

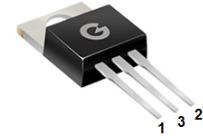
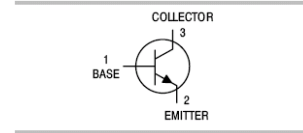
Features

- Low switch loss
- Low reverse leakage current
- Good high temperature characteristics

HF

Mechanical Data

- Case: TO-220AB
- Molding compound: UL flammability classification rating 94V-0
- Terminals: Tin-plated; solderability per MIL-STD-202, Method 208



TO-220AB

Ordering Information

Part Number	Package	Shipping Quantity	Marking Code
3DD13009	TO-220AB	50 pcs / Tube	3DD13009

Maximum Ratings (@ T_A = 25°C unless otherwise specified)

Parameter	Symbol	Value	Unit
Collector-Base Breakdown Voltage	V _{CBO}	700	V
Collector-Emitter Breakdown Voltage	V _{CEO}	400	V
Emitter-Base Breakdown Voltage	V _{EBO}	9	V
Collector Current (Continuous)	I _C	12	A
Collector Current (Pulse)	I _{CM}	24	A
Base Current (Continuous)	I _B	6	A
Base Current (Pulse)	I _{BM}	12	A

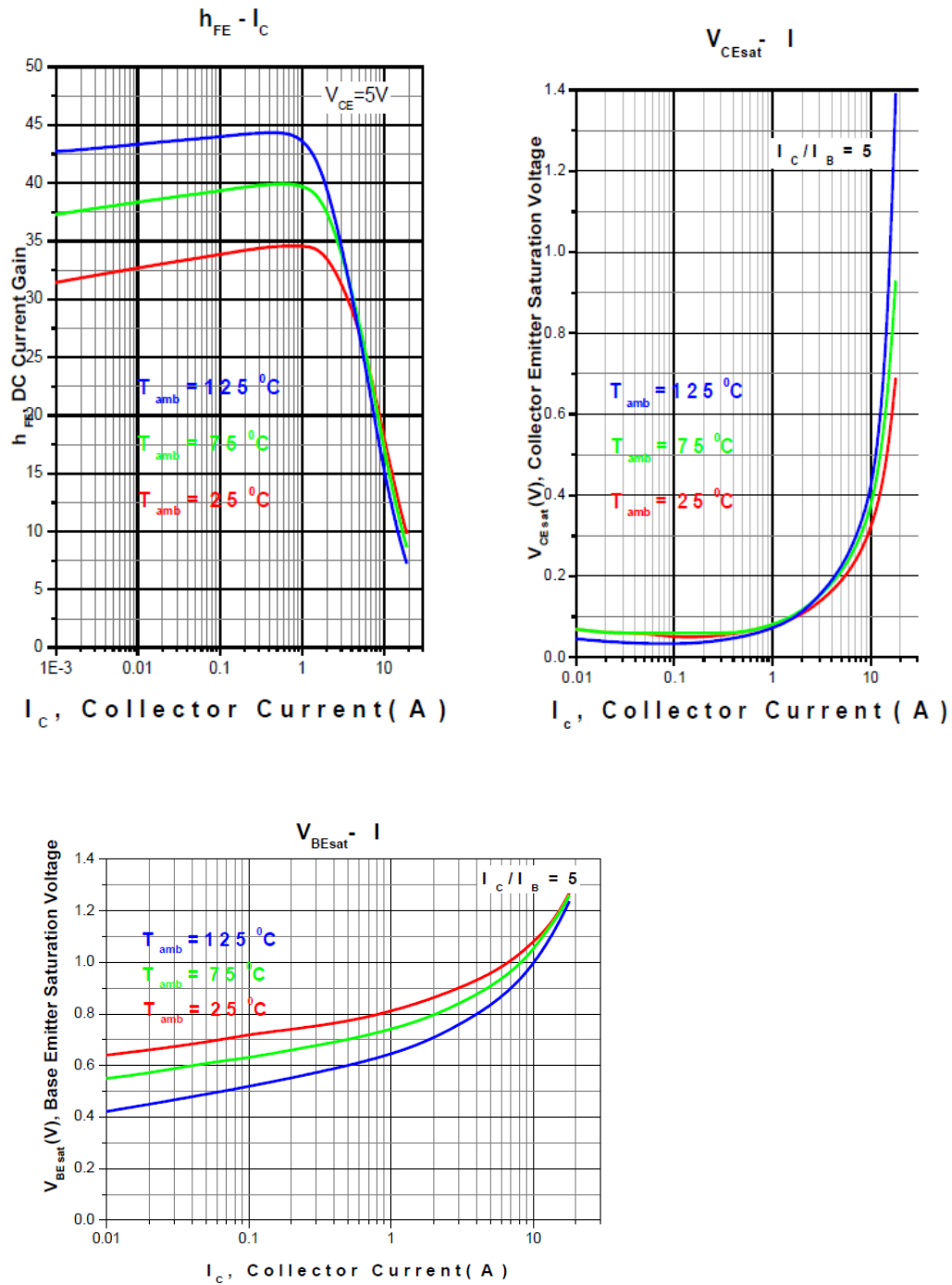
Thermal Characteristics

Parameter	Symbol	Value	Unit
Power Dissipation (T _A = 25°C)	P _D	2	W
Power Dissipation (T _C = 25°C)	P _D	100	W
Thermal Resistance (Junction-to-Air)	R _{θJA}	62.5	°C/W
Thermal Resistance (Junction-to-Case)	R _{θJC}	1.25	°C/W
Junction Temperature	T _J	150	°C
Storage Temperature Range	T _{STG}	-55 ~ +150	°C

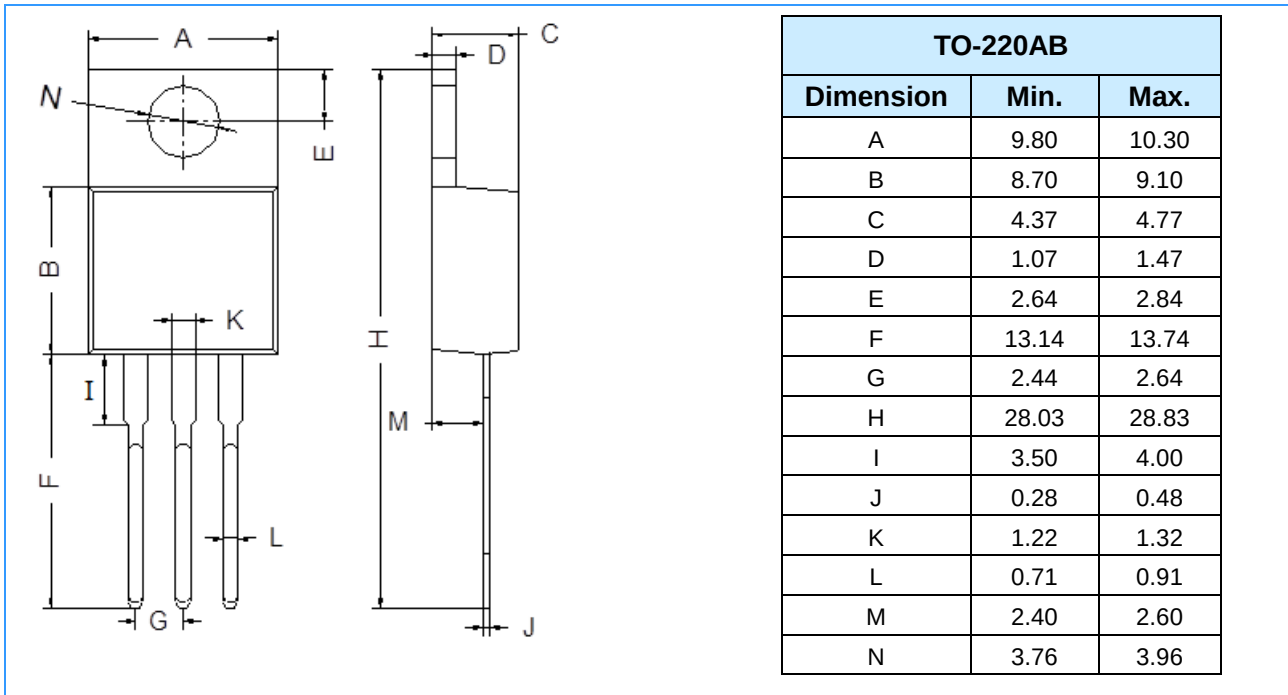
Electrical Characteristics (@ $T_A = 25^\circ\text{C}$ unless otherwise specified)

Parameter	Symbol	Test Condition	Min.	Typ.	Max.	Unit
Collector-Base Breakdown Voltage	$V_{(BR)CBO}$	$I_C = 100\mu\text{A}, I_E = 0$	700	-	-	V
Collector-Emitter Breakdown Voltage	$V_{(BR)CEO}$	$I_C = 1\text{mA}, I_B = 0$	400	-	-	V
Emitter-Base Breakdown Voltage	$V_{(BR)EBO}$	$I_E = 100\mu\text{A}, I_C = 0$	9	-	-	V
Collector Cut-off Current	I_{CBO}	$V_{CB} = 700\text{V}, I_E = 0$	-	-	0.1	mA
Collector Cut-off Current	I_{CEO}	$V_{CE} = 400\text{V}, I_B = 0$	-	-	0.1	mA
Emitter Cut-off Current	I_{EBO}	$V_{EB} = 9\text{V}, I_C = 0$	-	-	0.1	mA
DC Current Gain	h_{FE}	$V_{CE} = 5\text{V}, I_C = 5\text{A}$	20	-	30	-
Collector-emitter Saturation Voltage	$V_{CE(sat)}$	$I_C = 8\text{A}, I_B = 1.6\text{A}$	-	-	1.5	V
Base-emitter saturation voltage	$V_{BE(sat)}$	$I_C = 8\text{A}, I_B = 1.6\text{A}$	-	-	1.5	V
Storage time	t_s	UI9600 $I_C = 500\text{mA}$	-	-	3	us
Transition Frequency	f_T	$I_C = 0.2\text{A}, V_{CE} = 10\text{V}, f = 1\text{MHz}$	5	-	-	MHZ

Ratings and Characteristic Curves (@ $T_A = 25^\circ\text{C}$ unless otherwise specified)



Package Outline Dimensions (Unit: mm)



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