General Purpose Transistors

NPN Bipolar Junction Transistor

Features

• Pb-Free Package is Available

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	Ic	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	P _D P _D	342 178	mW mW
(Note 1)	$R_{\theta JA}$	366	°C/W
Total Power Dissipation @ T _C = 25°C Total Power Dissipation @ T _C = 85°C Thermal Resistance, Junction—to–Ambient	P _D P _D	665 346	mW mW
(Note 2)	$R_{\theta JA}$	188	°C/W
Operating and Storage Temperature Range	T _J , T _{stg}	-55 to +150	°C

Maximum ratings are those values beyond which device damage can occur. Maximum ratings applied to the device are individual stress limit values (not normal operating conditions) and are not valid simultaneously. If these limits are exceeded, device functional operation is not implied, damage may occur and reliability may be affected.

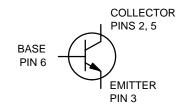
- Minimum FR-4 or G-10 PCB, Operating to Steady State.
 Mounted onto a 2" square FR-4 Board (1" sq 2 oz Cu 0.06" thick single sided), Operating to Steady State.



ON Semiconductor®

http://onsemi.com

0.7 AMPS 30 VOLTS - V(BR)CEO 342 mW





TSOP-6/SC-74 **CASE 318F** STYLE 2

MARKING DIAGRAM



DC = Specific Device Code

= Date Code*

= Pb-Free Package

(Note: Microdot may be in either location) *Date Code orientation may vary depending upon manufacturing location.

ORDERING INFORMATION

Device	Package	Shipping [†]
MMBT2132T3	TSOP-6	10,000/Tape & Reel
MMBT2132T3G	TSOP-6 (Pb-Free)	10,000/Tape & Reel

†For information on tape and reel specifications, including part orientation and tape sizes, please refer to our Tape and Reel Packaging Specifications Brochure, BRD8011/D.

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

Character	Symbol	Min	Тур	Max	Unit	
OFF CHARACTERISTICS					•	
Collector - Base Breakdown Voltage	$(I_C = 100 \mu Adc)$	V _{(BR)CBO}	40	_	_	Vdc
Collector - Emitter Breakdown Voltage	V _{(BR)CEO}	30	_	_	Vdc	
Emitter-Base Breakdown Voltage	(I _E = 100 μAdc)	V _{(BR)EBO}	5.0	_	_	Vdc
Collector Cutoff Current (V _{CB}	$(V_{CB} = 25 \text{ Vdc}, I_E = 0 \text{ Adc})$ $I_E = 25 \text{ Vdc}, I_E = 0 \text{ Adc}, T_A = 125^{\circ}\text{C})$	I _{CBO}	-	- -	1.0 10	μAdc
Emitter Cutoff Current (V _{EB} = 5.0 Vdc, I _C =		I _{EBO}	-	_	10	μAdc
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	V _{BE(on)}	-	_	1.0	Vdc	

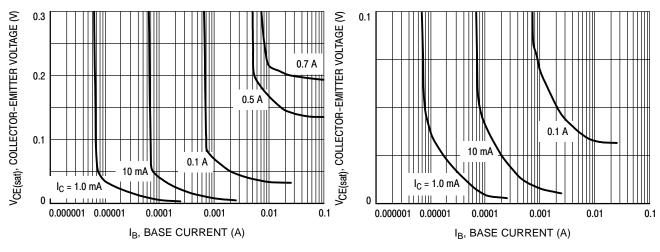


Figure 1. Collector Saturation Region

Figure 2. Collector Saturation Region

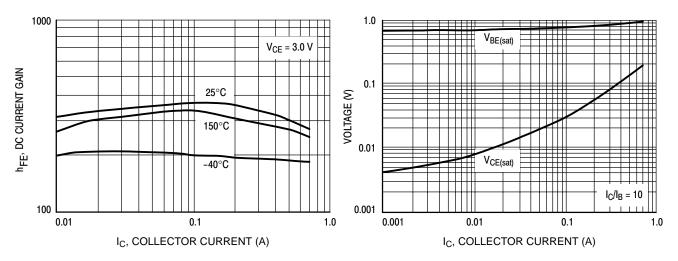


Figure 3. DC Current Gain

Figure 4. "ON" Voltages

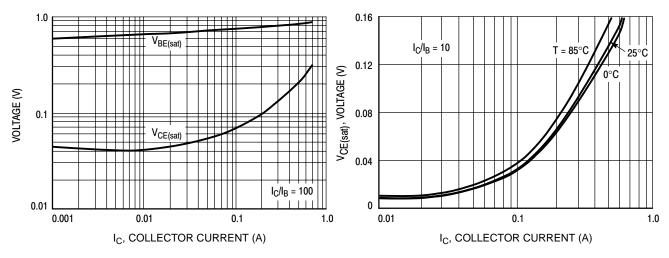


Figure 5. "ON" Voltages

Figure 6. Collector-Emitter Saturation Voltage

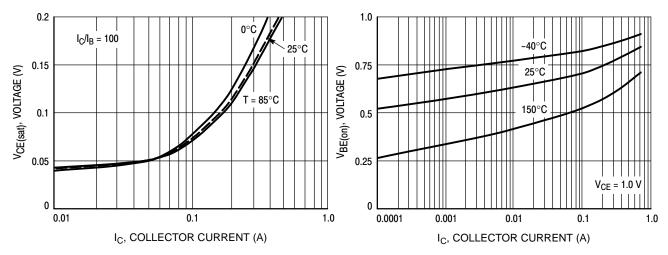


Figure 7. Collector-Emitter Saturation Voltage

Figure 8. V_{BE(on)} Voltage

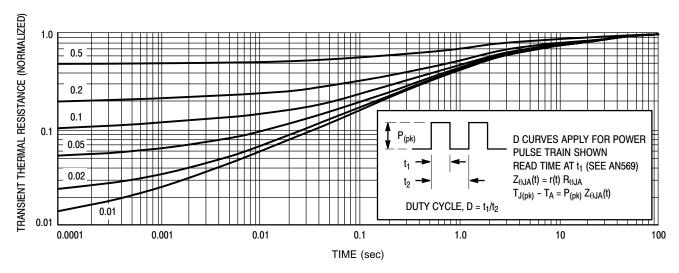
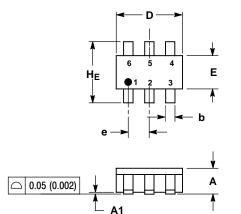
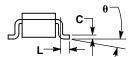


Figure 9. Thermal Response Curve

PACKAGE DIMENSIONS

SC-74 CASE 318F-05 ISSUE L





- NOTES:
 1. DIMENSIONING AND TOLERANCING PER ANSI Y14.5M, 1982.
 CONTROLLING DIMENSION: INCH.
 MAXIMUM LEAD THICKNESS INCLUDES

 - LEAD FINISH THICKNESS. MINIMUM LEAD THICKNESS IS THE MINIMUM THICKNESS
- OF BASE MATERIAL. 318F-01, -02, -03 OBSOLETE. NEW STANDARD 318F-04.

	MILLIMETERS			INCHES		
DIM	MIN	NOM	MAX	MIN	NOM	MAX
Α	0.90	1.00	1.10	0.035	0.039	0.043
A1	0.01	0.06	0.10	0.001	0.002	0.004
b	0.25	0.37	0.50	0.010	0.015	0.020
С	0.10	0.18	0.26	0.004	0.007	0.010
D	2.90	3.00	3.10	0.114	0.118	0.122
E	1.30	1.50	1.70	0.051	0.059	0.067
е	0.85	0.95	1.05	0.034	0.037	0.041
L	0.20	0.40	0.60	0.008	0.016	0.024
HE	2.50	2.75	3.00	0.099	0.108	0.118
θ	0°	_	10°	0°	-	10°

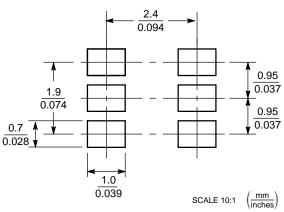
STYLE 2:

- PIN 1. NO CONNECTION 2. COLLECTOR 3. EMITTER

 - 4. NO CONNECTION 5. COLLECTOR

 - 6 BASE

SOLDERING FOOTPRINT*



*For additional information on our Pb-Free strategy and soldering details, please download the ON Semiconductor Soldering and Mounting Techniques Reference Manual, SOLDERRM/D.

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