

## PNP Epitaxial Silicon Transistor

### 1 Description

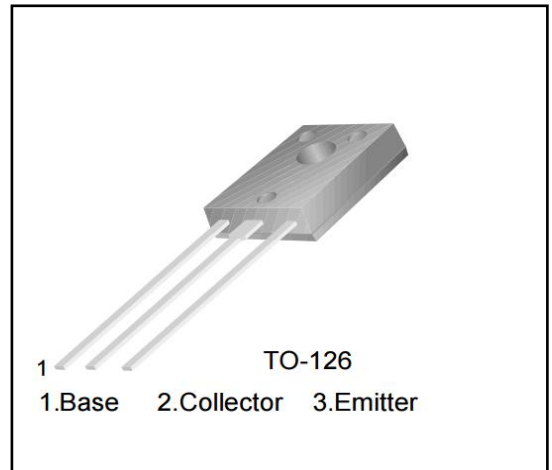
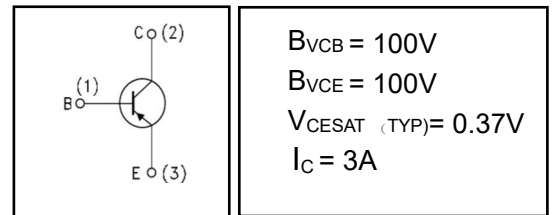
The TIPL32C is a medium power low voltage transistor

### 2 Features

- High current output up to 3A
- Low saturation voltage
- Complement to TIP31C

### 3 Applications

- voltage regulator
- medium power linear
- switching



## 4 Electrical Characteristics

### 4.1 Absolute Maximum Ratings (Tc=25°C, unless otherwise noted)

PARAMETER	SYMBOL	VALUE	UNIT
Collector-Base Voltage	$V_{CBO}$	-100	V
Collector-Emitter Voltage	$V_{CEO}$	-100	V
Emitter-Base Voltage	$V_{EBO}$	-5	V
Collector Current (DC)	$I_C$	-3	A
*Collector Current (Pulse)	$I_{CP}$	-5	A
Base Current (DC)	$I_B$	-3	A
Collector Dissipation (TC=25°C)	$P_C$	25	W
Collector Dissipation (Ta=25°C)		2	W
Junction Temperature	$T_J$	150	°C
Storage Temperature	$T_{STG}$	-55 ~ 150	°C

\* PW≤10ms, Duty Cycle≤50%

### 4.2 Thermal Characteristics

PARAMETER	SYMBOL	VALUE	UNIT
Thermal Resistance, Junction to Case-sink	$R_{thJC}$	7.2	°C/W
Thermal Resistance, Junction to Ambient	$R_{thJA}$	90	°C/W

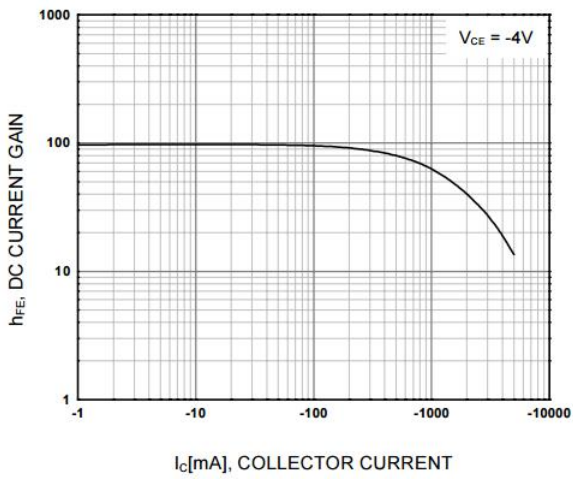
**4.3 Electrical Characteristics** (Tc=25°C, unless otherwise noted)

SYMBOL	PARAMETER	Test Conditions	Min	Typ	Max	Unit
I <sub>CES</sub>	Collector Cut-off Current (V <sub>BE</sub> = 0)	V <sub>CE</sub> =-100V	-	-	10	uA
I <sub>CEO</sub>	Collector Cut-off Current (I <sub>B</sub> = 0)	V <sub>CE</sub> =-100V	-	-	50	uA
I <sub>EBO</sub>	Emitter Cut-off Current (I <sub>C</sub> = 0)	V <sub>EB</sub> =-5V	-	-	10	uA
V <sub>(BR)CEO</sub>	Collector-Emitter Breakdown Voltage (I <sub>B</sub> = 0)	I <sub>C</sub> =-10mA	100	125	-	V
V <sub>(BR)CBO</sub>	Collector-Base Breakdown Voltage (I <sub>E</sub> = 0)	I <sub>C</sub> =-100uA	100	163	-	V
V <sub>(BR)EBO</sub>	Emitter-Base Breakdown Voltage (I <sub>C</sub> = 0)	I <sub>E</sub> =-100uA	5	13	-	V
V <sub>CE(sat)</sub>	Collector-Emitter Saturation Voltage	I <sub>C</sub> =-0.5A I <sub>B</sub> =-50mA	-	0.1	0.4	V
		I <sub>C</sub> =-1A I <sub>B</sub> =-100mA	-	0.18	0.5	
		I <sub>C</sub> =-3A I <sub>B</sub> =-300mA	-	0.37	0.8	
V <sub>BE(sat)</sub>	Base-Emitter Saturation Voltage	I <sub>C</sub> =-3A I <sub>B</sub> =-300mA	-	1.1	1.5	
h <sub>FE</sub>	DC Current Gain	I <sub>C</sub> =-10mA, V <sub>CE</sub> =-5V	30	-	300	
		I <sub>C</sub> =-1A, V <sub>CE</sub> =-5 V*	60	120	200	
		I <sub>C</sub> =-3A, V <sub>CE</sub> =-5 V	15	-	300	
f <sub>T</sub>	Transition Frequency	V <sub>CE</sub> =-10V, I <sub>C</sub> =-500mA, f=10MHZ	3	-	-	MHZ

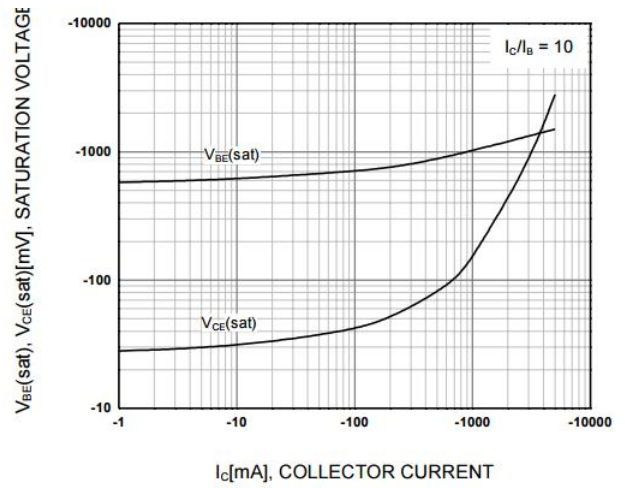
**h<sub>FE</sub>\* Classification**

Classification	1	2	3	4	5	6
h <sub>FE</sub> *	60-80	80-100	100-120	120-140	140-160	160-200

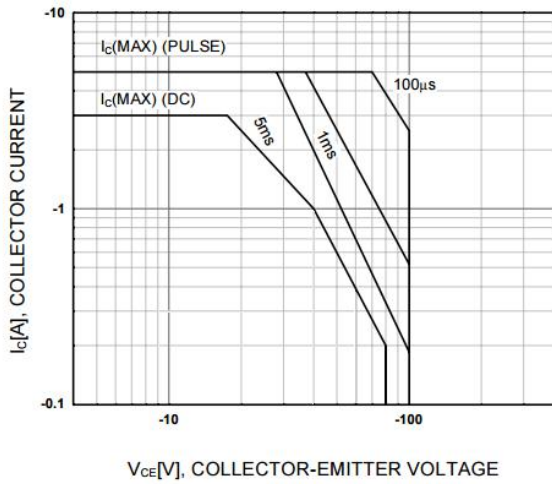
**5 Typical characteristics diagrams**



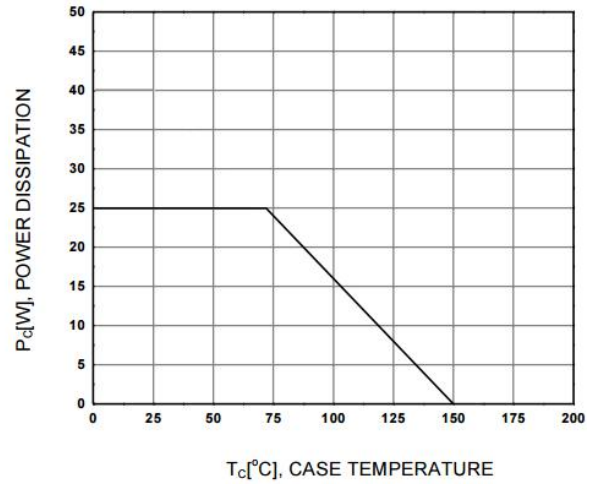
**Figure 1. DC current Gain**



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



**Figure 3. Safe Operating Area**



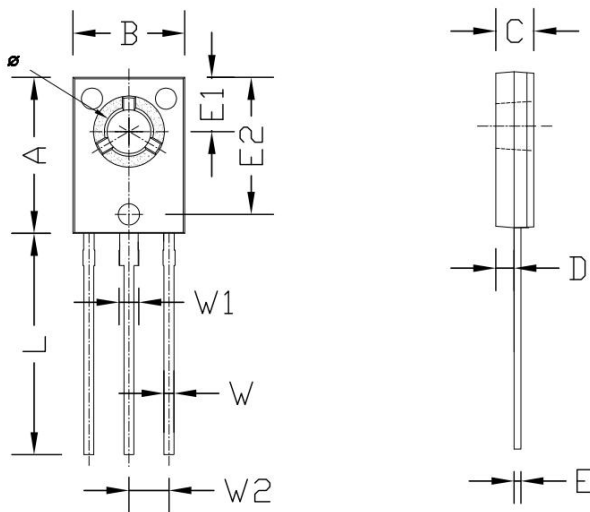
**Figure 4. Power Derating**

**6 Product Specifications and Packaging Models**

Product Model	Package Type	Mark Name	RoHS	Package	Quantity
TIP32C	TO-126	TIPL32C	Pb-free	bag	200/bag

## 7 Dimensions

TO-126 PACKAGE OUTLINE DIMENSIONS



Symbol	Dimensions In Millimeters		Dimensions In Inches	
	min.	max.	min.	max.
A	10.50	11.10	0.413	0.437
B	7.65	7.95	0.301	0.313
C	2.50	2.80	0.098	0.110
D	1.45	1.75	0.057	0.069
E	0.40	0.60	0.016	0.024
E1	3.65	3.85	0.144	0.152
E2	9.40	9.60	0.370	0.378
L	15.4	15.9	0.606	0.626
W	0.60	0.80	0.024	0.031
W1	1.20	1.30	0.047	0.051
W2	2.32 TYP		0.091 TYP	
Φ	3.05	3.35	0.120	0.132

## 8 Attentions

- ROUM Semiconductor Technology CO.,LTD. reserves the right to change the specification without prior notice! The customer should obtain the latest version of the information before making the order and verify that the information is complete and up to date.
- It is the responsibility of the purchaser for any failure or failure of any semiconductor product under certain conditions. It is the responsibility of the purchaser to comply with safety standards and to take safety measures in the system design and machine manufacturing of Roma products in order to avoid potential risk of failure. Injury or property damage.
- Product promotion is endless, our company will be dedicated to provide customers with better products.

## 9 Appendix

Revision history:

Date	REV.	Description	Page
2017.04.11	1.0	Original	