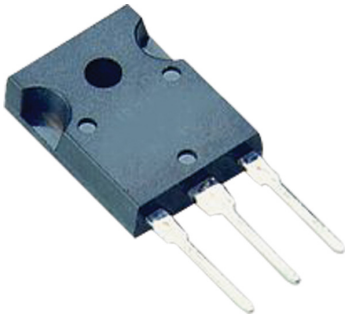
Power Transistor



Description:

BU426A type is a fast switching high voltage transistor, more specially intended for operating in colour TV supply systems.

Features:

- Collector-Emitter Sustaining Voltage
  $V_{CEO(sus)}$ = 400V (Min.) - BU426A
- Low Collector-Emitter saturation voltage
  $V_{CE(sat)}$ = 1.5V (Max.) at I_C = 2.5A, IB = 0.5A
- High Voltage Power Transistor

Maximum Ratings

Characteristic	Symbol	Rating	Unit
Collector-Emitter Voltage	V_{CEO}	400	V
Collector-Base Voltage	V_{CBO}	900	
Emitter-Base Voltage	V_{EBO}	10	
Collector Current-Continuous -Peak	I_C	6 8	A
Base Current-Continuous	I_B	3	
Total Power Dissipation at T_C = 25°C Derate above 25°C	P_D	113 0.904	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	Rθjc	1.106	°C/W

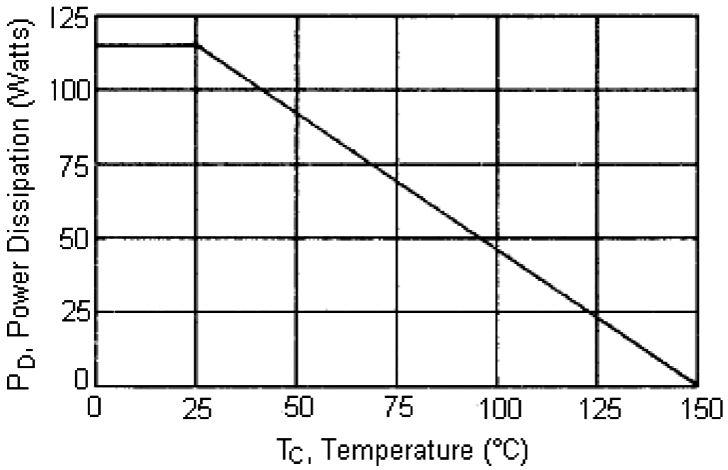
Electrical Characteristics (T_C = 25°C unless otherwise noted)

Characteristic	Symbol	Min.	Max.	Unit
OFF Characteristics				
Collector-Emitter Sustaining Voltage (1) I_C = 100mA, I_B = 0	$V_{CEO(SUS)}$	400	-	V
Collector Cut off Current V_{CE} = 900V, V_{BE} = 0	I_{CES}	-	1	mA
Emitter Cut off Current V_{EB} = 10V, I_C = 0	I_{EBO}	-	10	
ON Characteristics (1)				
DC Current Gain I_C = 0.6A, V_{CE} = 5V	h_{FE}	8	-	-
Collector-Emitter Saturation Voltage I_C = 2.5A, I_B = 0.5A I_C = 4A, I_B = 1.25A	$V_{CE(sat)}$	-	1.5 3	V
Base-Emitter On Voltage I_C = 2.5A, I_B = 0.5A I_C = 4A, I_B = 1.25A	$V_{BE(sat)}$	-	1.4 1.6	
Dynamic Characteristics				
Current Gain Bandwidth Product I_C = 0.2A, V_{CE} = 10V, f = 1MHz	f_T	4	-	MHz
Switching Characteristics				
Turn On Time	t_{on}	-	0.5	µs
Storage Time	t_s	-	3.5	
Fall Time	t_f	-	0.75	

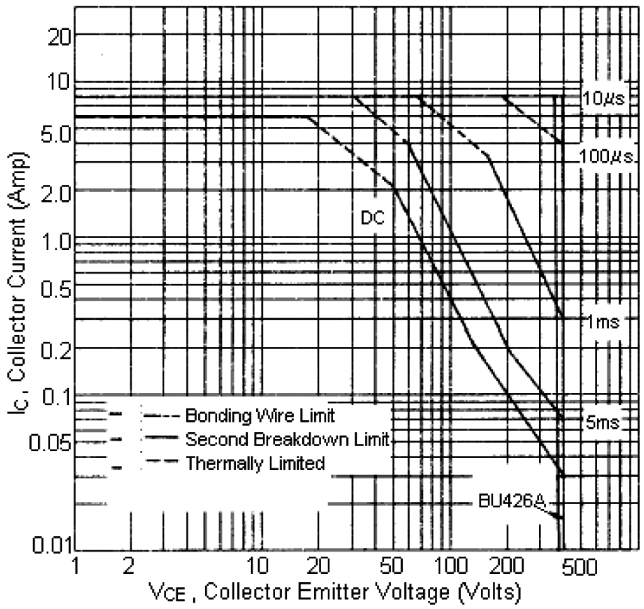
V_{CC} = 250V, I_C = 2.5A
I_{B1} = 0.5A, I_{B2} = -1A

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

Figure 1 - Power Derating



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_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 the curves indicate.

The data of SOA curve is based on $T_{J(PK)}$ = 150°C; T_C is variable 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.

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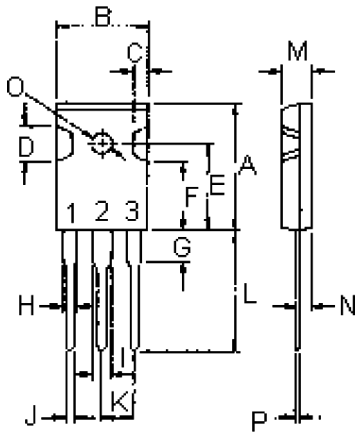

Pin Configuration:
1. Base
2. Collector
3. Emitter

Dimensions	Min.	Max.
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	Part Number
Transistor, NPN, TO-247	BU426A