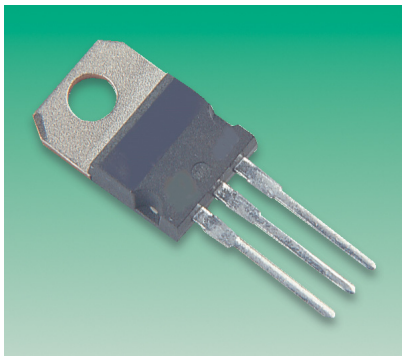
D44H11, 45H11

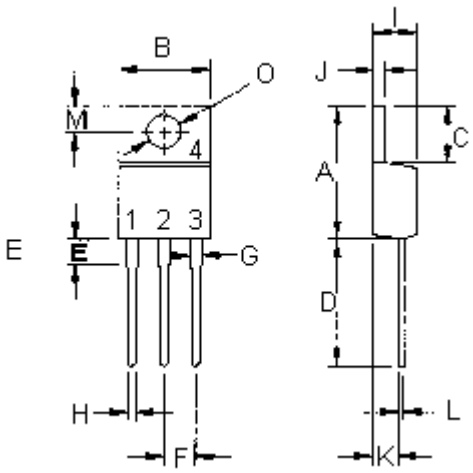
Complementary Power Transistors



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.



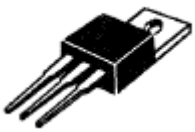
Pin 1. Base
2. Collector
3. Emitter
4. Collector (Case).

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

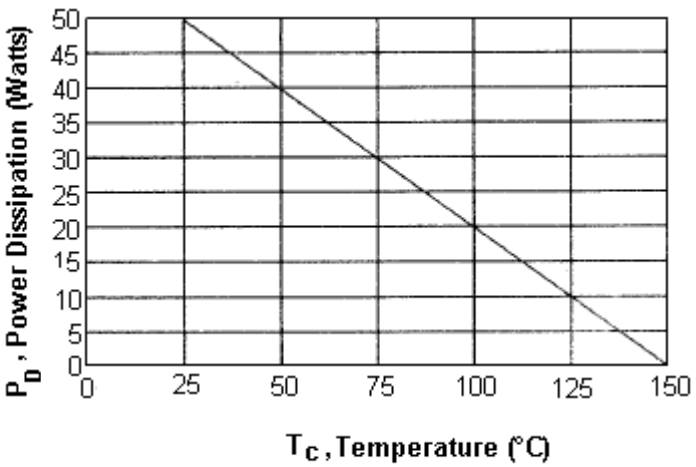
Maximum Ratings

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°C Derate above 25°C	P_D	50 0.4	W W/°C
Operating and Storage Junction Temperature Range	T_J, T_{STG}	-55 to +150	°C

Thermal Characteristic

Parameter	Symbol	Maximum	Unit
Thermal Resistance Junction to Case	Rθjc	2.5	°C/W

Figure - 1 Power Derating



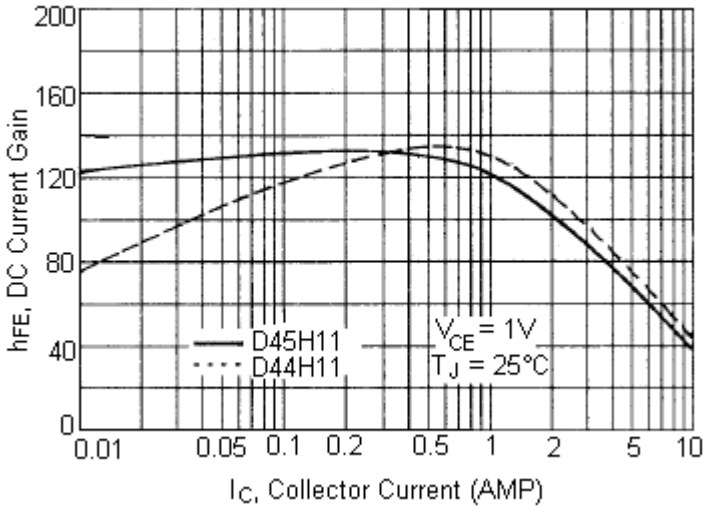
Electrical Characteristic (T_C = 25°C unless otherwise noted)

Parameter			Symbol	Minimum	Maximum	Unit
Off Characteristics						
Collector-Emitter Sustaining Voltage (I_C = 30mA, I_B = 0)			$V_{CEO(sus)}$	80	-	V
Collector-Emitter Cut off Current (V_{CE} = 80V, V_{BE} = 0)			I_{CES}	-	10	µA
Emitter-Base Cut off Current (V_{EB} = 5.0V, I_C = 0)			I_{EBO}	-	100	
On Characteristics (1)						
DC Current Gain (I_C = 2.0A, V_{CE} = 1.0V) (I_C = 4.0A, V_{CE} = 1.0V)			h_{FE}	60 40	-	-
Collector-Emitter Saturation Voltage (I_C = 8.0A, I_B = 400mA)			$V_{CE(sat)}$	-	1.0	V
Base-Emitter Saturation Voltage (I_C = 8.0A, I_B = 800mA)			$V_{BE(sat)}$	-	1.5	
Dynamic Characteristics						
Current Gain-Bandwidth Product (2) (I_C = 500mA, V_{CE} = 10V, f = 0.5MHz)		D44H Series D45H Series	f_T	15 12	-	MHz
Output Capacitance (V_{CB} = 10V, I_E = 0, f = 1.0MHz)		D44H Series D45H Series	C_{ob}	220 400	-	pF
Switching Characteristics						
Rise Time	I_C = 5A, I_{B1} = -I_{B2} = 500mA	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	

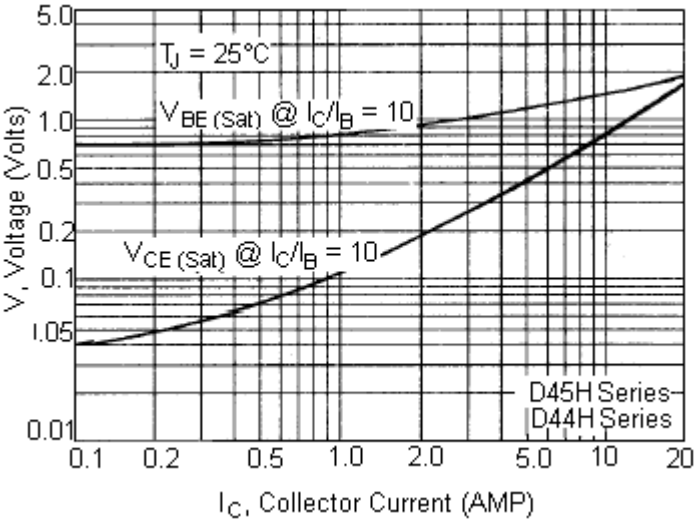
(1) Pulse Test: Pulse Width = 300µs, Duty Cycle ≤2.0%.

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

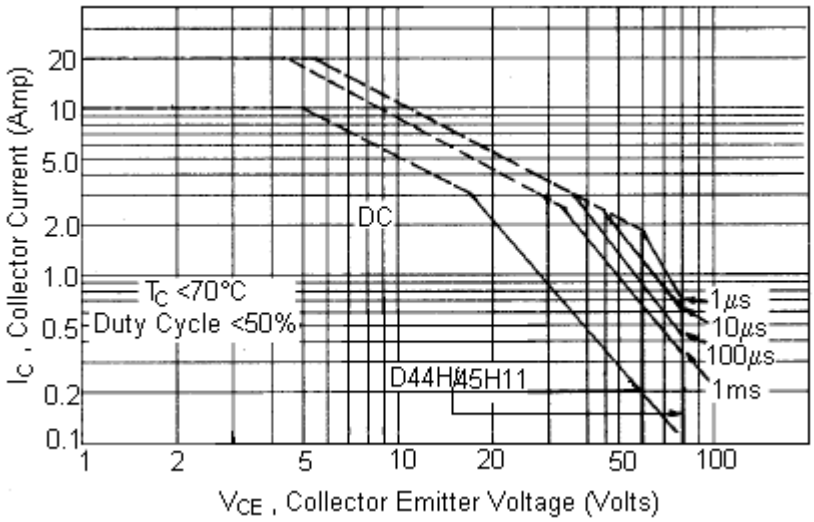
DC Current Gain



"ON" Voltages



Forward Bias Safe Operating Area



Specifications

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

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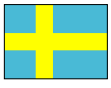

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