

TO-220 Plastic-Encapsulate Transistors

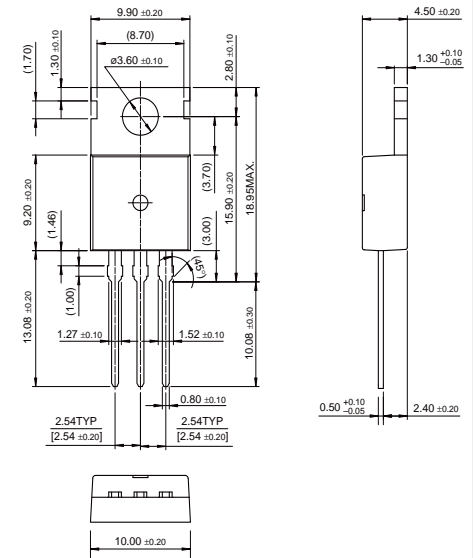
FEATURES

- NPN Silicon Transistor
- High speed Switching
- Suitable for Switching Regulator and Motor Control
- High Voltage Mode Application

MECHANICAL DATA

- Case style:TO-220 molded plastic
- Mounting position:any

TO-220



Unit: inch (mm)

MAXIMUM RATINGS

($T_a=25^{\circ}\text{C}$ unless otherwise noted)

Parameter	Symbol	Value	Unit
Collector-Base Voltage	BV_{CBO}	700	V
Collector-Emitter Voltage	BV_{CEO}	400	V
Emitter-Base Voltage	BV_{EBO}	9	V
Collector Current	I_C	12	A
Collector Power Dissipation	P_C	100	W
Junction Temperature	T_j	150	$^{\circ}\text{C}$
Storage Temperature	T_{stg}	-55~150	$^{\circ}\text{C}$

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

Parameter	Symbol	Conditions	Value			Unit
			Min	Typ	Max	
Collector-base breakdown voltage	BV_{CBO}	$I_C = 100\mu\text{A}$, $I_E = 0$	700			V
Collector-emitter breakdown voltage	BV_{CEO}	$I_C = 10\text{mA}$, $I_B = 0$	400			V
Emitter-base breakdown voltage	BV_{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}	$V_{CE} = 400\text{V}$, $I_B = 0$			1	mA
Emitter cut-off current	I_{EBO}	$V_{EB} = 9\text{V}$, $I_C = 0$			0.1	mA
*DC current gain	h_{FE}	$V_{CE} = 5\text{V}$, $I_C = 5\text{A}$ $V_{CE} = 5\text{V}$, $I_C = 8\text{A}$	8 6		40 30	
*Collector-emitter saturation voltage	$V_{CE(sat)}$	$I_C = 5\text{A}$, $I_B = 1\text{A}$ $I_C = 8\text{A}$, $I_B = 1.6\text{A}$ $I_C = 12\text{A}$, $I_B = 3\text{A}$			1 1.5 3	V
*Base-emitter saturation voltage	$V_{BE(sat)}$	$I_C = 5\text{A}$, $I_B = 1\text{A}$ $I_C = 8\text{A}$, $I_B = 1.6\text{A}$			1.2 1.6	V
Transition frequency	f_T	$V_{CE} = 10\text{V}$, $I_B = 0.5\text{A}$	4			MHz
Turn On Time	t_{ON}	$V_{CC} = 125\text{V}$, $I_C = 8\text{A}$			1.1	μs
Storage Time	t_{STG}	$I_{B1} = 1.6\text{A}$, $I_{B2} = -1.6\text{A}$			3.0	μs
Fall Time	t_F	$R_L = 15.6\Omega$			0.7	μs

* Pulse Test: Pulse Width $\leq 300\mu\text{s}$, Duty Cycle $\leq 2\%$