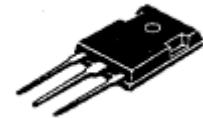
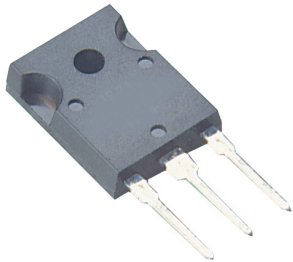


# Darlington Transistor



TO-247(3P)

## Features:

- Collector-Emitter sustaining voltage -  
 $V_{CE(sus)} = 80V$  (Min.) - BDV66A, BDV67A  
 $= 100V$  (Min.) - BDV66B, BDV67B
- Collector-Emitter saturation voltage  
 $V_{CE(sat)} = 2V$  (Max.) at  $I_c = 10A$
- Monolithic construction with Built-in Base-Emitter Shunt Resistor

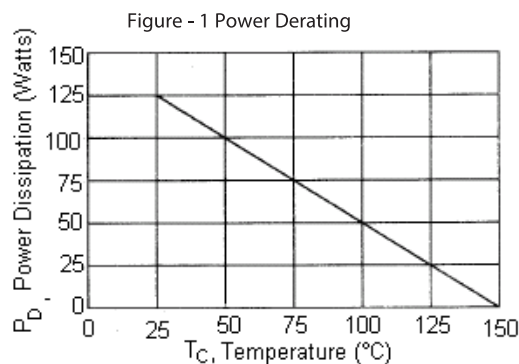
PNP	NPN
BDV66A	BDV67A
BDV66B	BDV67B
16 Ampere Darlington Complementary Silicon Power Transistors 60 - 100 Volts 125 Watts	

## Maximum Ratings

Characteristic	Symbol	BDV66A BDV67A	BDV66B BDV67B	Unit
Collector-Emitter Voltage	$V_{CEO}$	80	100	V
Collector-Base Voltage	$V_{CBO}$			
Emitter-Base Voltage	$V_{EBO}$			
Collector Current - Continuous - Peak	$I_c$ $I_{CM}$	16 20		A
Base Current	$I_B$	0.25		
Total Power Dissipation at $T_c = 25^\circ C$ Derate above $25^\circ C$	$P_D$	125 1		W W/ $^\circ C$
Operation and Storage Junction Temperature Range	$T_J, T_{STG}$	-65 to +150		$^\circ C$

## Thermal Characteristics

Characteristic	Symbol	Max.	Unit
Thermal Resistance Junction to Case	$R_{\theta jc}$	1	$^\circ C/W$



## Electrical Characteristics (T<sub>c</sub> = 25°C unless otherwise noted)

Characteristic	Symbol	Min.	Max.	Unit
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### OFF Characteristics

Collector-Emitter Sustaining Voltage (1) (I <sub>c</sub> = 0.1A, L = 25mH) BDV66A, BDV67A BDV66B, BDV67B	V <sub>CEO(sus)</sub>	80 100	-	V
Collector Cut off Current (V <sub>CE</sub> = 40V, I <sub>B</sub> = 0) (V <sub>CE</sub> = 50V, I <sub>B</sub> = 0) BDV66A, BDV67A BDV66B, BDV67B	I <sub>CEO</sub>	-	3	mA
Collector Cut off Current (V <sub>CB</sub> = 80V, I <sub>E</sub> = 0) (V <sub>CB</sub> = 100V, I <sub>E</sub> = 0) BDV66A, BDV67A BDV66B, BDV67B	I <sub>CBO</sub>	-	0.4	
Emitter Cut off Current (V <sub>EB</sub> = 5V, I <sub>c</sub> = 0)	I <sub>EBO</sub>	-	5	

### ON Characteristics (1)

Collector-Emitter Saturation Voltage (I <sub>c</sub> = 10A, I <sub>B</sub> = 40mA)	V <sub>CE(sat)</sub>	-	2	V
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### Dynamic Characteristics

Small-Signal Current Gain (2) (I <sub>c</sub> = 5A, V <sub>CE</sub> = 3V, f = 1KHz)	f <sub>T</sub>	6	-	MHz
Output Capacitance (V <sub>CB</sub> = 10V, I <sub>E</sub> = 0, f = 1MHz)	C <sub>ob</sub>	-	450	pF

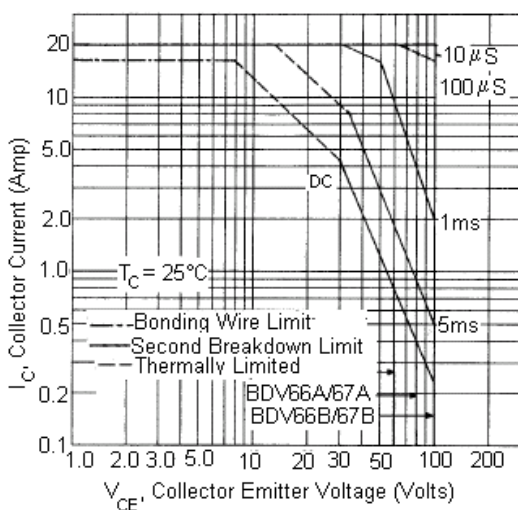
### Switching Characteristics

Turn On Time	I <sub>c</sub> = 5A, V <sub>cc</sub> = 12V	t <sub>on</sub>	1 (typical)	-	μs
Off Time	I <sub>B1</sub> = -I <sub>B2</sub> = 40mA	t <sub>off</sub>	3.5 (typical)	-	

(1) Pulse Test: Pulse Width = 300μs, Duty Cycle ≤2%

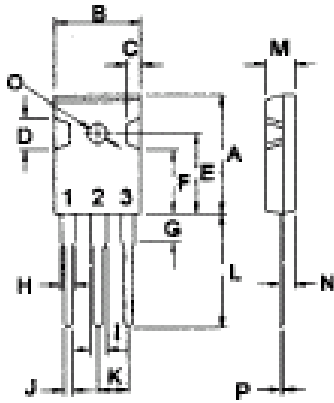
(2) f<sub>T</sub> = |h<sub>FE</sub>| • f<sub>test</sub>

**Figure - 2 Active-Region Safe Operating Area**



There are two limitations on the power handling ability of a transistor: average junction temperature and second breakdown safe operating area curves indicate I<sub>c</sub>-V<sub>CE</sub> limits of the transistor that must be observed for reliable operation i.e., the transistor must not be subjected to greater dissipation than the curves indicate. The data of Figure-2 is based on T<sub>J(pk)</sub> = 150°C; T<sub>c</sub> is variable depending on conditions. Second breakdown pulse limits are valid for duty cycles to 10% provided T<sub>J(pk)</sub> < 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.

# Darlington Transistor



Dimensions	Minimum	Maximum
A	20.63	22.38
B	15.38	16.2
C	1.9	2.7
D	5.1	6.1
E	14.81	15.22
F	11.72	12.84
G	4.2	4.5
H	1.82	2.46
I	2.92	3.23
J	0.89	1.53
K	5.26	5.66
L	18.5	21.5
M	4.68	5.36
N	2.4	2.8
O	3.25	3.65
P	0.55	0.7

Dimensions : Millimetres

## Part Number Table

Description	Type	Part Number
Darlington Transistor	NPN	BDV67A
		BDV67B
	PNP	BDV66A
		BDV66B

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