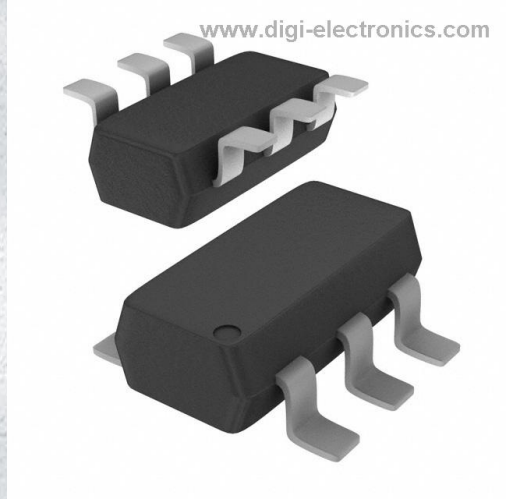
MMBT2132T3 Datasheet



https://www.DiGi-Electronics.com

DiGi Electronics Part Number	MMBT2132T3-DG
Manufacturer	onsemi
Manufacturer Product Number	MMBT2132T3
Description	TRANS NPN 30V 0.7A SC74
Detailed Description	Bipolar (BJT) Transistor NPN 30 V 700 mA 342 mW Surface Mount SC-74

Tel: +00 852-30501935

RFQ Email: Info@DiGi-Electronics.com

Purchase and inquiry

Manufacturer Product Number:	Manufacturer:
MMBT2132T3	onsemi
Series:	Product Status:
-	Obsolete
Transistor Type:	Current - Collector (Ic) (Max):
NPN	700 mA
Voltage - Collector Emitter Breakdown (Max):	Vce Saturation (Max) @ Ib, Ic:
30 V	400mV @ 70mA, 700mA
Current - Collector Cutoff (Max):	DC Current Gain (hFE) (Min) @ Ic, Vce:
1µA (ICBO)	150 @ 100mA, 3V
Power - Max:	Frequency - Transition:
342 mW	-
Operating Temperature:	Mounting Type:
-55°C ~ 150°C (TJ)	Surface Mount
Package / Case:	Supplier Device Package:
SC-74, SOT-457	SC-74
Base Product Number:	
MMBT2132	

Environmental & Export classification

RoHS Status:	Moisture Sensitivity Level (MSL):
RoHS non-compliant	1 (Unlimited)
REACH Status:	ECCN:
REACH Unaffected	EAR99
HTSUS:	
8541.21.0095	

MMBT2132T3

General Purpose Transistors

NPN Bipolar Junction Transistor

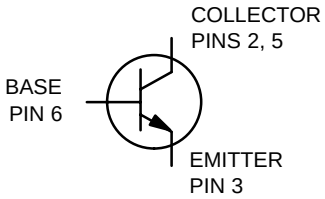
ON Semiconductor®

http://onsemi.com

Features

- Pb−Free Package is Available

0.7 AMPS
30 VOLTS − $V_{(BR)CEO}$
342 mW



TSOP−6/SC−74
CASE 318F
STYLE 2

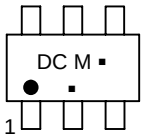
MAXIMUM RATINGS (T_C = 25°C unless otherwise noted)

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

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.

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.

MARKING DIAGRAM



DC = Specific Device Code
M = 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.

MMBT2132T3

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

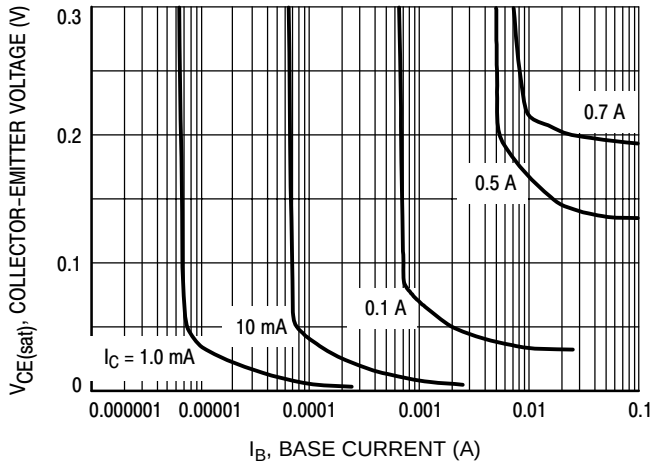


Figure 1. Collector Saturation Region

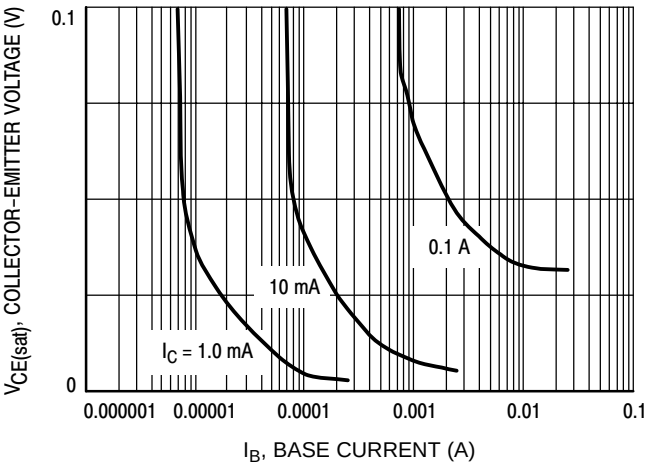


Figure 2. Collector Saturation Region

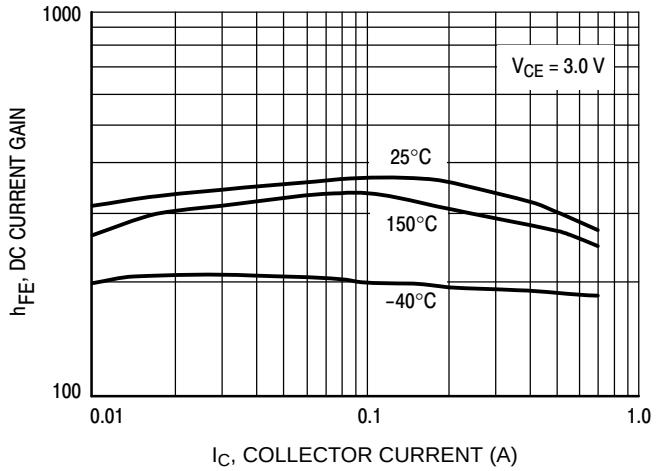


Figure 3. DC Current Gain

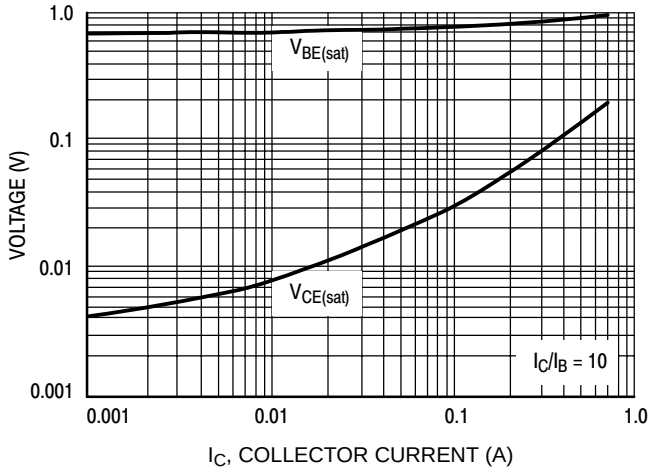


Figure 4. “ON” Voltages

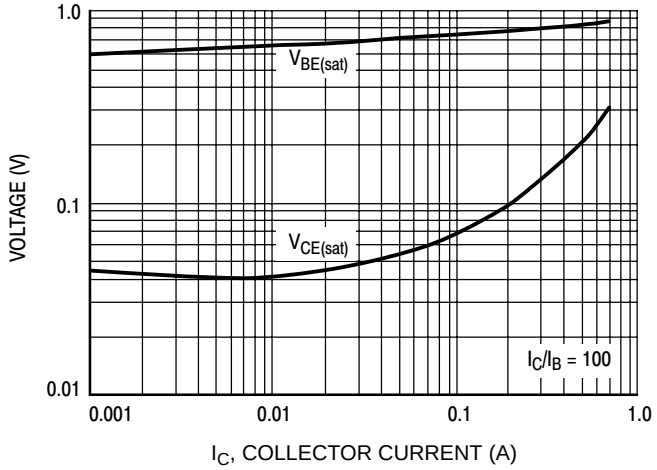


Figure 5. “ON” Voltages

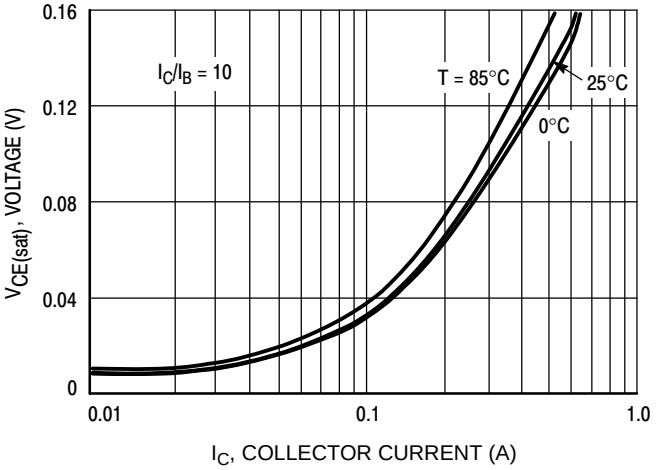


Figure 6. Collector−Emitter Saturation Voltage

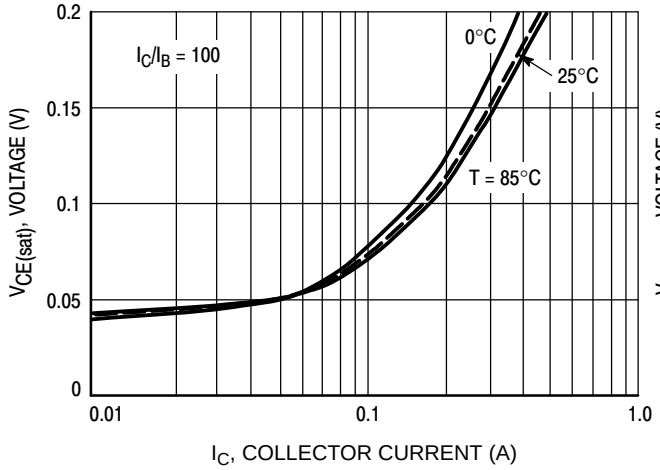


Figure 7. Collector−Emitter Saturation Voltage

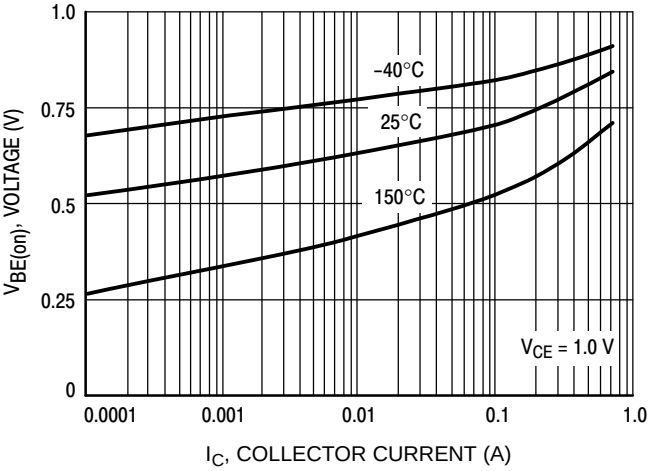


Figure 8. $V_{BE(on)}$ Voltage

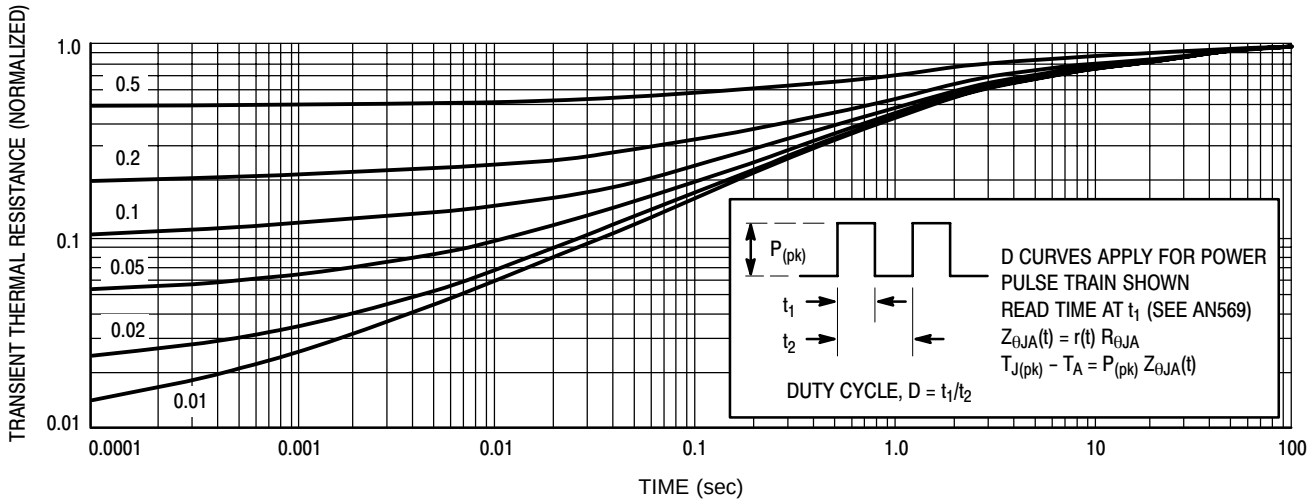


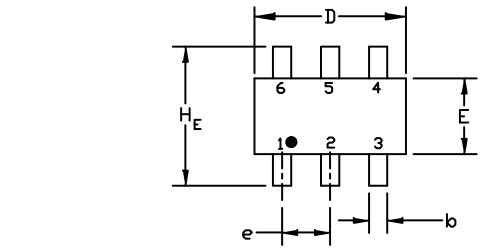
Figure 9. Thermal Response Curve

MECHANICAL CASE OUTLINE
PACKAGE DIMENSIONS

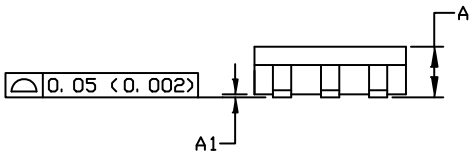
SCALE 2:1

SC−74
CASE 318F
ISSUE P

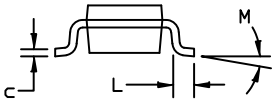
DATE 07 OCT 2021



TOP VIEW



SIDE VIEW

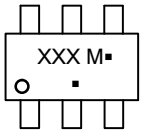


END VIEW

NOTES:
1. DIMENSIONING AND TOLERANCING PER ASME Y14.5M, 1994
2. CONTROLLING DIMENSION: INCHES
3. MAXIMUM LEAD THICKNESS INCLUDES LEAD FINISH THICKNESS. MINIMUM LEAD THICKNESS IS THE MINIMUM THICKNESS OF THE BASE MATERIAL.

	MILLIMETERS			INCHES		
DIM	MIN.	NOM.	MAX.	MIN.	NOM.	MAX.
A	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
c	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
e	0.85	0.95	1.05	0.034	0.037	0.041
H_E	2.50	2.75	3.00	0.099	0.108	0.118
L	0.20	0.40	0.60	0.008	0.016	0.024
M	0°	---	10°	0°	---	10°

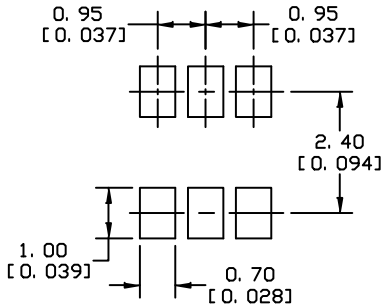
GENERIC MARKING DIAGRAM*



XXX = Specific Device Code
M = Date Code
▪ = Pb−Free Package

(Note: Microdot may be in either location)

*This information is generic. Please refer to device data sheet for actual part marking. Pb−Free indicator, “G” or microdot “▪”, may or may not be present. Some products may not follow the Generic Marking.



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

SOLDERING FOOTPRINT

STYLE 1:
PIN 1. CATHODE
2. ANODE
3. CATHODE
4. CATHODE
5. ANODE
6. CATHODE

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

STYLE 3:
PIN 1. EMITTER 1
2. BASE 1
3. COLLECTOR 2
4. EMITTER 2
5. BASE 2
6. COLLECTOR 1

STYLE 4:
PIN 1. COLLECTOR 2
2. EMITTER 1/EMITTER 2
3. COLLECTOR 1
4. EMITTER 3
5. BASE 1/BASE 2/COLLECTOR 3
6. BASE 3

STYLE 5:
PIN 1. CHANNEL 1
2. ANODE
3. CHANNEL 2
4. CHANNEL 3
5. CATHODE
6. CHANNEL 4

STYLE 6:
PIN 1. CATHODE
2. ANODE
3. CATHODE
4. CATHODE
5. CATHODE
6. CATHODE

STYLE 7:
PIN 1. SOURCE 1
2. GATE 1
3. DRAIN 2
4. SOURCE 2
5. GATE 2
6. DRAIN 1

STYLE 8:
PIN 1. EMITTER 1
2. BASE 2
3. COLLECTOR 2
4. EMITTER 2
5. BASE 1
6. COLLECTOR 1

STYLE 9:
PIN 1. EMITTER 2
2. BASE 2
3. COLLECTOR 1
4. EMITTER 1
5. BASE 1
6. COLLECTOR 2

STYLE 10:
PIN 1. ANODE/CATHODE
2. BASE
3. EMITTER
4. COLLECTOR
5. ANODE
6. CATHODE

STYLE 11:
PIN 1. EMITTER
2. BASE
3. ANODE/CATHODE
4. ANODE
5. CATHODE
6. COLLECTOR

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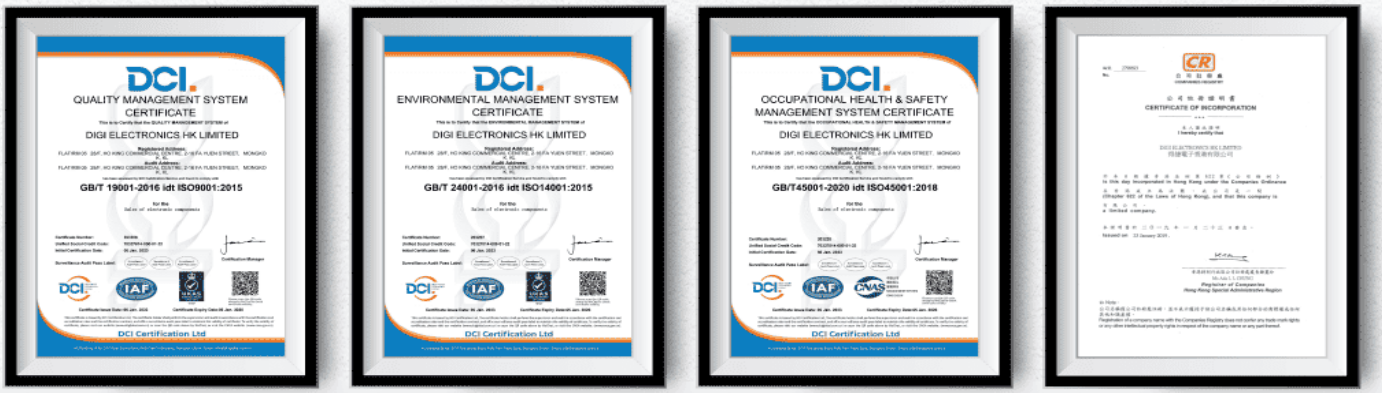

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