

**HIGH VOLTAGE SILICON POWER TRANSISTORS**

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

**FEATURES:**

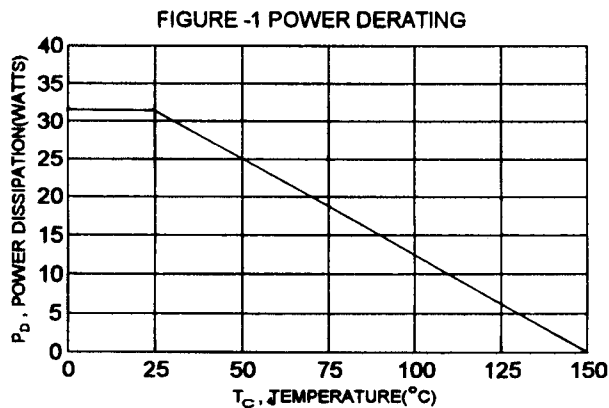
- \* Very Low Leakage Current
- \* Very Low Collector Saturation Voltage
- \* Excellent Linearity
- \* Fast Switching

**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 $25^\circ\text{C}$	$P_D$	31.2 0.25		W W/ $^\circ\text{C}$
Operating and Storage Junction Temperature Range	$T_J, T_{STG}$	-55 to +150		$^\circ\text{C}$

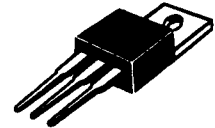
**THERMAL CHARACTERISTICS**

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

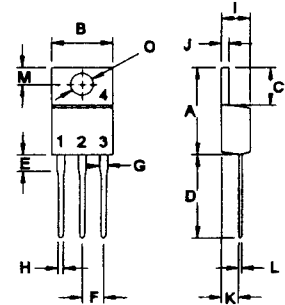


**NPN  
D44T  
Series**

**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	15.31
B	9.78	10.42
C	5.01	6.52
D	13.08	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

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	$\mu\text{A}$
Emitter-Base Cutoff Current ( $V_{BE} = 5.0\text{ V}, I_C = 0$ )	$I_{EBO}$		10	$\mu\text{A}$

## ON CHARACTERISTICS(1)

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

## DYNAMIC CHARACTERISTICS

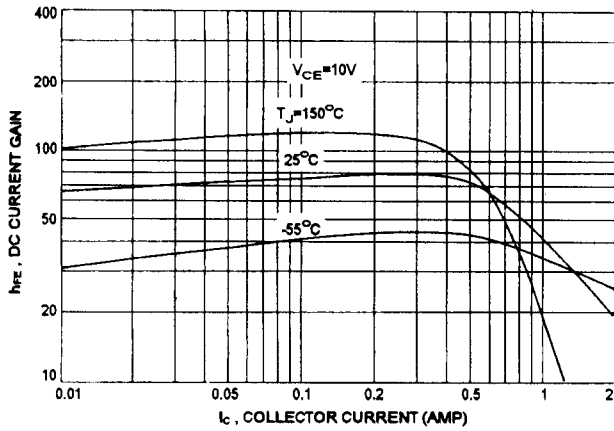
Current-Gain Bandwidth Product (2) ( $I_C = 100\text{ mA}, V_{CE} = 10\text{ V}, f = 1.0\text{ MHz}$ )	$f_T$	15(typ)		MHz
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## SWITCHING CHARACTERISTICS

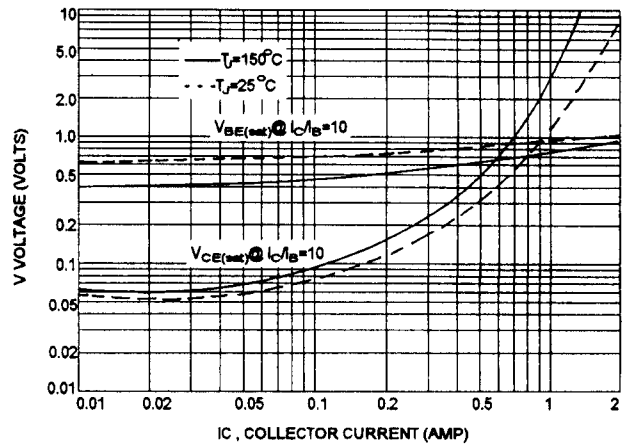
Rise Time	$I_C = 500\text{ mA}$ $I_{B1} = I_{B2} = 50\text{ mA}$	$t_r$		0.3	$\mu\text{s}$
Storage Time		$t_s$		3.0	$\mu\text{s}$
Fall Time		$t_f$		0.7	$\mu\text{s}$

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

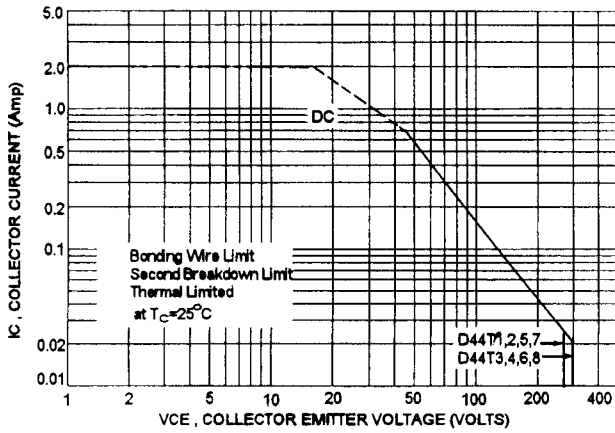
DC CURRENT GAIN



"ON" VOLTAGES



FORWARD-BIAS SAFE OPERATING AREA



CAPACITANCES

