTS

MAXIMUM RATINGS

Characteristic	Symbol	BDV66 BDV67	BDV66A BDV67A	BDV66B BDV67B	Unit
Collector-Emitter Voltage	V_{CEO}	60	80	100	V
Collector-Base Voltage	V_{CBO}	60	80	100	V
Emitter-Base Voltage	V_{EBO}	5.0			V
Collector Current-Continuous -Peak	I_C I_{CM}	16 20			A
Base Current	I_B	0.25			A
Total Power Dissipation @ $T_C = 25^\circ\text{C}$ Derate above 25°C	P_D	125 1.0			W W/ $^\circ\text{C}$
Operating and Storage Junction Temperature Range	T_J, T_{STG}	- 65 to +150			$^\circ\text{C}$



TO-247(3P)

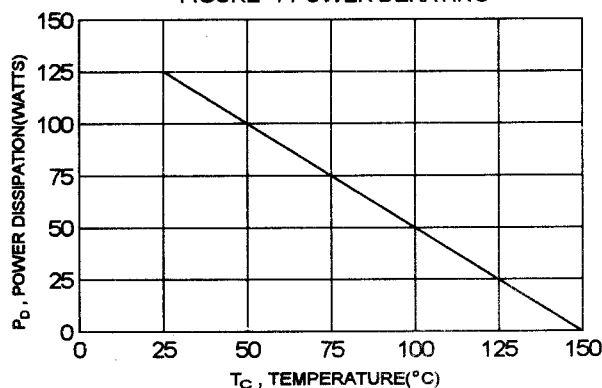


PIN 1.BASE
2.COLLECTOR
3.EMITTER

THERMAL CHARACTERISTICS

Characteristic	Symbol	Max	Unit
Thermal Resistance Junction to Case	$R_{\theta jc}$	1.0	$^\circ\text{C/W}$

FIGURE -1 POWER DERATING



DIM	MILLIMETERS	
	MIN	MAX
A	20.63	22.38
B	15.38	16.20
C	1.90	2.70
D	5.10	6.10
E	14.81	15.22
F	11.72	12.84
G	4.20	4.50
H	1.82	2.46
I	2.92	3.23
J	0.89	1.53
K	5.26	5.66
L	18.50	21.50
M	4.68	5.36
N	2.40	2.80
O	3.25	3.65
P	0.55	0.70

ELECTRICAL CHARACTERISTICS ($T_c = 25^\circ\text{C}$ unless otherwise noted)

Characteristic	Symbol	Min	Max	Unit
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OFF CHARACTERISTICS

Collector - Emitter Sustaining Voltage (1) ($I_c = 0.1\text{ A}$, $L=25\text{ mH}$)	BDV66,BDV67 BDV66A,BDV67A BDV66B,BDV67B	$V_{CE(sus)}$	60 80 100	V
Collector Cutoff Current ($V_{CE} = 30\text{ V}$, $I_E = 0$) ($V_{CE} = 40\text{ V}$, $I_E = 0$) ($V_{CE} = 50\text{ V}$, $I_E = 0$)	BDV66,BDV67 BDV66A,BDV67A BDV66B,BDV67B	I_{CEO}	3.0 3.0 3.0	mA
Collector Cutoff Current ($V_{CB} = 60\text{ V}$, $I_E = 0$) ($V_{CB} = 80\text{ V}$, $I_E = 0$) ($V_{CB} = 100\text{ V}$, $I_E = 0$)	BDV66,BDV67 BDV66A,BDV67A BDV66B,BDV67B	I_{CBO}	0.4 0.4 0.4	mA
Emitter Cutoff Current ($V_{EB} = 5.0\text{ V}$, $I_C = 0$)		I_{EBO}	5.0	mA

ON CHARACTERISTICS (1)

Collector-Emitter Saturation Voltage ($I_C = 10\text{ A}$, $I_E = 40\text{ mA}$)	$V_{CE(sat)}$		2.0	V
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DYNAMIC CHARACTERISTICS

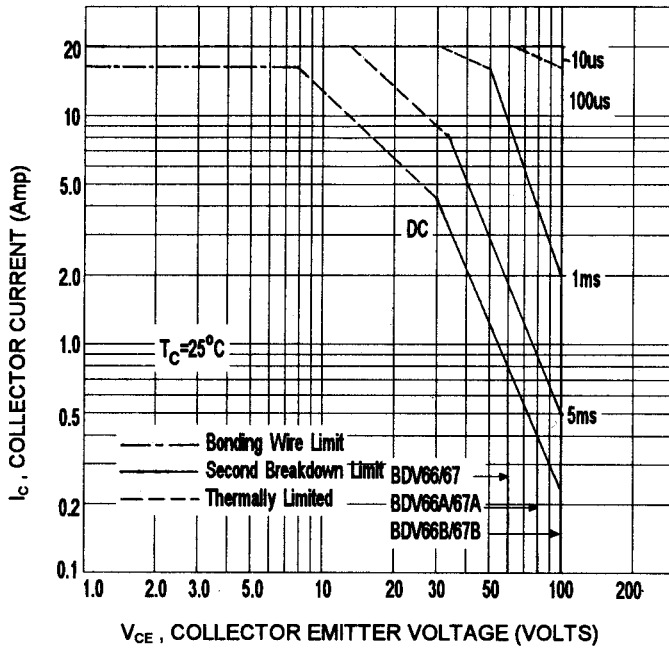
Small-Signal Current Gain (2) ($I_C = 5.0\text{ A}$, $V_{CE} = 3.0\text{ V}$, $f = 1.0\text{ KHz}$)	f_T	6.0		MHz
Output Capacitance ($V_{CB} = 10\text{ V}$, $I_E = 0$, $f = 1.0\text{ MHz}$)	C_{ob}		450	pF

SWITCHING CHARACTERISTICS

Turn On Time	$I_C = 5.0\text{ A}$, $V_{CC} = 12\text{ V}$	t_{on}	1.0(typ)		us
Off Time	$I_{B1} = -I_{B2} = 40\text{ mA}$	t_{off}	3.5(typ)		us

(1) Pulse Test: Pulse width = 300 us , Duty Cycle $\leq 2.0\%$ (2) $f_T = \left| h_{fe} \right| \cdot f_{test}$

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