

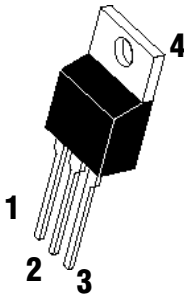


5.0 Amp PNP Darlington Power Transistor

Description

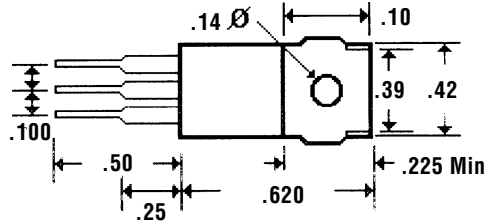
Mechanical Dimensions

TIP127



- 1. BASE
- 2. COLLECTOR
- 3. EMITTER
- 4. COLLECTOR

JEDEC TO-220AB



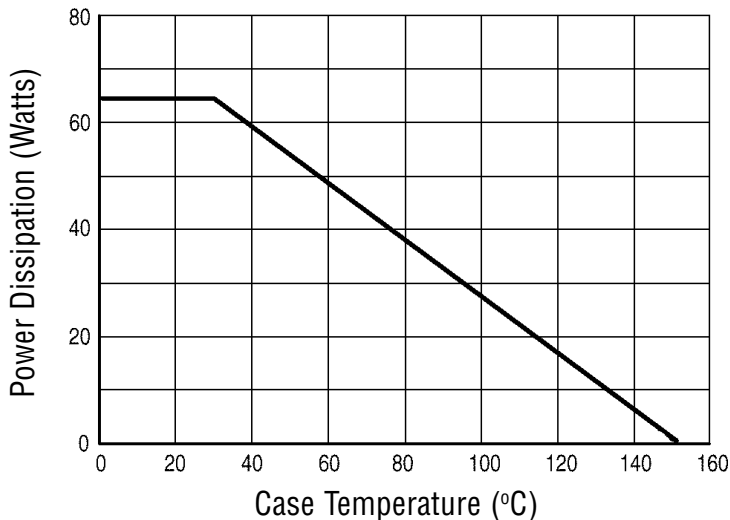
Maximum Ratings

Ratings	Symbol	Value	Units
Collector - Emitter Voltage	V_{CEO}	100	V
Collector - Base Voltage	V_{CBO}	100	V
Emitter - Base Voltage	V_{EBO}	5.0	V
Collector Current (Continuous)	I_C	5.0	A
Collector Current (Peak)	I_{CM}	8.0	A
Base Current	I_B	120	mA

Thermal Characteristics

Characteristic	Symbol	Max	Units
Total Power Dissipation	P_D	65	Watts
Derate above 25°C		0.52	W/°C
Thermal Resistance (Junction to Case)	$R_{\theta JC}$	1.92	°C/W
Junction and Storage Temperature	T_J, T_{STG}	-65 to 150	°C

Power Derating Curve





TIP127 5.0 Amp PNP Darlington Power Transistor

Electrical Characteristics @ 25°C**OFF CHARACTERISTICS**

Collector - Emitter Sustaining Voltage (Note 1)

 $(I_C = 30 \text{ mA}, I_B = 0)$

Symbol

 $V_{CE0(sus)}$

Min

100

Max

Unit

V

Collector Cutoff Current

 $(V_{CE} = 50 \text{ V}, I_B = 0)$

Symbol

 I_{CEO}

Min

Max

0.5

Unit

mA

Collector Cutoff Current

 $(V_{CB} = 100 \text{ V}, I_E = 0)$

Symbol

 I_{CBO}

Min

Max

0.2

Unit

mA

Emitter Cutoff Current

 $(V_{EB} = 5.0 \text{ V}, I_C = 0)$

Symbol

 I_{EBO}

Min

Max

2.0

Unit

mA

ON CHARACTERISTICS (Note 1)

DC Current Gain

 $(I_C = 0.5 \text{ A}, V_{CE} = 3.0 \text{ V})$ $(I_C = 3.0 \text{ A}, V_{CE} = 3.0 \text{ V})$

Symbol

 h_{FE}

Min

1000

Max

Unit

Collector - Emitter Saturation Voltage

 $(I_C = 3.0 \text{ A}, I_B = 12 \text{ mA})$ $(I_C = 5.0 \text{ A}, I_B = 20 \text{ mA})$

Symbol

 $V_{CE(sat)}$

Min

Max

2.0

Unit

V

Base - Emitter On Voltage

 $(I_C = 3.0 \text{ A}, V_{CE} = 3.0 \text{ V})$

Symbol

 $V_{BE(on)}$

Min

Max

2.5

Unit

V

DYNAMIC CHARACTERISTICS

Output Capacitance

 $(I_E = 0, V_{CB} = 10 \text{ V}, f = 0.1 \text{ MHz})$

Symbol

 C_{OB}

Min

Max

250

Unit

pF

Small Signal Current Gain

 $(I_C = 3.0 \text{ A}, V_{CE} = 4.0 \text{ V}, f = 1.0 \text{ MHz})$

Symbol

 h_{fe}

Min

4.0

Max

Unit

Notes:

(1) Pulse test: Pulse width $\leq 300 \mu\text{s}$, duty cycle $\leq 2.0\%$.