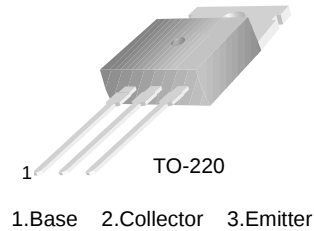


TIP32 Series(TIP32/32A/32B/32C)

Medium Power Linear Switching Applications

- Complement to TIP31/31A/31B/31C



PNP Epitaxial Silicon Transistor

Absolute Maximum Ratings $T_C=25^\circ\text{C}$ unless otherwise noted

Symbol	Parameter	Value	Units
V_{CBO}	Collector-Base Voltage : TIP32 : TIP32A : TIP32B : TIP32C	- 40	V
		- 60	V
		- 80	V
		- 100	V
V_{CEO}	Collector-Emitter Voltage : TIP32 : TIP32A : TIP32B : TIP32C	- 40	V
		- 60	V
		- 80	V
		-100	V
V_{EBO}	Emitter-Base Voltage	- 5	V
I_C	Collector Current (DC)	- 3	A
I_{CP}	Collector Current (Pulse)	- 5	A
I_B	Base Current	- 3	A
P_C	Collector Dissipation ($T_C=25^\circ\text{C}$)	40	W
P_C	Collector Dissipation ($T_a=25^\circ\text{C}$)	2	W
T_J	Junction Temperature	150	$^\circ\text{C}$
T_{STG}	Storage Temperature	- 65 ~ 150	$^\circ\text{C}$

Electrical Characteristics $T_C=25^\circ\text{C}$ unless otherwise noted

Symbol	Parameter	Test Condition	Min.	Max.	Units
$V_{CEO(sus)}$	* Collector-Emitter Sustaining Voltage : TIP32 : TIP32A : TIP32B : TIP32C	$I_C = -30\text{mA}$, $I_B = 0$	-40		V
			-60		V
			-80		V
			-100		V
I_{CEO}	Collector Cut-off Current : TIP32/32A : TIP32B/32C	$V_{CE} = -30\text{V}$, $I_B = 0$		- 0.3	mA
		$V_{CE} = -60\text{V}$, $I_B = 0$		- 0.3	mA
I_{CES}	Collector Cut-off Current : TIP32 : TIP32A : TIP32B : TIP32C	$V_{CE} = -40\text{V}$, $V_{EB} = 0$		- 200	μA
		$V_{CE} = -60\text{V}$, $V_{EB} = 0$		- 200	μA
		$V_{CE} = -80\text{V}$, $V_{EB} = 0$		- 200	μA
		$V_{CE} = -100\text{V}$, $V_{CE} = 0$		- 200	μA
I_{EBO}	Emitter Cut-off Current	$V_{EB} = -5\text{V}$, $I_C = 0$		- 1	mA
h_{FE}	* DC Current Gain	$V_{CE} = -4\text{V}$, $I_C = -1\text{A}$	25		
		$V_{CE} = -4\text{V}$, $I_C = -3\text{A}$	10	50	
$V_{CE(sat)}$	* Collector-Emitter Saturation Voltage	$I_C = -3\text{A}$, $I_B = -375\text{mA}$		- 1.2	V
$V_{BE(sat)}$	* Base-Emitter Saturation Voltage	$V_{CE} = -4\text{V}$, $I_C = -3\text{A}$		- 1.8	V
f_T	Current Gain Bandwidth Product	$V_{CE} = -10\text{V}$, $I_C = -500\text{mA}$	3.0		MHz

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

Typical Characteristics

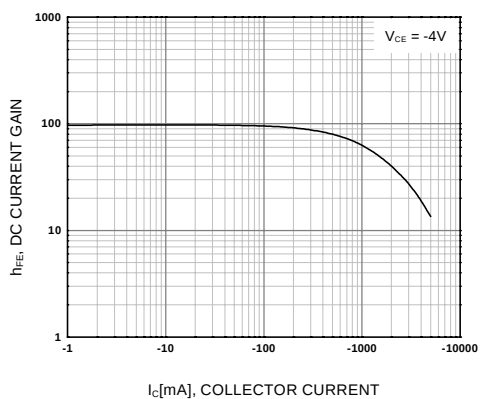


Figure 1. DC current Gain

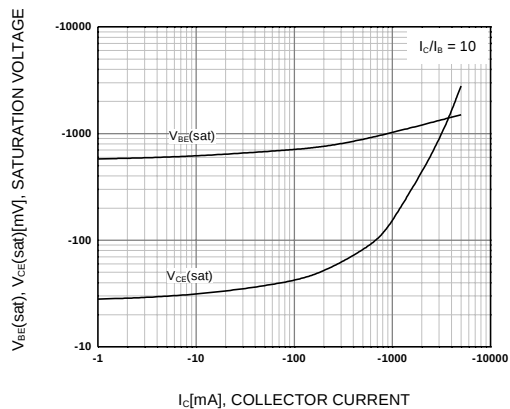


Figure 2. Base-Emitter Saturation Voltage
Collector-Emitter Saturation Voltage

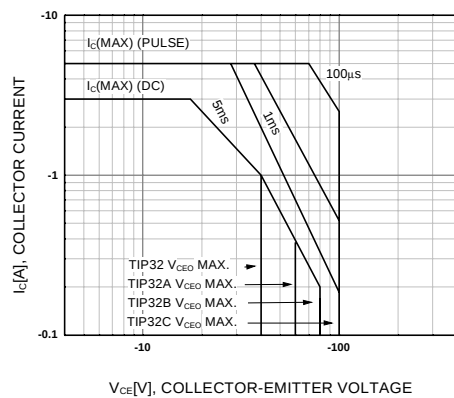


Figure 3. Safe Operating Area

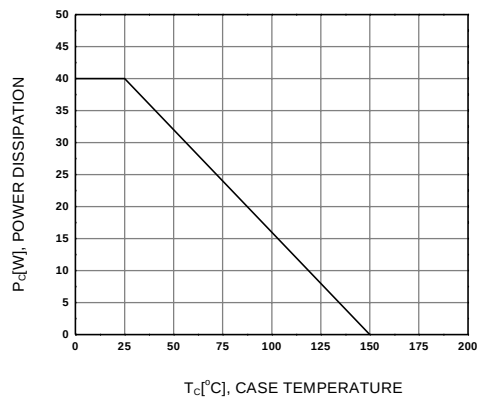
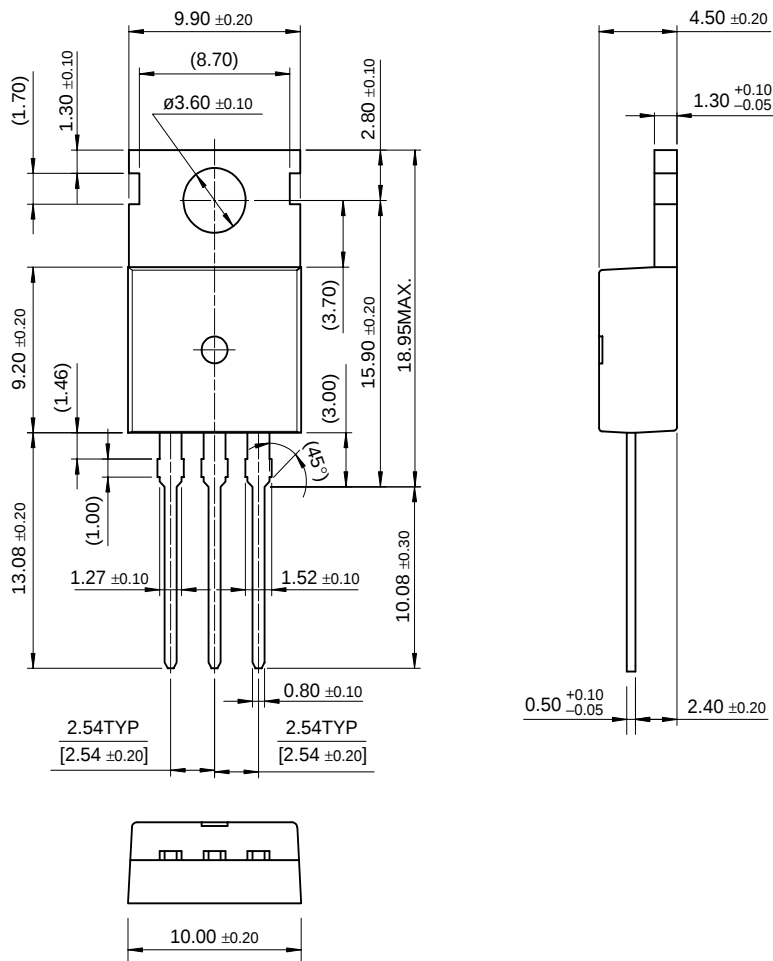


Figure 4. Power Derating

Package Dimensions

TO-220



Dimensions in Millimeters

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TIP32B

PNP Epitaxial Silicon Transistor

Contents

[Features](#) | [Applications](#) | [Product status/pricing/package](#)

Features

- Complement to TIP31/31A/31B/31C

[back to top](#)

Applications

Medium Power Linear Switching

[back to top](#)

Product status/pricing/package

Product	Product status	Pricing*	Package type	Leads	Packing method
TIP32BTU	Full Production	\$0.319	TO-220	3	RAIL

* 1,000 piece Budgetary Pricing

[back to top](#)

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[applications](#)

[New products](#)

[Product selection and](#)

[parametric search](#)

[Cross-reference](#)

[search](#)

TIP32C

PNP Epitaxial Silicon Transistor

Contents

[Features](#) | [Applications](#) | [Product status/pricing/package](#)

Features

- Complement to TIP31/31A/31B/31C

[back to top](#)

Applications

Medium Power Linear Switching

[back to top](#)

Product status/pricing/package

Product	Product status	Pricing*	Package type	Leads	Packing method
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TIP32CTSTU	Full Production	\$0.319	TO-220	3	RAIL

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[back to top](#)

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[Signal](#)

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[Non-Volatile](#)

[Memory](#)

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[Markets and](#)

[applications](#)

[New products](#)

[Product selection and](#)

[parametric search](#)

[Cross-reference](#)

[search](#)

TIP32A

PNP Epitaxial Silicon Transistor

Contents

[Features](#) | [Applications](#) | [Product status/pricing/package](#)

Features

- Complement to TIP31/31A/31B/31C

[back to top](#)

Applications

Medium Power Linear Switching

[back to top](#)

Product status/pricing/package

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TIP32A	Full Production	\$0.32	TO-220	3	BULK

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[back to top](#)

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applications

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Product selection and

parametric search

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technical information

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technical support

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TIP32

PNP Epitaxial Silicon Transistor

Contents

Features | Applications | Product
status/pricing/package

Features

- Complement to TIP31/31A/31B/31C

back to top

Applications

Medium Power Linear Switching

back to top

Product status/pricing/package

Product	Product status	Pricing*	Package type	Leads	Packing method
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TIP32TU	Full Production	\$0.319	TO-220	3	RAIL

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back to top

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