

*Product Preview*  
**General Purpose Transistors**

**PNP Bipolar Junction Transistor**  
(Complementary NPN Device: MMBT2132T1/T3)

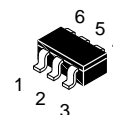
NOTE: Voltage and Current are negative for the PNP Transistor.

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

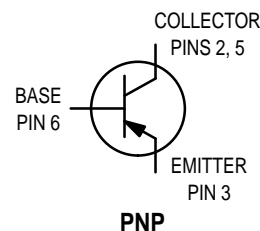
Rating	Symbol	Value	Unit
Collector–Emitter Voltage	$V_{CEO}$	30	V
Collector–Base Voltage	$V_{CBO}$	40	V
Emitter–Base Voltage	$V_{EBO}$	5.0	V
Collector Current	$I_C$	700	mA
Base Current	$I_B$	350	mA
Total Power Dissipation @ $T_C = 25^\circ\text{C}$	$P_D$	342	mW
Total Power Dissipation @ $T_C = 85^\circ\text{C}$	$P_D$	178	mW
Thermal Resistance — Junction to Ambient (1)	$R_{\theta JA}$	366	$^\circ\text{C/W}$
Total Power Dissipation @ $T_C = 25^\circ\text{C}$	$P_D$	665	mW
Total Power Dissipation @ $T_C = 85^\circ\text{C}$	$P_D$	346	mW
Thermal Resistance — Junction to Ambient (2)	$R_{\theta JA}$	188	$^\circ\text{C/W}$
Operating and Storage Temperature Range	$T_J, T_{stg}$	-55 to +150	$^\circ\text{C}$

**MMBT2131T1**  
**MMBT2131T3**

**0.7 AMPERES**  
**30 VOLTS —  $V_{(BR)CEO}$**   
**342 mW**



**CASE 318F-02, STYLE 2**  
**SC-59 — 6 Lead**



**ELECTRICAL CHARACTERISTICS** ( $T_C = 25^\circ\text{C}$  unless otherwise noted)

Characteristic	Symbol	Min	Typ	Max	Unit
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**OFF CHARACTERISTICS**

Collector–Base Breakdown Voltage ( $I_C = 100 \mu\text{Adc}$ )	$V_{(BR)CBO}$	40	—	—	Vdc
Collector–Emitter Breakdown Voltage ( $I_C = 10 \text{ mAdc}$ )	$V_{(BR)CEO}$	30	—	—	Vdc
Emitter–Base Breakdown Voltage ( $I_E = 100 \mu\text{Adc}$ )	$V_{(BR)EBO}$	5.0	—	—	Vdc
Collector Cutoff Current ( $V_{CB} = 25 \text{ Vdc}, I_E = 0 \text{ Adc}$ ) ( $V_{CB} = 25 \text{ Vdc}, I_E = 0 \text{ Adc}, T_A = 125^\circ\text{C}$ )	$I_{CBO}$	—	—	1.0 10	$\mu\text{Adc}$
Emitter Cutoff Current ( $V_{EB} = 5.0 \text{ Vdc}, I_C = 0 \text{ Adc}$ )	$I_{EBO}$	—	—	10	$\mu\text{Adc}$

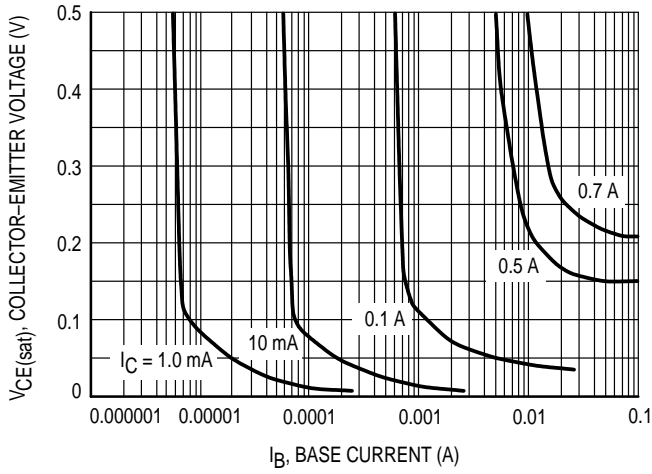
**ON CHARACTERISTICS**

DC Current Gain ( $V_{CE} = 3.0 \text{ Vdc}, I_C = 100 \text{ mAdc}$ )	$h_{FE}$	150	—	—	Vdc
Collector–Emitter Saturation Voltage ( $I_C = 500 \text{ mAdc}, I_B = 50 \text{ mAdc}$ )	$V_{CE(sat)}$	—	—	0.25	Vdc
Collector–Emitter Saturation Voltage ( $I_C = 700 \text{ mAdc}, I_B = 70 \text{ mAdc}$ )	$V_{CE(sat)}$	—	—	0.4	Vdc
Base–Emitter Saturation Voltage ( $I_C = 700 \text{ mAdc}, I_B = 70 \text{ mAdc}$ )	$V_{BE(sat)}$	—	—	1.1	Vdc
Collector–Emitter Saturation Voltage ( $I_C = 700 \text{ mAdc}, V_{CE} = 1.0 \text{ Vdc}$ )	$V_{BE(on)}$	—	—	1.0	Vdc

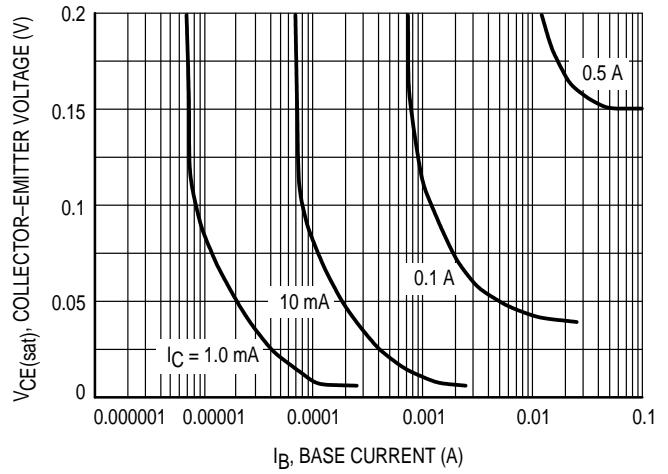
1. Minimum FR-4 or G-10 PCB, Operating to Steady State.
2. Mounted onto a 2" square FR-4 Board (1" sq. 2 oz Cu 0.06" thick single sided), Operating to Steady State.

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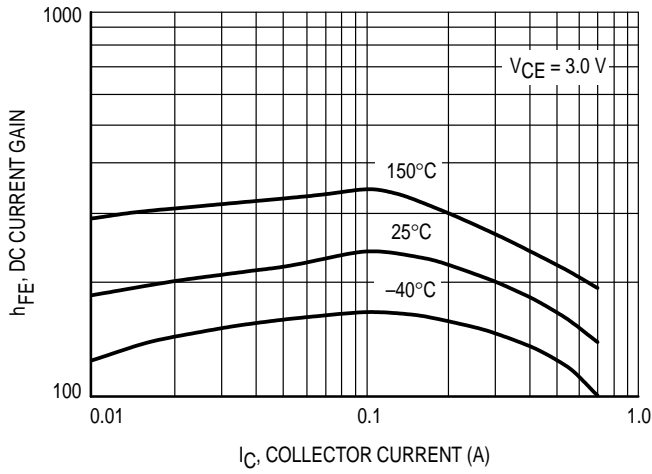
**MMBT2131T1 MMBT2131T3**



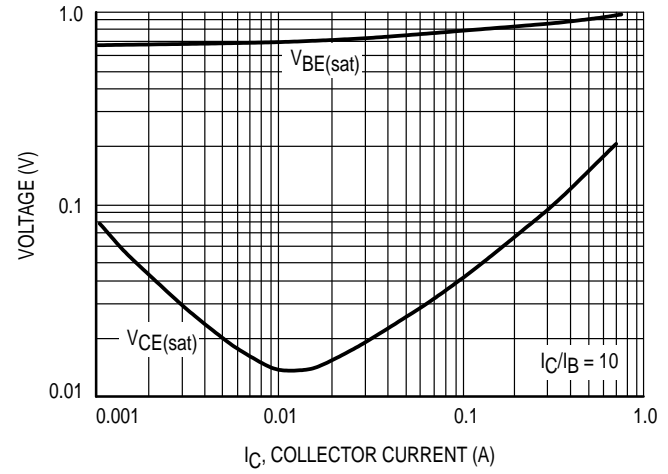
**Figure 1. Collector Saturation Region**



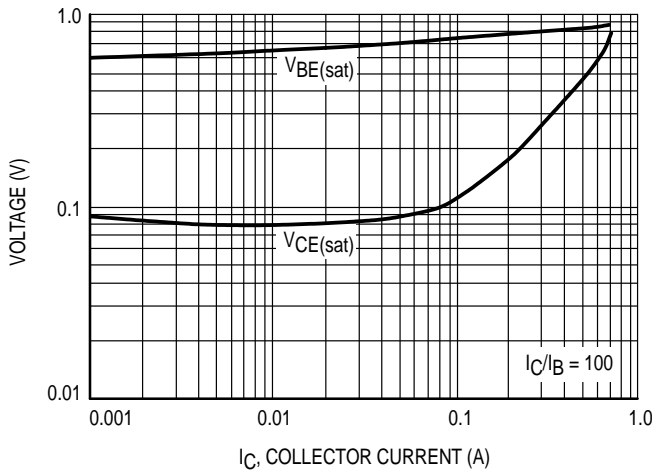
**Figure 2. Collector Saturation Region**



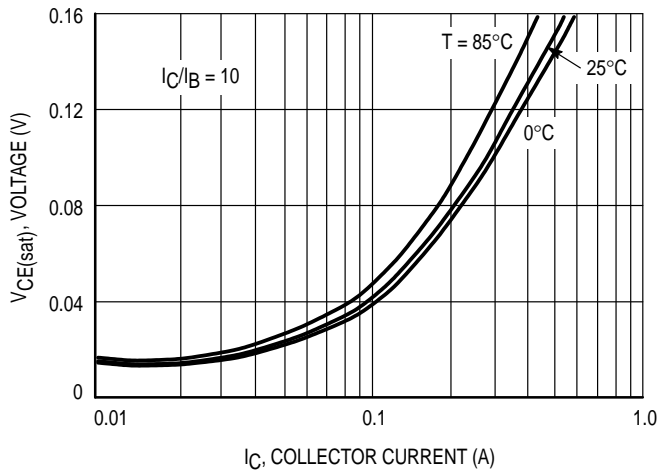
**Figure 3. DC Current Gain**



**Figure 4. "ON" Voltages**



**Figure 5. "ON" Voltages**



**Figure 6. Collector-Emitter Saturation Voltage**

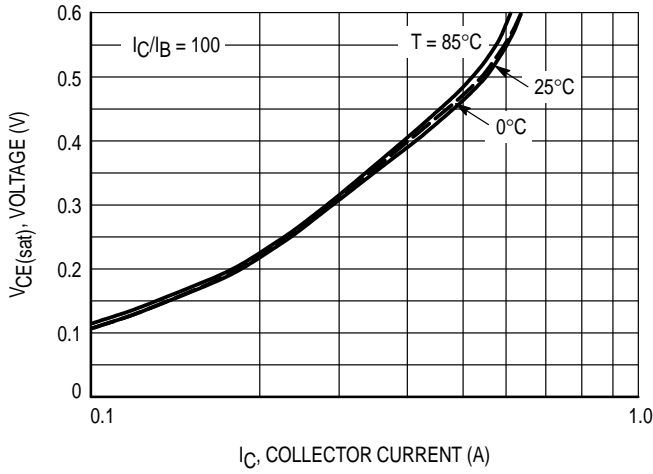


Figure 7. Collector-Emitter Saturation Voltage

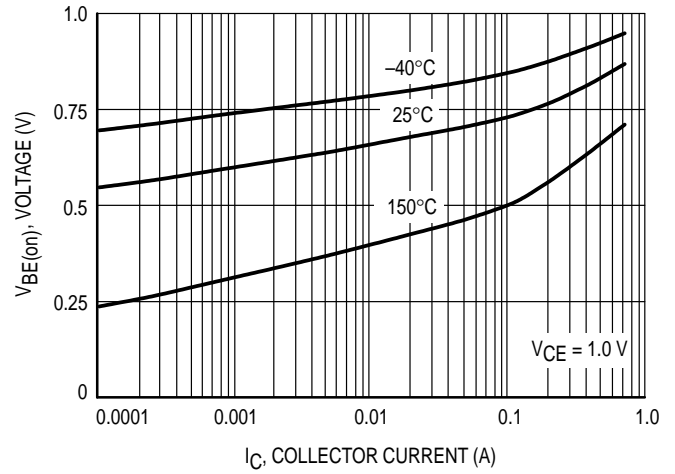


Figure 8.  $V_{BE(on)}$  Voltage

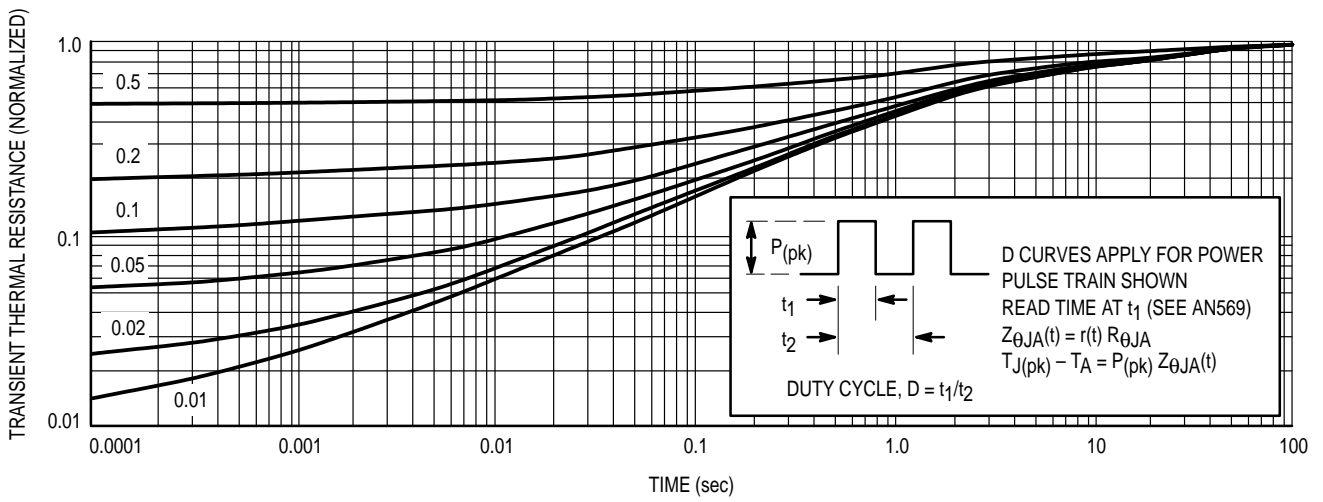
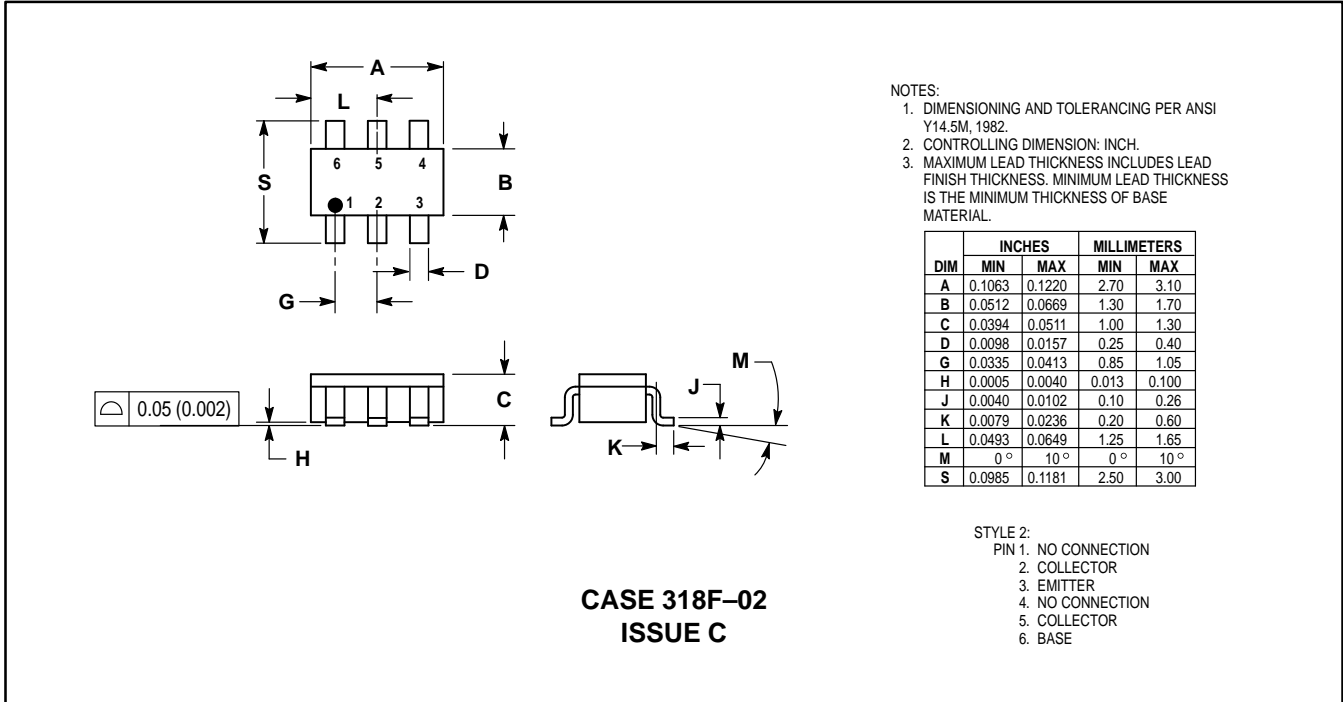


Figure 9. Thermal Response Curve

PACKAGE DIMENSIONS



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