

HIGH VOLTAGE SILICON POWER TRANSISTORS

The D44T series are high voltage power transistor designed for general purpose amplifier and switching applications.

FEATURES:

- * Very Low Leakage Current
- * Very Low Collector Saturation Voltage
- * Excellent Linearity
- * Fast Switching

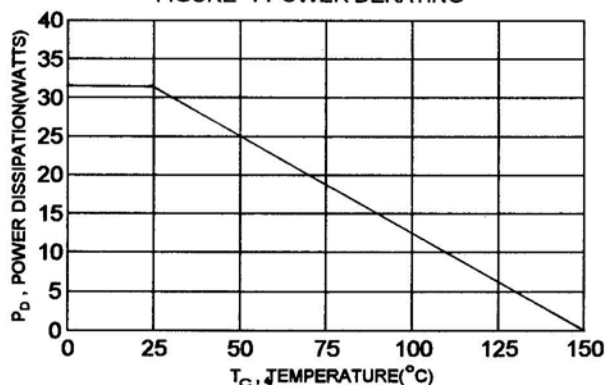
MAXIMUM RATINGS

Characteristic	Symbol	D44T1,2,5,7	D44T3,4,6,8	Unit
Collector-Emitter Voltage	V_{CEO}	250	300	V
Collector-Emitter Voltage($V_{BE} = 0$ V)	V_{CES}	300	400	V
Emitter-Base Voltage	V_{EBO}	5.0		V
Collector Current - Continuous - Peak	I_C I_{CM}	2.0 4.0		A
Base Current	I_B	0.5		A
Total Power Dissipation @ $T_C = 25^\circ\text{C}$ Derate above 25°C	P_D	31.2 0.25		W W/ $^\circ\text{C}$
Operating and Storage Junction Temperature Range	T_J, T_{STG}	-55 to +150		$^\circ\text{C}$

THERMAL CHARACTERISTICS

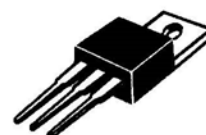
Characteristic	Symbol	Max	Unit
Thermal Resistance Junction to Case	$R_{\theta JC}$	4.0	$^\circ\text{C/W}$

FIGURE -1 POWER DERATING

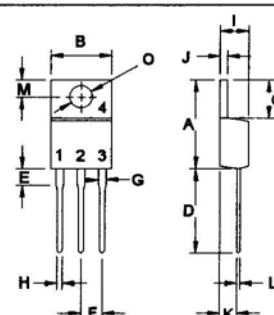


NPN D44T Series

2.0 AMPERE
SILICON POWER
TRANSISTORS
250-300 VOLTS
31 WATTS



TO-220



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

DIM	MILLIMETERS	
	MIN	MAX
A	14.68	16.00
B	9.78	10.42
C	5.02	6.60
D	13.00	14.62
E	3.10	4.19
F	2.41	2.67
G	1.10	1.67
H	0.69	1.01
I	3.21	4.98
J	1.14	1.40
K	2.20	3.30
L	0.28	0.61
M	2.48	3.00
O	3.50	4.00

ELECTRICAL CHARACTERISTICS ($T_c = 25^\circ\text{C}$ unless otherwise noted)

Characteristic	Symbol	Min	Max	Unit
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OFF CHARACTERISTICS

Collector-Base Cutoff Current ($V_{CE} = \text{Rated } V_{CES}$)	I_{CES}		10	μA
Emitter-Base Cutoff Current ($V_{BE} = 5.0\text{ V}$, $I_C = 0$)	I_{EBO}		10	μA

ON CHARACTERISTICS(1)

DC Current Gain ($I_C = 500\text{ mA}$, $V_{CE} = 10\text{ V}$)	D44T1,3	h_{FE}	30	90	
	D44T2,4		75	175	
($I_C = 50\text{ mA}$, $V_{CE} = 10\text{ V}$)	D44T5,6		30	300	
	D44T7,8		150		
	D44T1,3		20		
	D44T2,4		40		
	D44T5,6		20		
	D44T7,8		60		
Collector-Emitter Saturation Voltage ($I_C = 500\text{ mA}$, $I_B = 50\text{ mA}$) ($I_C = 300\text{ mA}$, $I_B = 30\text{ mA}$)	D44T1,2,3,4,7,8 D44T5,6	$V_{CE(sat)}$		1.0 1.0	V
Base-Emitter Saturation Voltage ($I_C = 500\text{ mA}$, $I_B = 50\text{ mA}$)	ALL Devices	$V_{BE(sat)}$		1.2	V

DYNAMIC CHARACTERISTICS

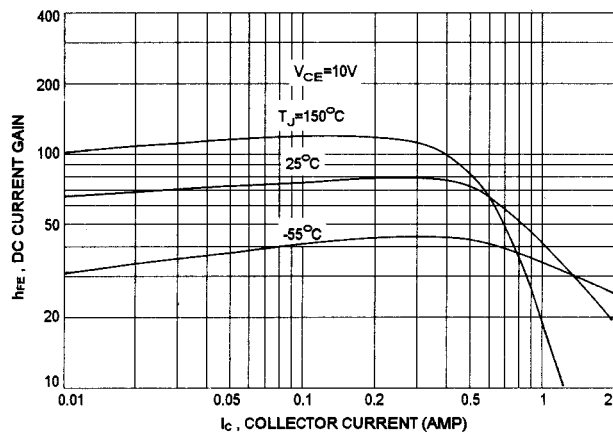
Current-Gain Bandwidth Product (2) ($I_C = 100\text{ mA}$, $V_{CE} = 10\text{ V}$, $f = 1.0\text{ MHz}$)	f_T	15(typ)		MHz
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SWITCHING CHARACTERISTICS

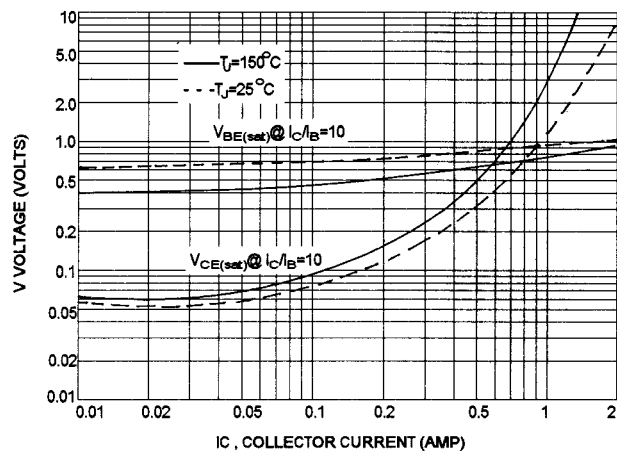
Rise Time	$I_C = 500\text{ mA}$ $I_{B1} = -I_{B2} = 50\text{ mA}$	t_r		0.3	μs
Storage Time		t_s		3.0	μs
Fall Time		t_f		0.7	μs

(1) Pulse Test: Pulse width $\approx 300\text{ }\mu\text{s}$, Duty Cycle $\leq 2.0\%$ (2) $f_T = |h_{fe}| \cdot f_{\text{test}}$

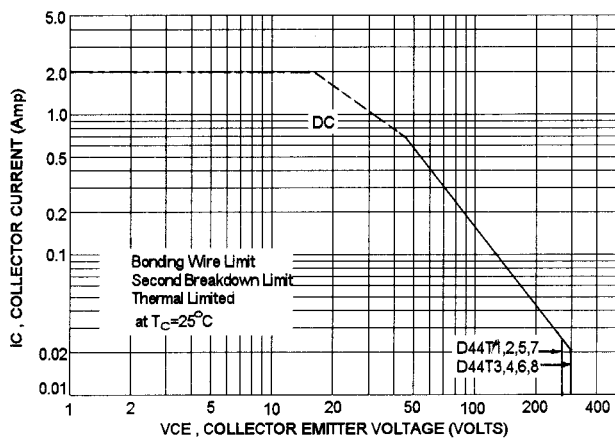
DC CURRENT GAIN



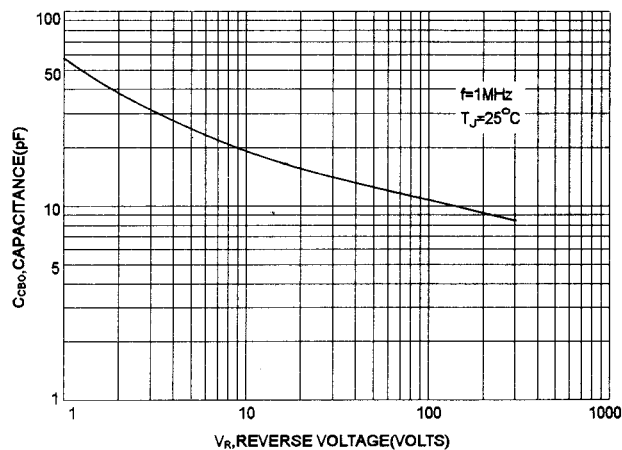
"ON" VOLTAGES



FORWARD-BIAS SAFE OPERATING AREA



CAPACITANCES



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