COMPLEMENTARY SILICON POWER TRANSISTORS

...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.

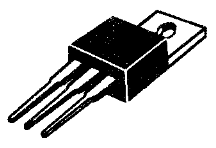
NPN	PNP
D44H Series	D45H Series

Boca Semiconductor Corp.
http://www.bocasemi.com

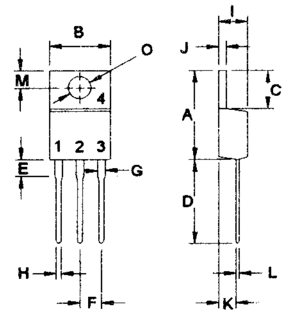
FEATURES:

* NPN Complement to D45H PNP
* Very Low Collector Saturation Voltage
* Excellent Linearity
* Fast Switching
* PNP Values are Negative,Observe Proper Polarity.

10 AMPERE
COMPLEMENTARY SILICON
POWER TRANSISTORS
30-80 VOLTS
50 WATTS



TO-220



PIN 1.BASE
2.COLLECTOR
3.EMITTER
4.COLLECTOR(CASE)

DIM	MILLIMETERS MIN	MILLIMETERS 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	2.20	2.97
L	0.33	0.55
M	2.48	2.98
O	3.70	3.90

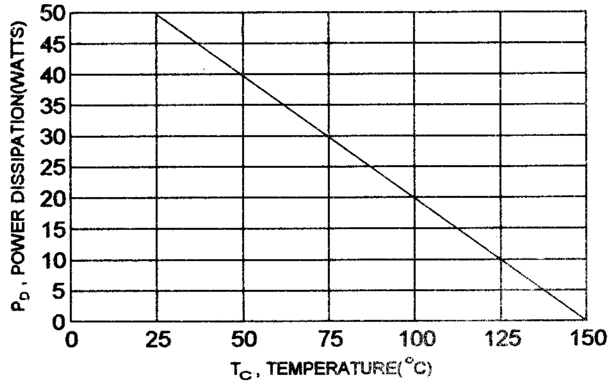
MAXIMUM RATINGS

Characteristic	Symbol	D44H1,2 D45H1,2	D44H4,5 D45H4,5	D44H7,8 D45H7,8	D44H10,11 D45H10,11	Unit
Collector-Emitter Voltage	V_{CEO}	30	45	60	80	V
Collector-Emitter Voltage	V_{CES}	30	45	60	80	V
Emitter-Base Voltage	V_{EBO}	5				V
Collector Current - Continuous Peak	I_C I_{CM}	10 20				A
Base Current	I_B	2				A
Total Power Dissipation @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 CHARACTERISTICS

Characteristic	Symbol	Max	Unit
Thermal Resistance Junction to Case	Rθjc	2.5	°C/W

FIGURE -1 POWER DERATING



ELECTRICAL CHARACTERISTICS (T_C = 25°C unless otherwise noted)

Characteristic		Symbol	Min	Max	Unit
OFF CHARACTERISTICS					
Collector-Emitter Sustaining Voltage (I_C= 30mA, I_B= 0)	D44H1,2 D45H1,2 D44H4,5 D45H4,5 D44H7,8 D45H7,8 D44H10,11 D45H10,11	$V_{CEO(sus)}$	30 45 60 80		V
Collector-Emitter Cutoff Current (V_{CE}= 30V, V_{BE}= 0) (V_{CE}= 45V, V_{BE}= 0) (V_{CE}= 60V, V_{BE}= 0) (V_{CE}= 80V, V_{BE}= 0)	D44H1,2 D45H1,2 D44H4,5 D45H4,5 D44H7,8 D45H7,8 D44H10,11 D45H10,11	I_{CES}		10 10 10 10	uA
Emitter-Base Cutoff Current (V_{BE}= 5V, I_C= 0)		I_{EBO}		100	uA
ON CHARACTERISTICS(1)					
DC Current Gain (I_C= 2.0 A, V_{CE}= 1.0 V) (I_C= 4.0 A, V_{CE}= 1.0 V)	D44H1,4,7,10 /D45H1,4,7,10 D44H2,5,8,11 /D45H2,5,8,11 D44H1,4,7,10 /D45H1,4,7,10 D44H2,5,8,11 /D45H2,5,8,11	hFE	35 60 20 40		
Collector-Emitter Saturation Voltage (I_C= 8.0 A, I_B= 800 mA) (I_C= 8.0 A, I_B= 400 mA)	D44H1,4,7,10 /D45H1,4,7,10 D44H2,5,8,11 /D45H2,5,8,11	$V_{CE(sat)}$		1.0 1.0	V
Base-Emitter Saturation Voltage (I_C= 8.0 A, I_B= 800mA)	ALL Devices	$V_{BE(sat)}$		1.5	V
DYAMIC CHARATERISTICS					
Current-Gain Bandwidth Product (2) (I_C= 500 mA, V_{CE}= 10 V, f= 0.5 MHz)	D44H Series D45H Series	f_T	15 12		MHz
Output Capacitance (V_{CB}= 10 V, I_E= 0, f = 1.0MHz)	D44H Series D45H Series	C_{ob}	220 400		PF

SWITCHING CHARATERISTICS

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

(1) Pulse Test: Pulse width = 300 us , Duty Cycle ≤ 2.0%

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

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