

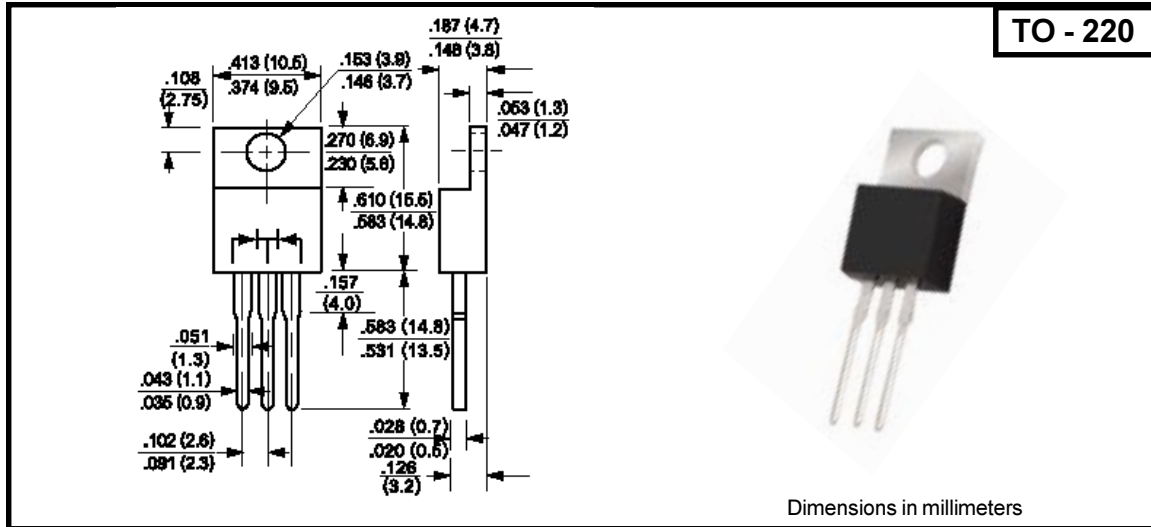


SEMICONDUCTOR

TECHNICAL SPECIFICATION

TIP125

TO-220 - PNP Plastic Power Transistors



Absolute Max. Ratings (Ta=25oC)

	Symbol		Ratings	Unit
Collector-base voltage (open emitter)	V_{CBO}	max.	60	V
Collector-emmitor voltage (open base)	V_{CEO}	max.	60	V
Collector current	I_C	max.		A
Total Power Dissipation up to $T_C = 25\text{ }^{\circ}\text{C}$	P_{tot}	max.		W
Junction Temperature	T_j	max.		$^{\circ}\text{C}$
Collector-emitter saturation voltage $I_C = 3\text{A}$; $I_B = 12\text{mA}$	$V_{CE(sat)}$	max.		V
D.C. current gain $I_C = 0.5\text{ A}$; $V_{CE} = 3\text{V}$	h_{FE}	min		K

Chara. Ratings (at Ta = 25°C unless otherw ise specified)

	Symbol		Ratings	Unit
Collector-base voltage (open emitter)	V_{CBO}	max.	60	V
Collector-emitter voltage (open base)	V_{CEO}	max.	60	V
Emitter-base voltage (open collector)	V_{EBO}	max.		V
Collector current	I_C	max.	5	A
Collector current (peak)	I_{CM}	max.	8	A
Base current	I_B	max.	120	mA
Total power dissipation up to $TC = 25^{\circ}\text{C}$	P_{TOT}	max.	65	W
Debrate above 25°C		max.	0.52	W / $^{\circ}\text{C}$
Total power dissipation up to $TA = 25\text{ }^{\circ}\text{C}$	P_{TOT}	max.	2	W
Debrate above 25°C		max.	0.016	W / $^{\circ}\text{C}$
Storage temperature	T_{STG}	max.	-65 to +150	$^{\circ}\text{C}$
Junction temperature	T_J	max.	150	$^{\circ}\text{C}$

Chara. Ratings (at $T_a = 25^\circ\text{C}$ unless otherwise specified)**Symbol****Ratings****Unit**

Collector cutoff current $I_E = 0; V_{CB} = 60\text{ V}$ $I_E = 0; V_{CB} = 80\text{ V}$ $I_E = 0; V_{CB} = 100\text{ V}$ $I_B = 0; V_{CE} = 30\text{ V}$ $I_B = 0; V_{CE} = 40\text{ V}$ $I_B = 0; V_{CE} = 50\text{ V}$	I_{CBO} I_{CBO} I_{CBO} I_{CEO} I_{CEO} I_{CEO}	max. max. max. max. max. max.	0.2 0.5	mA mA
Emitter cut-off current $I_C = 0; V_{EB} = 5\text{ V}$	I_{EBO}	max.	2	mA
Breakdown Voltages $I_C = 100\text{ mA}; I_B = 0$ $I_C = 1\text{ mA}; I_E = 0$ $I_E = 1\text{ mA}; I_C = 0$	$V_{CEO(sus)}^*$ V_{CBO} V_{EBO}	min. min. min.	60 60	V V V
Saturation Voltages $I_C = 3.0\text{ A}; I_{EB} = 12\text{ mA}$ $I_C = 5.0\text{ A}; I_{EB} = 20\text{ mA}$	V_{CEsat}^* V_{CEsat}^*	max. max.	2 4	V V
Base-emitter on voltage $I_C = 3\text{ A}; V_{CE} = 3\text{ V}$	$V_{BE(on)}^*$	max.	2.5	V
D.C. current gain $I_C = 0.5\text{ A}; V_{CE} = 3\text{ V}$ $I_C = 3\text{ A}; V_{CE} = 3\text{ V}$	h_{FE}^*	min. min.	1 1	K K
Small signal current gain $I_C = 3.0\text{ A}; V_{CE} = 4\text{ V}; f = 1\text{ MHz}$	h_{FE}	min.	4	
Output Capacitance at $f = 0.1\text{ MHz}$ $I_E = 0; V_{CB} = 10\text{ V}$	C_O	max.	300	pF

*Pulse test: pulse width $\leq 300\text{ }\mu\text{s}$; duty cycle $\leq 2\%$ **THERMAL RESISTANCE**

From junction to ambient	$R_{th\ j-a}$		62.5	$^\circ\text{C} / \text{W}$
From junction to case	$R_{th\ j-c}$		1.92	$^\circ\text{C} / \text{W}$

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