

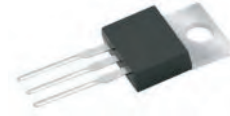
**10 AMPERES COMPLEMENTARY  
SILICON POWER TRANSISTORS 60,80 VOLTS**

**FEATURES**

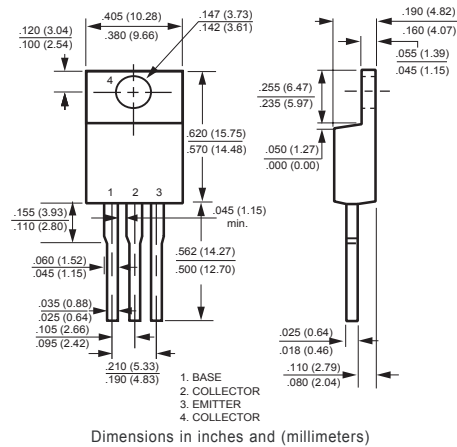
- \* ...for general purpose power amplification and switching such as output or driver stages in applications such as switching regulators, converter and power amplifiers.
- \* Low Collector-Emitter Saturation Voltage  
 $V_{CE(sat)} = 1.0 \text{ V (max.) @8.0A}$
- \* Fast Switching Speeds
- \* Complementary Pairs Simplifies Designs

**MAXIMUM RATINGS AND ELECTRICAL CHARACTERISTICS**

Ratings at 25°C ambient temperature unless otherwise specified.



**TO-220AB**



**MAXIMUM RATINGS** ( @  $T_A = 25^\circ\text{C}$  unless otherwise noted )

RATINGS	SYMBOL	D44H or D45H		UNITS
		8	10, 11	
Collector-Emitter voltage	$V_{CE0}$	60	80	V
Emitter-Base voltage	$V_{EB}$	5		V
Collector current-Continuous -Peak (Note 1)	$I_c$	10 20		A
Collector Power dissipation @ $T_C=25^\circ\text{C}$ @ $T_A=25^\circ\text{C}$	$P_d$	5.0 1.67		W
Thermal Resistance	$R_{\theta JA}$	75		$^\circ\text{C/W}$
	$R_{\theta JC}$	2.5		
Lead Temperature for Soldering Purposes: 1/8" from case for 5 sec.	$T_L$	260		$^\circ\text{C}$
Operating and Storage Junction Temperature Range	$T_J, T_{stg}$	-55 to +150		$^\circ\text{C}$

Notes: 1. Pulse Width  $\leq 6.0\text{mS}$ , Duty Cycle  $\leq 50\%$   
2. "Fully RoHS Compliant", "100% Sn Plating (Pb-free)".

**ELECTRICAL CHARACTERISTICS** ( @ TA = 25°C unless otherwise noted )

CHARACTERISTICS	SYMBOL	MIN	TYP	MAX	UNITS	
Collector cutoff current ( $V_{CE} = \text{Rated } V_{CE0}, V_{BE} = 0$ )	$I_{CES}$	-	-	10	$\mu\text{A}$	
Emitter cutoff current ( $V_{EB} = 5\text{Vdc}$ )	$I_{EBO}$	-	-	100	$\mu\text{A}$	
DC current gain ( $V_{CE} = 1.0\text{V}, I_C = 2.0\text{Adc}$ )	D44H10, D45H10	$h_{FE}$	35	-	-	-
	D44H8,11 D45H8,11		60	-	-	-
DC current gain ( $V_{CE} = 1.0\text{V}, I_C = 4.0\text{Adc}$ )	D44H10, D45H10	$h_{FE}$	20	-	-	-
	D44H8,11 D45H8,11		40	-	-	-
Collector-emitter saturation voltage ( $I_C = 8.0\text{Adc}, I_B = 0.4\text{Adc}$ ) ( $I_C = 8.0\text{Adc}, I_B = 0.8\text{Adc}$ )	D44H/D45H8,11	$V_{CE(sat)}$	-	-	1.0	V
	D44H/D45H10		-	-	1.0	V
Base-emitter saturation voltage ( $I_C = 8.0\text{Adc}, I_B = 0.8\text{Adc}$ )	$V_{BE(sat)}$	-	-	1.5	V	
Collector Capacitance ( $V_{CB} = 10\text{V}, f_{test} = 1.0\text{MHz}$ )	D44H Series	$C_{cb}$	-	130	-	pF
	D45H Series		-	230	-	pF
Gain Bandwidth Product ( $I_C = 0.5\text{Adc}, V_{CE} = 10\text{Vdc}, f = 20\text{MHz}$ )	D44H Series	$f_T$	-	50	-	MHz
	D45H Series		-	40	-	MHz
Delay and Rise Times ( $I_C = 5.0\text{Adc}, I_{B1} = 0.5\text{Adc}$ )	D44H Series	$t_d + t_r$	-	300	-	nS
	D45H Series		-	135	-	nS
Storage Time ( $I_C = 5.0\text{Adc}, I_{B1} = I_{B2} = 0.5\text{Adc}$ )	D44H Series	$t_s$	-	500	-	nS
	D45H Series		-	500	-	nS
Fall Time ( $I_C = 5.0\text{Adc}, I_{B1} = I_{B2} = 0.5\text{Adc}$ )	D44H Series	$t_f$	-	140	-	nS
	D45H Series		-	100	-	nS

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## RATING AND CHARACTERISTICS CURVES (D44H and D45H Series)

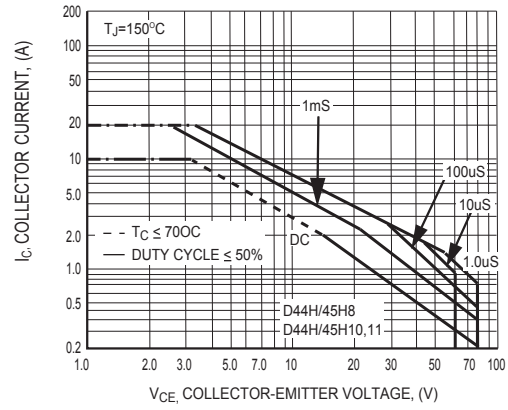


Figure Maximum Rated Forward Bias Safe Operating Area

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