



TO-92L Plastic-Encapsulate Transistors

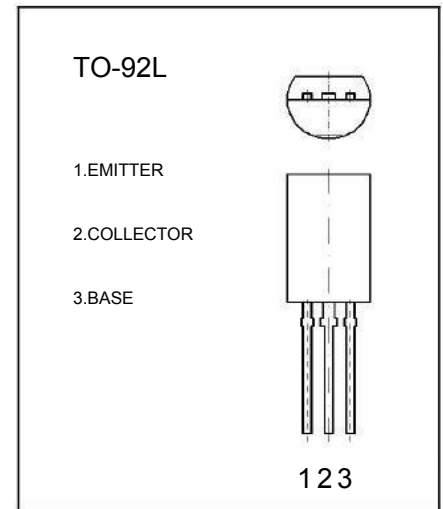
B648 TRANSISTOR(PNP)

FEATURES

Low collector to emitter saturation voltage $V_{CE(sat)}$.
Complementary pair with D668

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

Symbol	Parameter		Units
V_{CBO}	Collector-Base Voltage	-180	V
V_{CEO}	Collector-Emitter Voltage	-120	V
V_{EBO}	Emitter-Base Voltage	-5	V
I_C	Collector Current –Continuous	-0.05	A
P_C	Collector Power Dissipation	1.0	W
T_J	Junction Temperature	150	$^\circ\text{C}$
T_{stg}	Storage Temperature	-55-150	$^\circ\text{C}$



ELECTRICAL CHARACTERISTICS ($T_{amb}=25^\circ\text{C}$ unless otherwise specified)

Parameter	Symbol	Test conditions	MIN	TYP	MAX	UNIT
Collector-base breakdown voltage	$V_{(BR)CBO}$	$I_C=-10\mu\text{A}, I_E=0$	-180			V
Collector-emitter breakdown voltage	$V_{(BR)CEO}$	$I_C=-1\text{mA}, I_B=0$	-120			V
Emitter-base breakdown voltage	$V_{(BR)EBO}$	$I_E=-10\mu\text{A}, I_C=0$	-5			V
Collector cut-off current	I_{CBO}	$V_{CB}=-160\text{V}, I_E=0$			-10	μA
DC current gain	$h_{FE(1)}$	$V_{CE}=-5\text{V}, I_C=-10\text{mA}$	60		320	
DC current gain	$h_{FE(2)}$	$V_{CE}=-5\text{V}, I_C=-1\text{mA}$	30			
Collector-emitter saturation voltage	$V_{CE(sat)}$	$I_C=-30\text{mA}, I_B=-3\text{mA}$			-2.0	V
Base-emitter saturation voltage	$V_{BE(sat)}$	$I_C=-10\text{mA}, V_{CE}=-5\text{V}$			-1.5	V
Transition frequency	f_T	$V_{CE}=-10\text{V}, I_C=-10\text{mA}$		140		MHz

CLASSIFICATION OF $h_{FE(1)}$

Rank	B	C	D
Range	60-120	100--200	160-320

