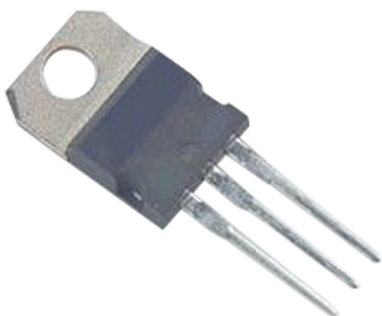


High Power Bipolar Transistor



Description:

Designed for various specific and general purpose application such as; output and driver stages of amplifiers operating at frequencies from DC to greater than 1MHz; series, shunt and switching regulators; low and high frequency inverters/converters and many others.

Features:

- Very low collector saturation voltage
- Excellent linearity
- Fast switching
- PNP values are negative, observe proper polarity

Maximum Ratings

Characteristic	Symbol	BU406	Unit
Collector-Emitter Voltage	V_{CEO}	80	V
Collector-Emitter Voltage	V_{CES}		
Emitter-Base Voltage	V_{EBO}	5	
Collector Current-Continuous -Peak	I_C I_{CM}	10 20	A
Base Current	I_B	2	
Total Power Dissipation at $T_C = 25^\circ\text{C}$ Derate above 25°C	P_D	50 0.4	W W/ $^\circ\text{C}$
Operating and Storage Junction Temperature Range	T_J, T_{STG}	-55 to +150	$^\circ\text{C}$

Thermal Characteristics

Characteristic	Symbol	Max.	Unit
Thermal Resistance Junction to Case	$R_{\theta jc}$	2.5	$^\circ\text{C}/\text{W}$

High Power Bipolar Transistor

Electrical Characteristics ($T_C = 25^\circ\text{C}$ unless otherwise noted)

Characteristic	Symbol	Min.	Max.	Unit
----------------	--------	------	------	------

Off Characteristics

Collector-Emitter Sustaining Voltage $I_C = 30\text{mA}, I_B = 0$	$V_{CEO(sus)}$	80	-	V
Collector-Emitter Cut off Current $V_{CE} = 80\text{V}, V_{BE} = 0$	I_{CES}	-	10	μA
Emitter-Base Cut off Current $V_{EB} = 50\text{V}, I_C = 0$	I_{EBO}	-	100	

On Characteristics (1)

DC Current Gain $I_C = 2\text{A}, V_{CE} = 1\text{V}$ $I_C = 4\text{A}, V_{CE} = 1\text{V}$	hFE	60 40	-	-
Collector-Emitter Saturation Voltage $I_C = 8\text{A}, I_B = 400\text{mA}$	$V_{CE(sat)}$	-	1	V
Base-Emitter Saturation Voltage $I_C = 8\text{A}, I_B = 800\text{mA}$	$V_{BE(sat)}$	-	1.5	

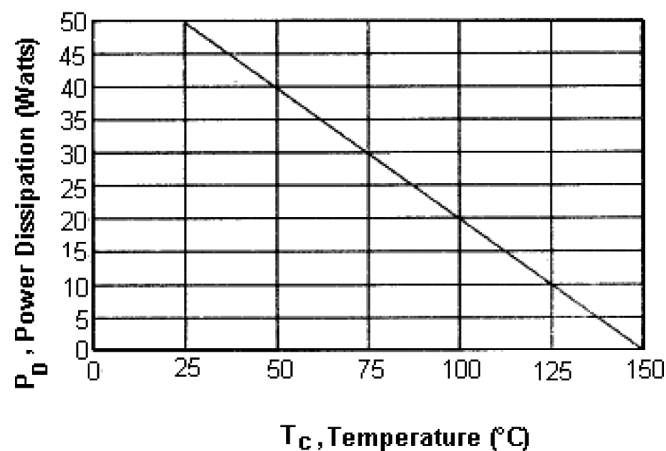
Dynamic Characteristics

Current Gain-Bandwidth Product (2) $I_C = 500\text{mA}, V_{CE} = 10\text{V}, f = 0.5\text{MHz}$	D44H11 D45H11	f_T	15 12	-	MHz
Output Capacitance $V_{CB} = 10\text{V}, I_E = 0, f = 1\text{MHz}$	D44H11 D45H11	C_{ob}	220 400	-	PF

Switching Characteristics

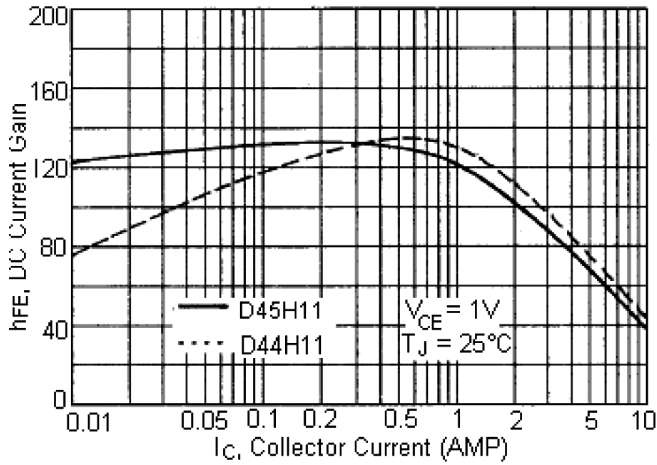
Rise Time	$I_{B1} = I_C = 5\text{A},$ $-I_{B2} = 500\text{mA}$	D44H11 D45H11	t_r	-	0.5 0.6	μs
Storage Time		D44H11 D45H11	t_s	-	1 1.2	
Fall Time		D44H11 D45H11	t_f	-	0.4 0.5	

Figure - 1 Power Derating

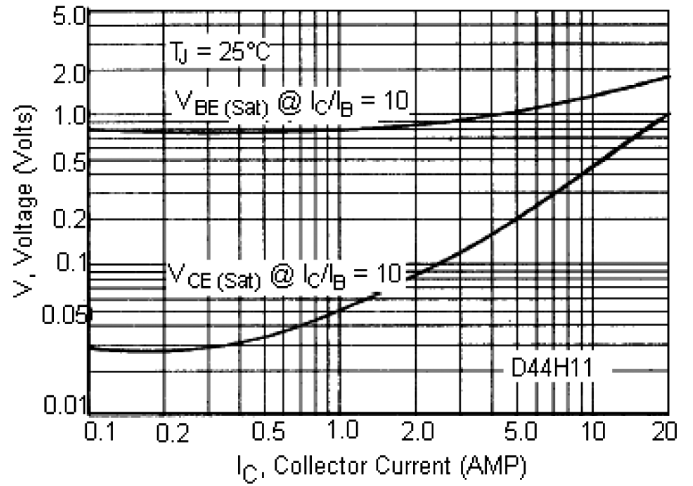


High Power Bipolar Transistor

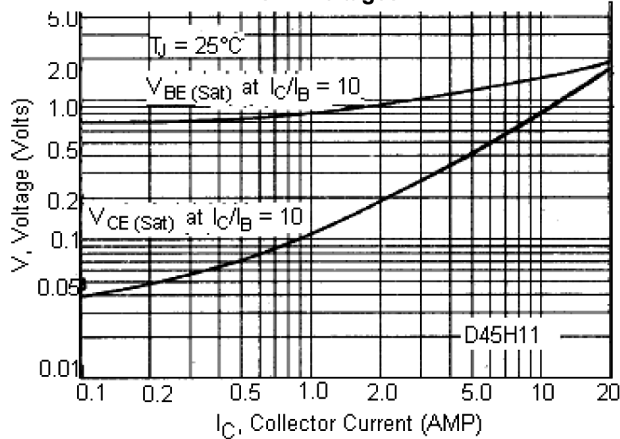
DC Current Gain



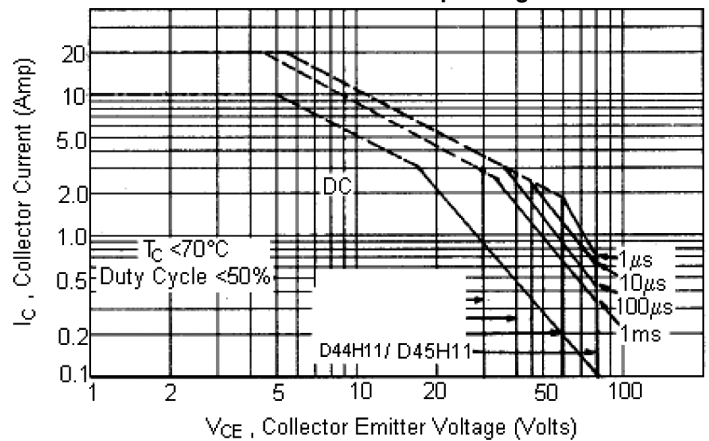
"ON" Voltages



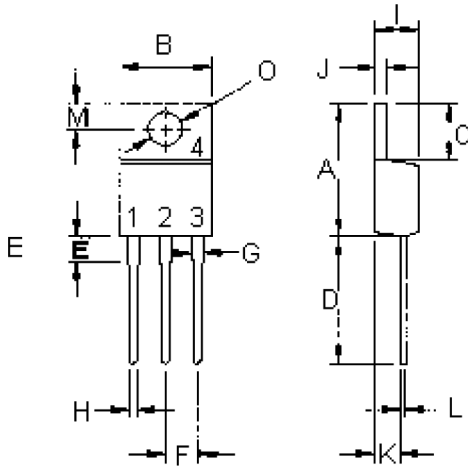
"ON" Voltages



Forward Bias Safe Operating Area



High Power Bipolar Transistor



Pin Configuration:

1. Base
2. Collector
3. Emitter
4. Collector(Case)

Dimensions	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	2.2	2.97
L	0.33	0.55
M	2.48	2.98
O	3.7	3.9

Dimensions : Millimetres

Part Number Table

Description	Part Number
Transistor, NPN, TO-220	D44H11
Transistor, PNP, TO-220	D45H11

Important Notice : This data sheet and its contents (the "Information") belong to the members of the Premier Farnell group of companies (the "Group") or are licensed to it. No licence is granted for the use of it other than for information purposes in connection with the products to which it relates. No licence of any intellectual property rights is granted. The Information is subject to change without notice and replaces all data sheets previously supplied. The Information supplied is believed to be accurate but the Group assumes no responsibility for its accuracy or completeness, any error in or omission from it or for any use made of it. Users of this data sheet should check for themselves the Information and the suitability of the products for their purpose and not make any assumptions based on information included or omitted. Liability for loss or damage resulting from any reliance on the Information or use of it (including liability resulting from negligence or where the Group was aware of the possibility of such loss or damage arising) is excluded. This will not operate to limit or restrict the Group's liability for death or personal injury resulting from its negligence. Multicomp is the registered trademark of the Group. © Premier Farnell plc 2012.