



**THE DATASHEET OF  
2SC4081RT1**



# 2SC4081RT1

## General Purpose Amplifier Transistor

### NPN Surface Mount

#### Features

- Moisture Sensitivity Level: 1
- Pb-Free Package is Available

#### MAXIMUM RATINGS (T<sub>A</sub> = 25°C)

Rating	Symbol	Value	Unit
Collector-Base Voltage	V <sub>(BR)CBO</sub>	60	Vdc
Collector-Emitter Voltage	V <sub>(BR)CEO</sub>	50	Vdc
Emitter-Base Voltage	V <sub>(BR)EBO</sub>	7.0	Vdc
Collector Current - Continuous	I <sub>C</sub>	100	mAdc
Collector Current - Peak	I <sub>C(P)</sub>	200	mAdc

#### THERMAL CHARACTERISTICS

Characteristic	Symbol	Max	Unit
Power Dissipation	P <sub>D</sub>	200	mW
Junction Temperature	T <sub>J</sub>	150	°C
Storage Temperature	T <sub>stg</sub>	-55 to +150	°C

Stresses exceeding Maximum Ratings may damage the device. Maximum Ratings are stress ratings only. Functional operation above the Recommended Operating Conditions is not implied. Extended exposure to stresses above the Recommended Operating Conditions may affect device reliability.

#### ELECTRICAL CHARACTERISTICS (T<sub>A</sub> = 25°C unless otherwise noted)

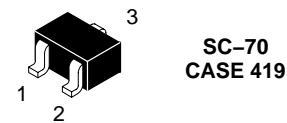
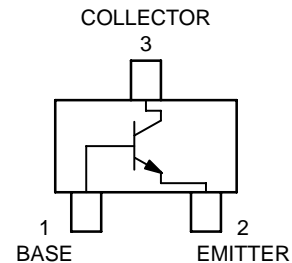
Characteristic	Symbol	Min	Max	Unit
Collector-Emitter Breakdown Voltage (I <sub>C</sub> = 2.0 mAdc, I <sub>B</sub> = 0)	V <sub>(BR)CEO</sub>	50	-	Vdc
Collector-Base Breakdown Voltage (I <sub>C</sub> = 10 μAdc, I <sub>E</sub> = 0)	V <sub>(BR)CBO</sub>	60	-	Vdc
Emitter-Base Breakdown Voltage (I <sub>E</sub> = 10 μAdc, I <sub>C</sub> = 0)	V <sub>(BR)EBO</sub>	7.0	-	Vdc
Collector-Base Cutoff Current (V <sub>CB</sub> = 60 Vdc, I <sub>E</sub> = 0)	I <sub>CBO</sub>	-	0.1	μAdc
Collector-Emitter Cutoff Current (V <sub>CE</sub> = 10 Vdc, I <sub>B</sub> = 0)	I <sub>CEO</sub>	-	0.1	μAdc
(V <sub>CE</sub> = 30 Vdc, I <sub>B</sub> = 0)		-	2.0	μAdc
(V <sub>CE</sub> = 30 Vdc, I <sub>B</sub> = 0, T <sub>A</sub> = 80°C)		-	1.0	mAdc
DC Current Gain (Note 1) (V <sub>CE</sub> = 6.0 Vdc, I <sub>C</sub> = 2.0 mAdc)	h <sub>FE</sub>	180	390	-
Collector-Emitter Saturation Voltage (I <sub>C</sub> = 100 mAdc, I <sub>B</sub> = 10 mAdc)	V <sub>CE(sat)</sub>	-	0.5	Vdc

1. Pulse Test: Pulse Width ≤ 300 μs, D.C. ≤ 2%.

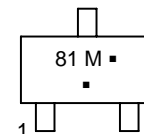


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#### MARKING DIAGRAM



81 = 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†
2SC4081RT1	SC-70	3000/Tape & Reel
2SC4081RT1G	SC-70 (Pb-Free)	3000/Tape & Reel

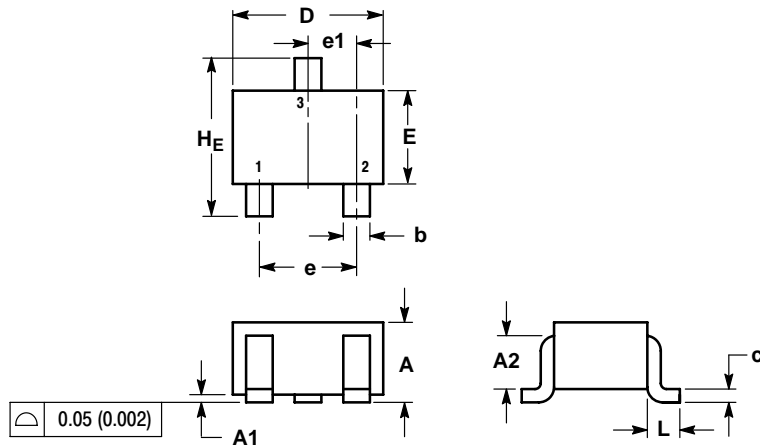
\*The "T1" suffix refers to a 7 inch reel.

†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.

# 2SC4081RT1

## PACKAGE DIMENSIONS

SC-70 (SOT-323)  
CASE 419-04  
ISSUE M

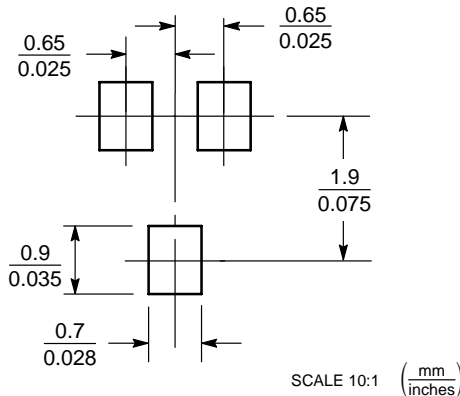


NOTES:

- DIMENSIONING AND TOLERANCING PER ANSI Y14.5M, 1982.
- CONTROLLING DIMENSION: INCH.

DIM	MILLIMETERS			INCHES		
	MIN	NOM	MAX	MIN	NOM	MAX
A	0.80	0.90	1.00	0.032	0.035	0.040
A1	0.00	0.05	0.10	0.000	0.002	0.004
A2	0.7 REF			0.028 REF		
b	0.30	0.35	0.40	0.012	0.014	0.016
c	0.10	0.18	0.25	0.004	0.007	0.010
D	1.80	2.10	2.20	0.071	0.083	0.087
E	1.15	1.24	1.35	0.045	0.049	0.053
e	1.20	1.30	1.40	0.047	0.051	0.055
e1	0.65 BSC			0.026 BSC		
L	0.425 REF			0.017 REF		
HE	2.00	2.10	2.40	0.079	0.083	0.095

### 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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