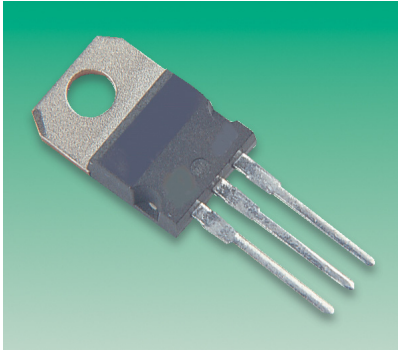


D44H11, 45H11

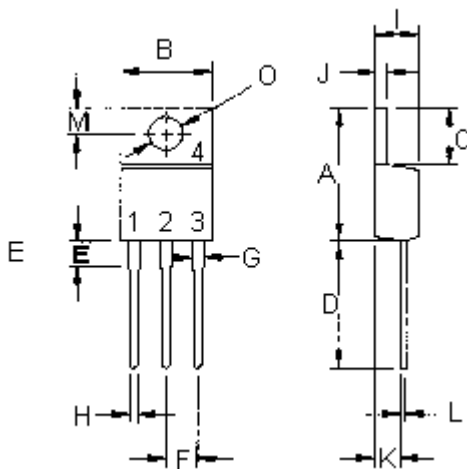
Complementary Power Transistors



Complementary Silicon Power Transistors are designed for various specific and general purpose application such as; output and driver stages of amplifiers operating at frequencies from DC to greater than 1.0MHz; series, shunt and switching regulators; low and high frequency inverters/converters and many others.

Features:

- NPN, PNP compliment to D44H NPN, D45H PNP.
- Very low collector saturation voltage.
- Excellent linearity.
- Fast switching.



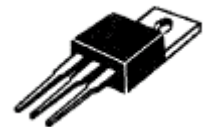
- Pin 1. Base
2. Collector
3. Emitter
4. Collector (Case).

Dimensions	Minimum	Maximum
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

Dimensions : Millimetres

PNP D45H11	NPN D44H11
---------------	---------------

10 Ampere
Complementary Silicon
Power Transistors
80 Volts
50 Watts



TO-220

D44H11, 45H11

Complementary Power Transistors



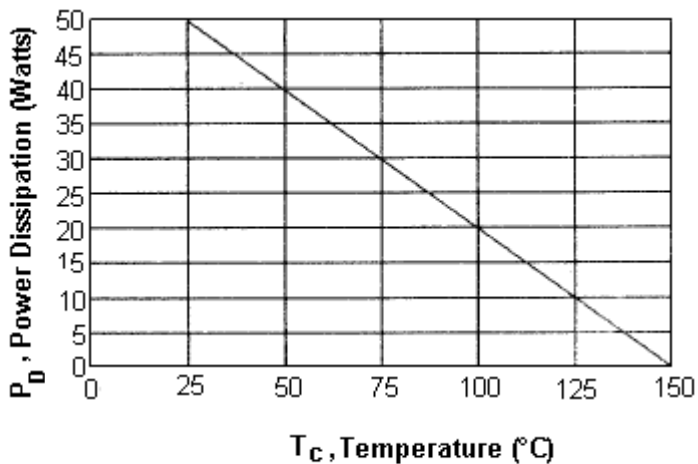
Maximum Ratings

Parameter	Symbol	Rating	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 Characteristic

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

Figure - 1 Power Derating



D44H11, 45H11

Complementary Power Transistors



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

Parameter	Symbol	Minimum	Maximum	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 ($V_{EB} = 5.0\text{V}$, $I_C = 0$)	I_{EBO}	-	100	

On Characteristics (1)

DC Current Gain ($I_C = 2.0\text{A}$, $V_{CE} = 1.0\text{V}$) ($I_C = 4.0\text{A}$, $V_{CE} = 1.0\text{V}$)	h_{FE}	60 40	-	-
Collector-Emitter Saturation Voltage ($I_C = 8.0\text{A}$, $I_B = 400\text{mA}$)	$V_{CE(sat)}$	-	1.0	V
Base-Emitter Saturation Voltage ($I_C = 8.0\text{A}$, $I_B = 800\text{mA}$)	$V_{BE(sat)}$	-	1.5	

Dynamic Characteristics

Current Gain-Bandwidth Product (2) ($I_C = 500\text{mA}$, $V_{CE} = 10\text{V}$, $f = 0.5\text{MHz}$)	D44H Series D45H Series	f_T	15 12	-	MHz
Output Capacitance ($V_{CB} = 10\text{V}$, $I_E = 0$, $f = 1.0\text{MHz}$)	D44H Series D45H Series	C_{ob}	220 400	-	pF

Switching Characteristics

Rise Time	$I_C = 5\text{A}$, $I_{B1} = -I_{B2} = 500\text{mA}$	D44H Series D45H Series	t_r	-	0.5 0.6	μs
Storage Time		D44H Series D45H Series	t_s	-	1.0 1.2	
Fall Time		D44H Series D45H Series	t_f	-	0.4 0.5	

(1) Pulse Test: Pulse Width = $300\mu\text{s}$, Duty Cycle $\leq 2.0\%$.

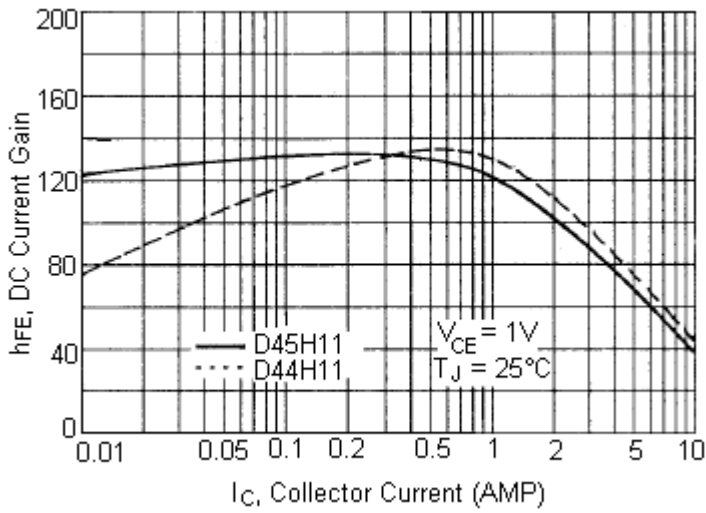
(2) $f_T = |h_{fe}| \cdot f_{test}$.

D44H11, 45H11

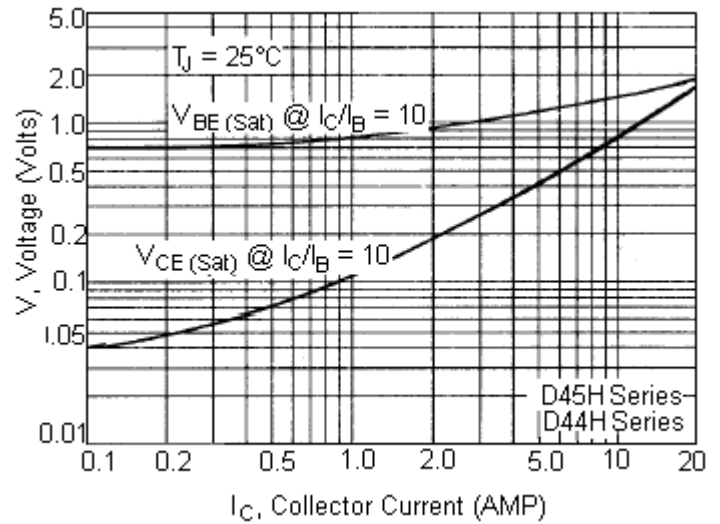
Complementary Power Transistors



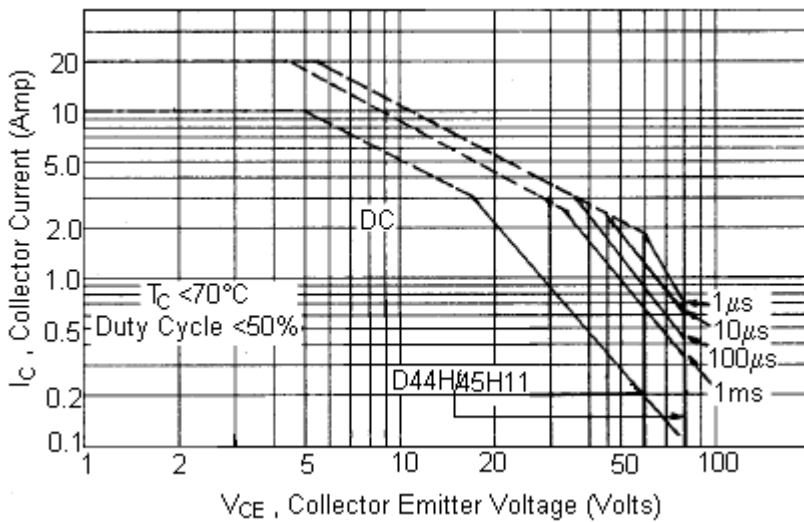
DC Current Gain



“ON” Voltages



Forward Bias Safe Operating Area



Specifications

$I_{C(av)}$ maximum (A)	V_{CE0} maximum (V)	h_{FE} minimum at $I_C = 2A$	P_{tot} at $25^\circ C$ (W)	Type	Part Number
10	80	60	50	NPN	D44H11
				PNP	D45H11



D44H11, 45H11

Complementary Power Transistors



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