MMBT2131T1

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°C unless otherwise noted)

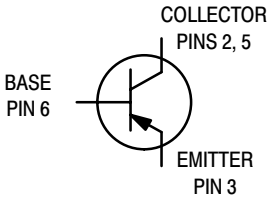
Rating	Symbol	Value	Unit
Collector–Emitter Voltage	V_{CEO}	30	V
Collector–Base Voltage	V_{CBO}	40	V
Emitter–Base Voltage	V_{EBO}	5.0	V
Collector Current	I_C	700	mA
Base Current	I_B	350	mA
Total Power Dissipation @ T_C = 25°C Total Power Dissipation @ T_C = 85°C Thermal Resistance – Junction to Ambient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

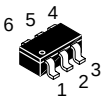
1. Minimum FR–4 or G–10 PCB, Operating to Steady State.
2. Mounted onto a 2″ square FR–4 Board (1″ sq. 2 oz Cu 0.06″ thick single sided), Operating to Steady State.

ON Semiconductor®

http://onsemi.com

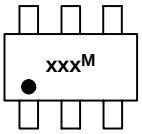
0.7 AMPERES
30 VOLTS – $V_{(BR)CEO}$
342 mW





SC–74
SUFFIX
CASE 318F
Style 2

MARKING DIAGRAM



xxx = Specific Device Code
M = Date Code

ORDERING INFORMATION

Device	Package	Shipping
MMBT2131T1	SC–74	3000/Tape & Reel

ELECTRICAL CHARACTERISTICS (T_C = 25°C unless otherwise noted)

Characteristic		Symbol	Min	Typ	Max	Unit
OFF CHARACTERISTICS						
Collector–Base Breakdown Voltage	(I_C = 100 μAdc)	$V_{(BR)CBO}$	40	–	–	Vdc
Collector–Emitter Breakdown Voltage	(I_C = 10 mAdc)	$V_{(BR)CEO}$	30	–	–	Vdc
Emitter–Base Breakdown Voltage	(I_E = 100 μAdc)	$V_{(BR)EBO}$	5.0	–	–	Vdc
Collector Cutoff Current	(V_{CB} = 25 Vdc, I_E = 0 Adc) (V_{CB} = 25 Vdc, I_E = 0 Adc, T_A = 125°C)	I_{CBO}	– –	– –	1.0 10	μAdc
Emitter Cutoff Current	(V_{EB} = 5.0 Vdc, I_C = 0 Adc)	I_{EBO}	–	–	10	μAdc
ON CHARACTERISTICS						
DC Current Gain	(V_{CE} = 3.0 Vdc, I_C = 100 mAdc)	h_{FE}	150	–	–	Vdc
Collector–Emitter Saturation Voltage	(I_C = 500 mAdc, I_B = 50 mAdc)	$V_{CE(sat)}$	–	–	0.25	Vdc
Collector–Emitter Saturation Voltage	(I_C = 700 mAdc, I_B = 70 mAdc)	$V_{CE(sat)}$	–	–	0.4	Vdc
Base–Emitter Saturation Voltage	(I_C = 700 mAdc, I_B = 70 mAdc)	$V_{BE(sat)}$	–	–	1.1	Vdc
Collector–Emitter Saturation Voltage	(I_C = 700 mAdc, V_{CE} = 1.0 Vdc)	$V_{BE(on)}$	–	–	1.0	Vdc

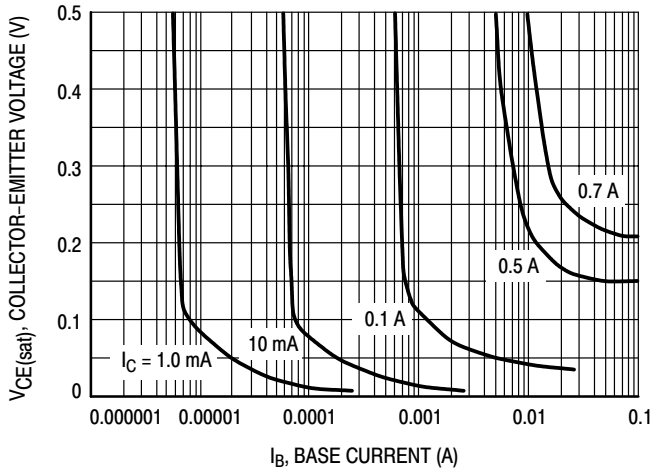


Figure 1. Collector Saturation Region

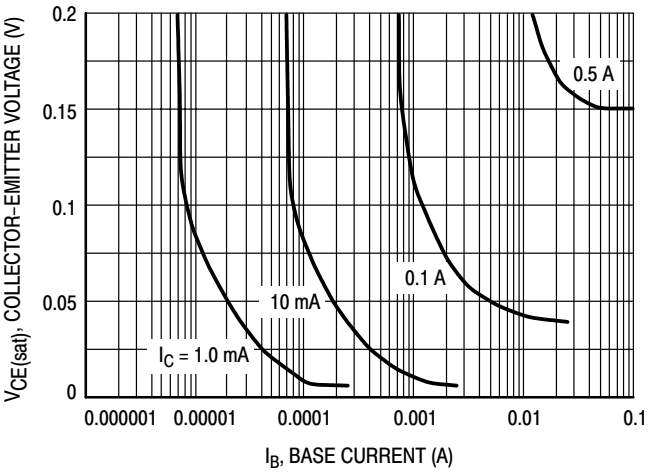


Figure 2. Collector Saturation Region

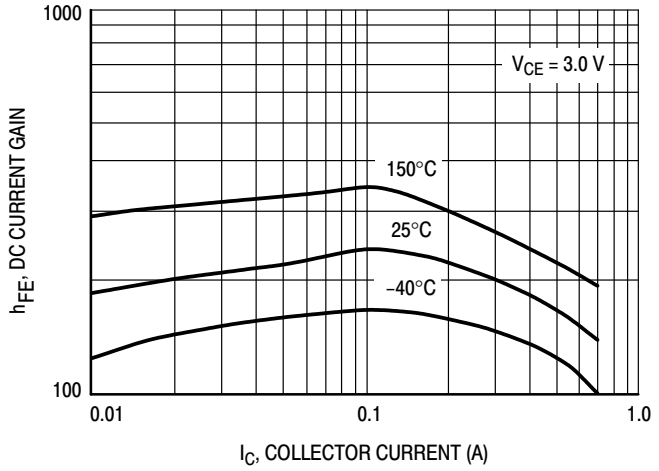


Figure 3. DC Current Gain

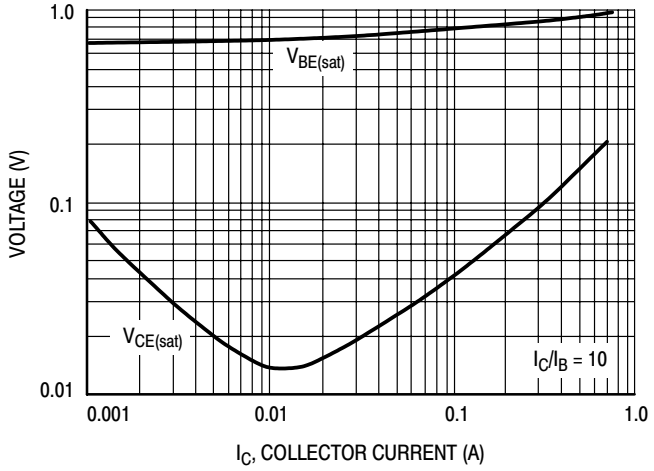


Figure 4. “ON” Voltages

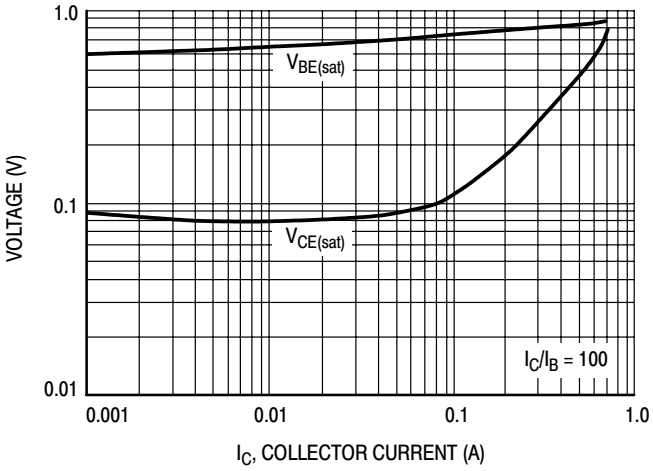


Figure 5. "ON" Voltages

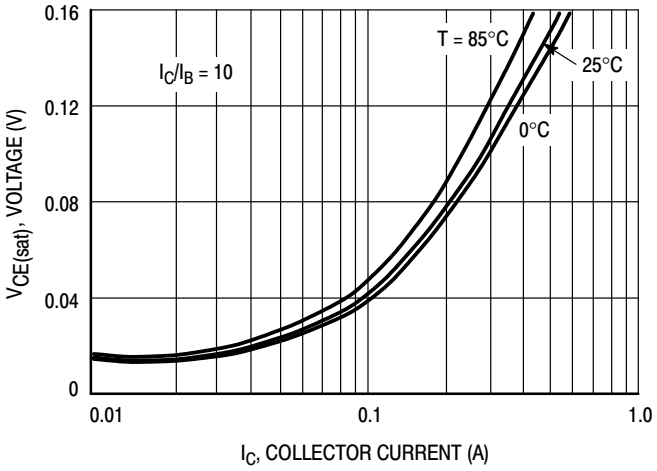


Figure 6. Collector–Emitter Saturation Voltage

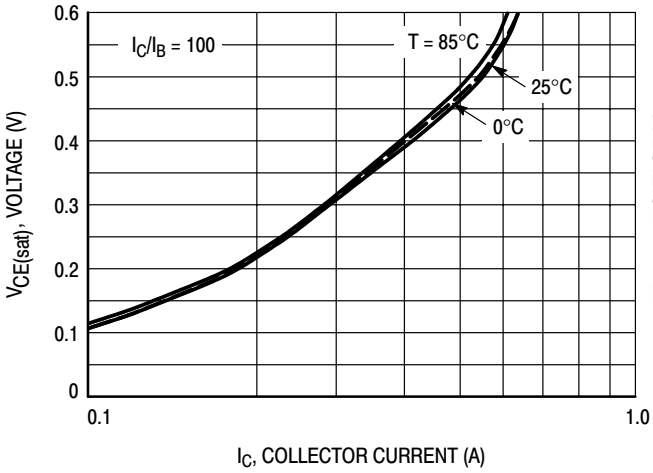


Figure 7. Collector–Emitter Saturation Voltage

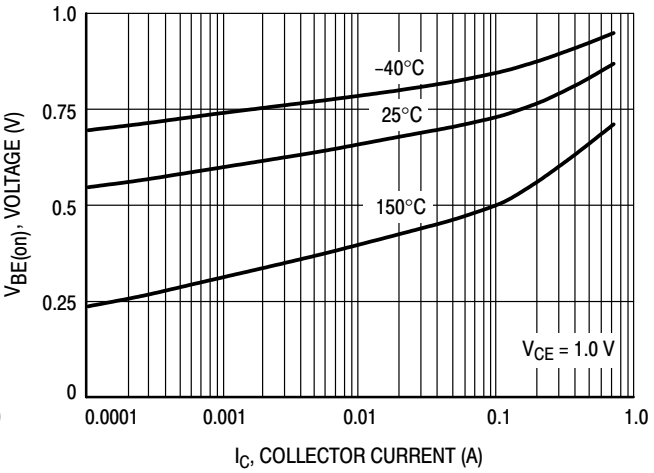


Figure 8. $V_{BE(on)}$ Voltage

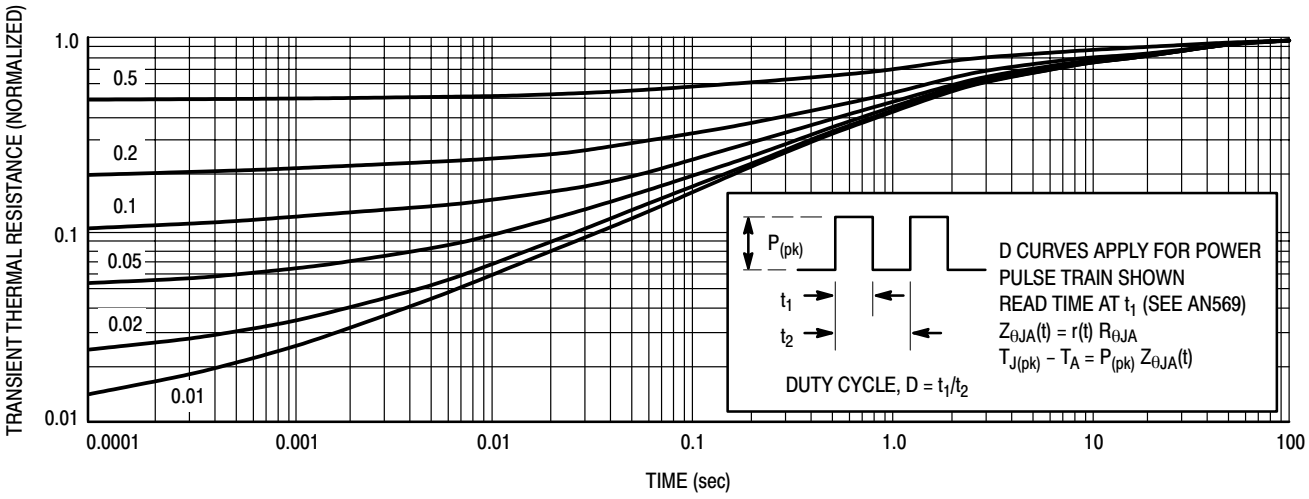
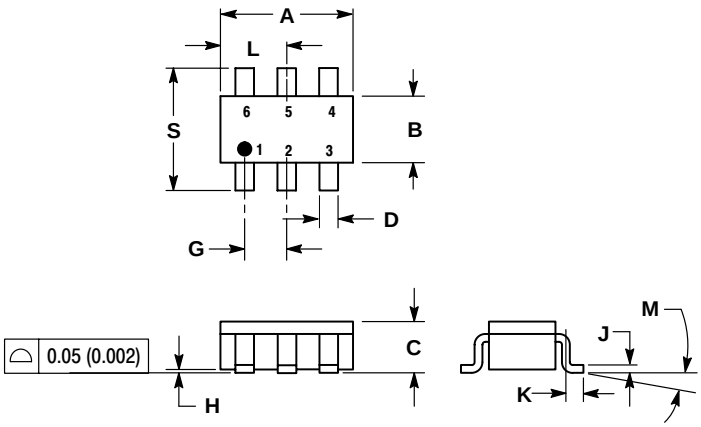


Figure 9. Thermal Response Curve

PACKAGE DIMENSIONS

SC–74
CASE 318F–03
ISSUE F



NOTES:
1. DIMENSIONING AND TOLERANCING PER ANSI Y14.5M, 1982.
2. CONTROLLING DIMENSION: INCH.
3. MAXIMUM LEAD THICKNESS INCLUDES LEAD FINISH THICKNESS. MINIMUM LEAD THICKNESS IS THE MINIMUM THICKNESS OF BASE MATERIAL.
4. 318F–01 AND –02 OBSOLETE. NEW STANDARD 318F–03.

	INCHES		MILLIMETERS	
DIM	MIN	MAX	MIN	MAX
A	0.1142	0.1220	2.90	3.10
B	0.0512	0.0669	1.30	1.70
C	0.0354	0.0433	0.90	1.10
D	0.0098	0.0197	0.25	0.50
G	0.0335	0.0413	0.85	1.05
H	0.0005	0.0040	0.013	0.100
J	0.0040	0.0102	0.10	0.26
K	0.0079	0.0236	0.20	0.60
L	0.0493	0.0649	1.25	1.65
M	0 °	10 °	0 °	10 °
S	0.0985	0.1181	2.50	3.00

STYLE 2:
PIN 1. NO CONNECTION
2. COLLECTOR
3. EMITTER
4. NO CONNECTION
5. COLLECTOR
6. BASE

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PUBLICATION ORDERING INFORMATION

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