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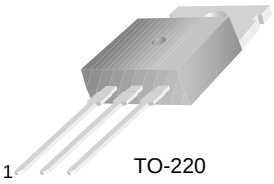
Please note: As part of the Fairchild Semiconductor integration, some of the Fairchild orderable part numbers will need to change in order to meet ON Semiconductor's system requirements. Since the ON Semiconductor product management systems do not have the ability to manage part nomenclature that utilizes an underscore (_), the underscore (_) in the Fairchild part numbers will be changed to a dash (-). This document may contain device numbers with an underscore (_). Please check the ON Semiconductor website to verify the updated device numbers. The most current and up-to-date ordering information can be found at www.onsemi.com. Please email any questions regarding the system integration to Fairchild_questions@onsemi.com.

FAIRCHILD SEMICONDUCTOR®

March 2009

D44H11TU
NPN Epitaxial Silicon Transistor

- Low Collector-Emitter Saturation Voltage : V_{CE}(sat) = 1V (Max.) @ 8A
- Fast Switching Speeds
- Complement to KSE45H



TO-220

1.Base 2.Collector 3.Emitter

Absolute Maximum Ratings T_C=25°C unless otherwise noted

Symbol	Parameter	Value	Units
V_{CEO}	Collector-Emitter Voltage	80	V
V_{EBO}	Emitter-Base Voltage	5	V
I_C	Collector Current (DC)	10	A
I_{CP}	Collector-Current (Pulse)	20	A
P_C	Collector Dissipation (T_C=25°C)	50	W
	Collector Dissipation (T_a=25°C)	1.67	W
T_J	Junction Temperature	150	°C
T_{STG}	Storage Temperature	- 55 ~ 150	°C

Electrical Characteristics T_C=25°C unless otherwise noted

Symbol	Parameter	Test Condition	Min.	Typ.	Max.	Units
BV_{CEO}	Collector-Emitter Breakdown Voltage	I_C = 10mA, I_B = 0	80			V
BV_{EBO}	Emitter-Base Breakdown Voltage	I_E = 500μA, I_C= 0	5			V
I_{CES}	Collector Cut-off Current	V_{CE} = Rated V_{CEO}, V_{EB} = 0			10	μA
I_{EBO}	Emitter Cut-off Current	V_{EB} = 5V, I_C = 0			100	μA
h_{FE}	DC Current Gain	V_{CE} = 1V, I_C = 2A	60			
$V_{CE(sat)}$	Collector-Emitter Saturation Voltage	I_C = 8A, I_B = 0.4A			1	V
$V_{BE(sat)}$	Base-Emitter Saturation Voltage	I_C = 8A, I_B = 0.8A			1.5	V
f_T	Current Gain Bandwidth Product	V_{CE} = 10V, I_C = 0.5A		50		MHz
C_{ob}	Output Capacitance	V_{CB} = 10V, f = 1MHz		130		pF
t_{ON}	Turn On Time	V_{CC} = 20V, I_C = 5A I_{B1} = - I_{B2} = 0.5A		300		ns
t_{STG}	Storage Time			500		ns
t_F	Fall Time			140		ns

NOTES:
1) These ratings are limiting values above which the serviceability of any semiconductor device may be impaired.
2) These are steady state limits. The factory should be consulted on applications involving pulsed or low duty cycle operations.
3) These ratings are based on a maximum junction temperature of 150degrees C.

Typical Performance Characteristics

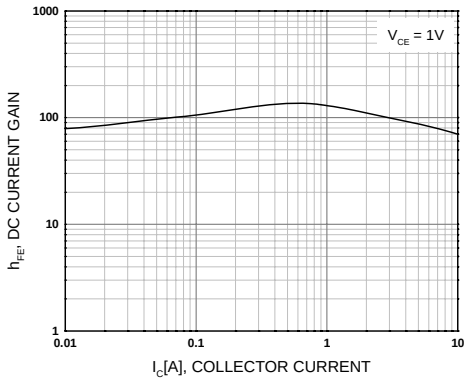


Figure 1. DC current Gain

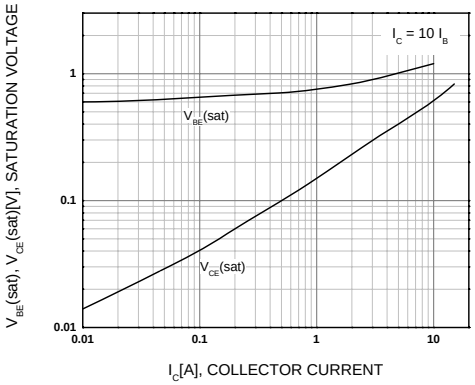


Figure 2. Base-Emitter Saturation Voltage Collector-Emitter Saturation Voltage

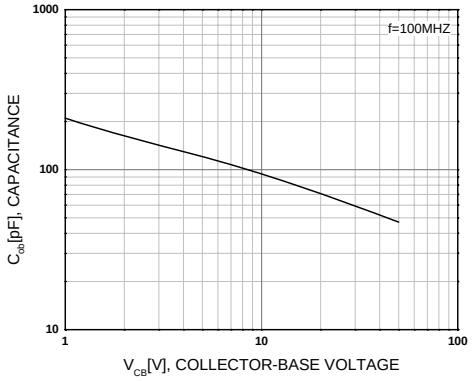


Figure 3. Collector Output Capacitance

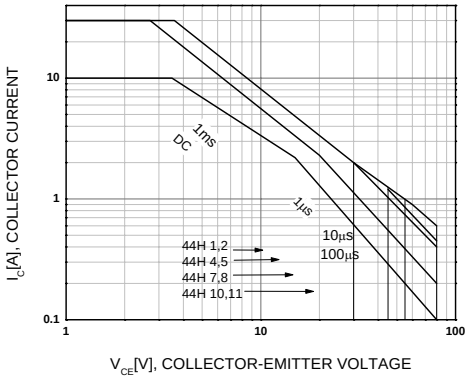


Figure 4. Safe Operating Area

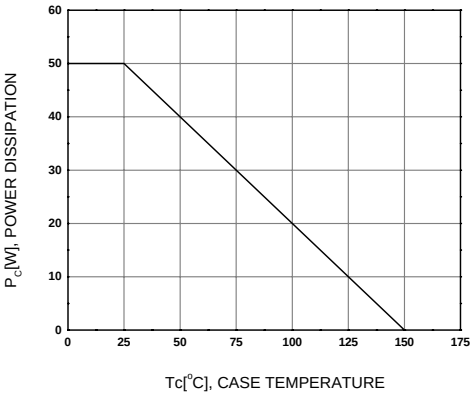
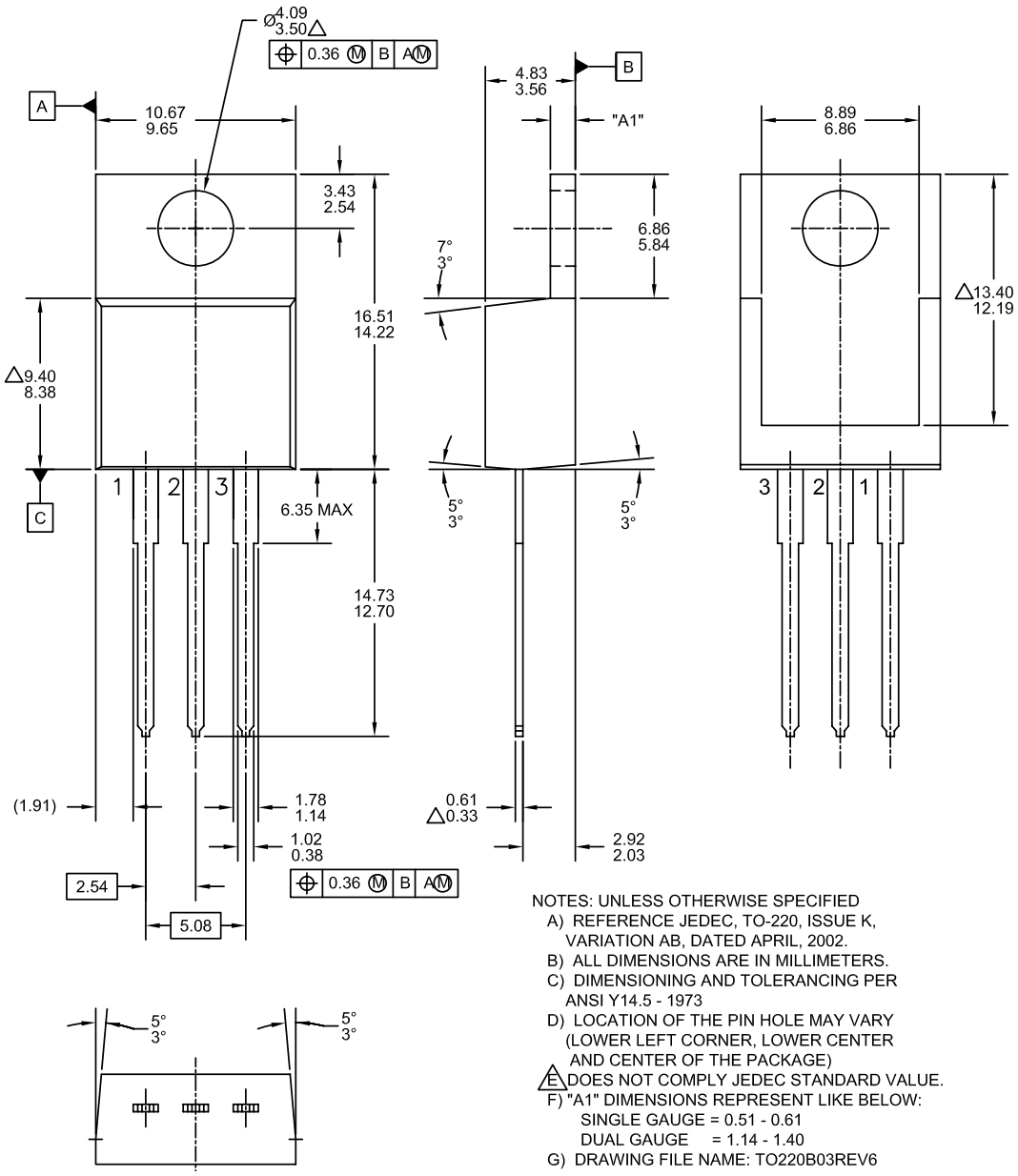


Figure 5. Power Derating

Mechanical Dimensions

TO-220



NOTES: UNLESS OTHERWISE SPECIFIED
A) REFERENCE JEDEC, TO-220, ISSUE K, VARIATION AB, DATED APRIL, 2002.
B) ALL DIMENSIONS ARE IN MILLIMETERS.
C) DIMENSIONING AND TOLERANCING PER ANSI Y14.5 - 1973
D) LOCATION OF THE PIN HOLE MAY VARY (LOWER LEFT CORNER, LOWER CENTER AND CENTER OF THE PACKAGE)
△E DOES NOT COMPLY JEDEC STANDARD VALUE.
F) "A1" DIMENSIONS REPRESENT LIKE BELOW:
SINGLE GAUGE = 0.51 - 0.61
DUAL GAUGE = 1.14 - 1.40
G) DRAWING FILE NAME: TO220B03REV6

Dimensions in Millimeters

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Preliminary	First Production	Datasheet contains preliminary data; supplementary data will be published at a later date. Fairchild Semiconductor reserves the right to make changes at any time without notice to improve design.
No Identification Needed	Full Production	Datasheet contains final specifications. Fairchild Semiconductor reserves the right to make changes at any time without notice to improve the design.
Obsolete	Not In Production	Datasheet contains specifications on a product that is discontinued by Fairchild Semiconductor. The datasheet is for reference information only.

Rev. I39

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