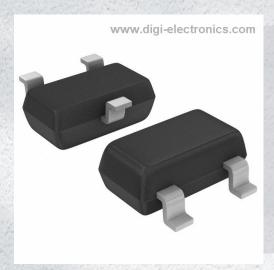


# **MUN2140T1G Datasheet**



https://www.DiGi-Electronics.com

DiGi Electronics Part Number MU

MUN2140T1G-DG

Manufacturer

onsemi

Manufacturer Product Number

MUN2140T1G

Description

TRANS PREBIAS PNP 50V 0.1A SC59

**Detailed Description** 

Pre-Biased Bipolar Transistor (BJT) PNP - Pre-Biase d 50 V 100 mA 230 mW Surface Mount SC-59



Tel: +00 852-30501935

RFQ Email: Info@DiGi-Electronics.com

DiGi is a global authorized distributor of electronic components.



# **Purchase and inquiry**

Manufacturer Product Number:	Manufacturer:
MUN2140T1G	onsemi
Series:	Product Status:
	Active
Transistor Type:	Current - Collector (Ic) (Max):
PNP - Pre-Biased	100 mA
Voltage - Collector Emitter Breakdown (Max):	Resistor - Base (R1):
50 V	47 kOhms
DC Current Gain (hFE) (Min) @ Ic, Vce:	Vce Saturation (Max) @ lb, lc:
120 @ 5mA, 10V	250mV @ 1mA, 10mA
Current - Collector Cutoff (Max):	Power - Max:
500nA	230 mW
Mounting Type:	Package / Case:
Surface Mount	TO-236-3, SC-59, SOT-23-3
Supplier Device Package:	Base Product Number:
SC-59	MUN2140

# **Environmental & Export classification**

8541.21.0095

RoHS Status:	Moisture Sensitivity Level (MSL):
ROHS3 Compliant	1 (Unlimited)
REACH Status:	ECCN:
REACH Unaffected	EAR99
HTSUS:	

# **Digital Transistors (BRT)** $R1 = 47 k\Omega$ , $R2 = \infty k\Omega$

### **PNP Transistors with Monolithic Bias Resistor Network**

This series of digital transistors is designed to replace a single device and its external resistor bias network. The Bias Resistor Transistor (BRT) contains a single transistor with a monolithic bias network consisting of two resistors; a series base resistor and a baseemitter resistor. The BRT eliminates these individual components by integrating them into a single device. The use of a BRT can reduce both system cost and board space.

#### **Features**

- Simplifies Circuit Design
- Reduces Board Space
- Reduces Component Count
- S and NSV Prefix for Automotive and Other Applications Requiring Unique Site and Control Change Requirements; AEC-Q101 Qualified and PPAP Capable
- These Devices are Pb-Free, Halogen Free/BFR Free and are RoHS Compliant

#### **MAXIMUM RATINGS** $(T_A = 25^{\circ}C)$

Rating	Symbol	Max	Unit
Collector-Base Voltage	V <sub>CBO</sub>	50	Vdc
Collector-Emitter Voltage	$V_{CEO}$	50	Vdc
Collector Current – Continuous	I <sub>C</sub>	100	mAdc
Input Forward Voltage	V <sub>IN(fwd)</sub>	40	Vdc
Input Reverse Voltage	V <sub>IN(rev)</sub>	5	Vdc

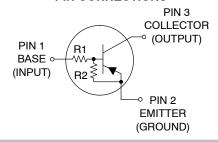
Stresses exceeding those listed in the Maximum Ratings table may damage the device. If any of these limits are exceeded, device functionality should not be assumed, damage may occur and reliability may be affected.

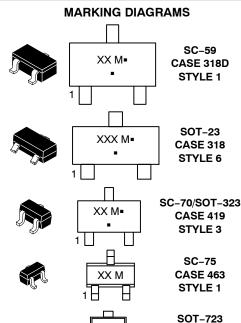


### ON Semiconductor®

www.onsemi.com

### PIN CONNECTIONS





XXX = Specific Device Code

IX MIL 1

= Date Code\* M = Pb-Free Package

(Note: Microdot may be in either location)

\*Date Code orientation may vary depending upon manufacturing location.

### ORDERING INFORMATION

See detailed ordering, marking, and shipping information in the package dimensions section on page 2 of this data sheet.

CASE 631AA

STYLE 1 SOT-1123

CASE 524AA STYLE 1

**Table 1. ORDERING INFORMATION** 

Device	Part Marking	Package	Shipping <sup>†</sup>
MUN2140T1G	6T	SC-59 (Pb-Free)	3000 / Tape & Reel
MMUN2140LT1G	ACF	SOT-23 (Pb-Free)	3000 / Tape & Reel
MUN5140T1G	6R	SC-70/SOT-323 (Pb-Free)	3000 / Tape & Reel
DTA144TET1G	6Q	SC-75 (Pb-Free)	3000 / Tape & Reel
DTA144TM3T5G	6T	SOT-723 (Pb-Free)	8000 / Tape & Reel
NSBA144TF3T5G	T (180°)*	SOT-1123 (Pb-Free)	8000 / Tape & Reel

<sup>†</sup>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.

<sup>\* (</sup>xx°) = Degree rotation in the clockwise direction.

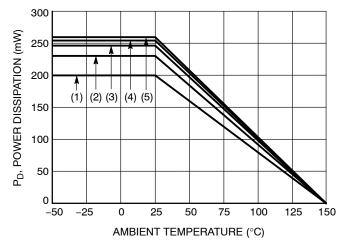


Figure 1. Derating Curve

- (1) SC-75 and SC-70/SOT323; Minimum Pad
- (2) SC-59; Minimum Pad
- (3) SOT-23; Minimum Pad
- (4) SOT-1123; 100 mm<sup>2</sup>, 1 oz. copper trace
- (5) SOT-723; Minimum Pad

Table 2. THERMAL CHARACTERISTICS

Characteristic		Symbol	Max	Unit
THERMAL CHARACTERISTICS (SC-59) (MUN2140)				
Total Device Dissipation $T_A = 25^{\circ}C$ Derate above 25°C	(Note 1) (Note 2) (Note 1) (Note 2)	P <sub>D</sub>	230 338 1.8 2.7	mW mW/°C
Thermal Resistance, Junction to Ambient	(Note 1) (Note 2)	$R_{ heta JA}$	540 370	°C/W
Thermal Resistance, Junction to Lead	(Note 1) (Note 2)	$R_{ heta JL}$	264 287	°C/W
Junction and Storage Temperature Range		T <sub>J</sub> , T <sub>stg</sub>	-55 to +150	°C
THERMAL CHARACTERISTICS (SOT-23) (MMUN2140L)				
Total Device Dissipation $T_A = 25^{\circ}C$ Derate above 25°C	(Note 1) (Note 2) (Note 1) (Note 2)	P <sub>D</sub>	246 400 2.0 3.2	mW mW/°C
Thermal Resistance, Junction to Ambient	(Note 1) (Note 2)	$R_{ heta JA}$	508 311	°C/W
Thermal Resistance, Junction to Lead	(Note 1) (Note 2)	$R_{ hetaJL}$	174 208	°C/W
Junction and Storage Temperature Range		T <sub>J</sub> , T <sub>stg</sub>	-55 to +150	°C
THERMAL CHARACTERISTICS (SC-70/SOT-323) (MUN5140)				
Total Device Dissipation $T_A = 25^{\circ}C$ Derate above 25°C	(Note 1) (Note 2) (Note 1) (Note 2)	P <sub>D</sub>	202 310 1.6 2.5	mW mW/°C
Thermal Resistance, Junction to Ambient	(Note 1) (Note 2)	$R_{\thetaJA}$	618 403	°C/W
Thermal Resistance, Junction to Lead	(Note 1) (Note 2)	$R_{ heta JL}$	280 332	°C/W
Junction and Storage Temperature Range		T <sub>J</sub> , T <sub>stg</sub>	-55 to +150	°C
THERMAL CHARACTERISTICS (SC-75) (DTA144TE)				
Total Device Dissipation $T_A = 25^{\circ}C$ Derate above 25°C	(Note 1) (Note 2) (Note 1) (Note 2)	P <sub>D</sub>	200 300 1.6 2.4	mW mW/°C
Thermal Resistance, Junction to Ambient	(Note 1) (Note 2)	$R_{ heta JA}$	600 400	°C/W
Junction and Storage Temperature Range		T <sub>J</sub> , T <sub>stg</sub>	-55 to +150	°C
THERMAL CHARACTERISTICS (SOT-723) (DTA144TM3)				
Total Device Dissipation $T_A = 25^{\circ}C$ Derate above 25°C	(Note 1) (Note 2) (Note 1) (Note 2)	P <sub>D</sub>	260 600 2.0 4.8	mW mW/°C
Thermal Resistance, Junction to Ambient	(Note 1) (Note 2)	$R_{ heta JA}$	480 205	°C/W
Junction and Storage Temperature Range		T <sub>J</sub> , T <sub>stg</sub>	-55 to +150	°C

- 1. FR-4 @ Minimum Pad.
- FR-4 @ 1.0 x 1.0 Inch Pad.
   FR-4 @ 100 mm<sup>2</sup>, 1 oz. copper traces, still air.
   FR-4 @ 500 mm<sup>2</sup>, 1 oz. copper traces, still air.

**Table 2. THERMAL CHARACTERISTICS** 

Characteristic	Symbol	Max	Unit				
THERMAL CHARACTERISTICS (SOT-1123) (NSBA144TF3)							
Total Device Dissipation $T_A = 25^{\circ}C$ Derate above 25°C	(Note 3) (Note 4) (Note 3) (Note 4)	P <sub>D</sub>	254 297 2.0 2.4	mW mW/°C			
Thermal Resistance, Junction to Ambient	(Note 3) (Note 4)	$R_{ hetaJA}$	493 421	°C/W			
Thermal Resistance, Junction to Lead	(Note 3)	$R_{ hetaJL}$	193	°C/W			
Junction and Storage Temperature Range		T <sub>J</sub> , T <sub>stg</sub>	-55 to +150	°C			

- FR-4 @ Minimum Pad.
   FR-4 @ 1.0 x 1.0 Inch Pad.
- FR-4 @ 100 mm<sup>2</sup>, 1 oz. copper traces, still air.
   FR-4 @ 500 mm<sup>2</sup>, 1 oz. copper traces, still air.

Table 3. ELECTRICAL CHARACTERISTICS (T<sub>A</sub> = 25°C, unless otherwise noted)

Characteristic	Symbol	Min	Тур	Max	Unit
OFF CHARACTERISTICS			•		
Collector–Base Cutoff Current $(V_{CB} = 50 \text{ V}, I_E = 0)$	I <sub>CBO</sub>	-	_	100	nAdc
Collector–Emitter Cutoff Current $(V_{CE} = 50 \text{ V}, I_B = 0)$	I <sub>CEO</sub>	-	_	500	nAdc
Emitter-Base Cutoff Current (V <sub>EB</sub> = 6.0 V, I <sub>C</sub> = 0)	I <sub>EBO</sub>	-	_	0.2	mAdc
Collector–Base Breakdown Voltage ( $I_C = 10 \mu A, I_E = 0$ )	V <sub>(BR)</sub> CBO	50	_	-	Vdc
Collector-Emitter Breakdown Voltage (Note 5) (I <sub>C</sub> = 2.0 mA, I <sub>B</sub> = 0)	V <sub>(BR)</sub> CEO	50	_	-	Vdc
ON CHARACTERISTICS			•		
DC Current Gain (Note 5) (I <sub>C</sub> = 5.0 mA, V <sub>CE</sub> = 10 V)	h <sub>FE</sub>	120	250	-	
Collector–Emitter Saturation Voltage (Note 5) (I <sub>C</sub> = 10 mA, I <sub>B</sub> = 1.0 mA)	V <sub>CE(sat)</sub>	-	_	0.25	Vdc
Input Voltage (off) ( $V_{CE} = 5.0 \text{ V}, I_{C} = 100 \mu\text{A}$ )	V <sub>i(off)</sub>	-	0.6	0.5	Vdc
Input Voltage (on) (V <sub>CE</sub> = 0.3 V, I <sub>C</sub> = 5.0 mA)	V <sub>i(on)</sub>	4.0	2.6	-	Vdc
Output Voltage (on) (V <sub>CC</sub> = 5.0 V, V <sub>B</sub> = 3.5 V, R <sub>L</sub> = 1.0 k $\Omega$ )	V <sub>OL</sub>	-	-	0.2	Vdc
Output Voltage (off) ( $V_{CC} = 5.0 \text{ V}, V_B = 0.25 \text{ V}, R_L = 1.0 \text{ k}\Omega$ )	V <sub>OH</sub>	4.9	-	-	Vdc
Input Resistor	R1	32.9	47	61.1	kΩ
Resistor Ratio	R <sub>1</sub> /R <sub>2</sub>	-	_	_	

Product parametric performance is indicated in the Electrical Characteristics for the listed test conditions, unless otherwise noted. Product performance may not be indicated by the Electrical Characteristics if operated under different conditions.

Pulsed Condition: Pulse Width = 300 msec, Duty Cycle ≤ 2%.

# TYPICAL CHARACTERISTICS MUN2140, MMUN2140L, MUN5140, DTA144TM3

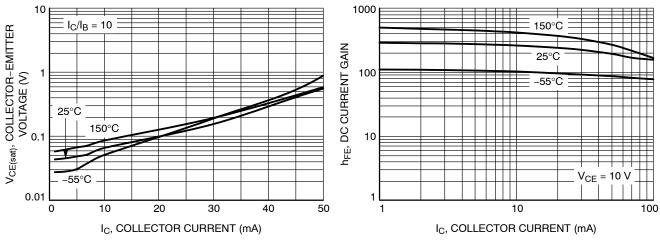


Figure 2. V<sub>CE(sat)</sub> vs. I<sub>C</sub>

Figure 3. DC Current Gain

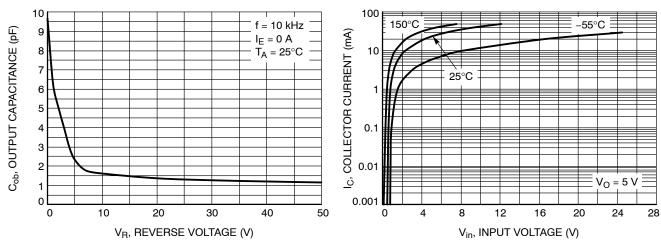


Figure 4. Output Capacitance

Figure 5. Output Current vs. Input Voltage

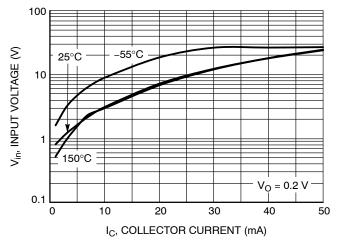


Figure 6. Input Voltage vs. Output Current



**MILLIMETERS** 

MIN

0.89

0.01

0.37

0.08

2.80

1.20

1.78

0.30

0.35

2.10

O°

NOM

1.00

0.06

0.44

0.14

2.90

1.30

1.90

0.43

0.54

2.40

\_\_\_

### PACKAGE DIMENSIONS



### SOT-23 (TO-236) 2.90x1.30x1.00 1.90P **CASE 318 ISSUE AU**

**DATE 14 AUG 2024** 

MAX

1.11

0.10

0.50

0.20

3.04

1.40

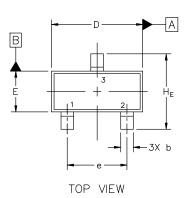
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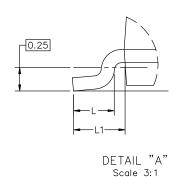
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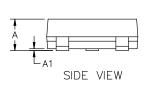
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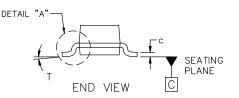
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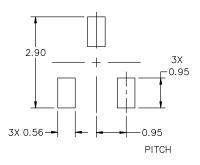
10°













DIM

Α

Α1

b

С

D

Ε

е L

L1

HE

Τ

- DIMENSIONING AND TOLERANCING 1.
- PER ASME Y14.5M, 2018. CONTROLLING DIMENSIONS: MILLIMETERS.
- MAXIMUM LEAD THICKNESS INCLUDES LEAD FINISH. MINIMUM LEAD THICKNESS IS THE MINIMUM THICKNESS OF THE
- BASE MATERIAL.
  DIMENSIONS D AND E DO NOT INCLUDE MOLD FLASH, PROTRUSIONS, OR GATE BURRS.

### **GENERIC MARKING DIAGRAM\***



XXX = Specific Device Code

= Date Code

= Pb-Free Package

### RECOMMENDED MOUNTING FOOTPRINT

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

### **STYLES ON PAGE 2**

DOCUMENT NUMBER:	98ASB42226B	Electronic versions are uncontrolled except when accessed directly from the Printed versions are uncontrolled except when stamped "CONTROLLED CO			
DESCRIPTION:	SOT-23 (TO-236) 2.90x1.3	0x1.00 1.90P	PAGE 1 OF 2		

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<sup>\*</sup>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.

### SOT-23 (TO-236) 2.90x1.30x1.00 1.90P CASE 318 ISSUE AU

DATE 14 AUG 2024

STYLE 1 THRU 5: CANCELLED	STYLE 6: PIN 1. BASE 2. EMITTER 3. COLLECTOR	STYLE 7:         STYLE 8:           PIN 1. EMITTER         PIN 1. ANOD           2. BASE         2. NO CC           3. COLLECTOR         3. CATHO	ONNECTION	
STYLE 9: PIN 1. ANODE 2. ANODE 3. CATHODE	STYLE 10: PIN 1. DRAIN 2. SOURCE 3. GATE	STYLE 11:         STYLE 12:           PIN 1.         ANODE         PIN 1.         CATHO           2.         CATHODE         2.         CATHO           3.         CATHODE-ANODE         3.         ANODO	ODE 2. DRAIN 2. GATE	
STYLE 15: PIN 1. GATE 2. CATHODE 3. ANODE	STYLE 16: PIN 1. ANODE 2. CATHODE 3. CATHODE	STYLE 17:         STYLE 18:           PIN 1. NO CONNECTION         PIN 1. NO CO           2. ANODE         2. CATHO           3. CATHODE         3. ANODO	ODE 2. ANODE 2. ANODE	
STYLE 21: PIN 1. GATE 2. SOURCE 3. DRAIN	STYLE 22: PIN 1. RETURN 2. OUTPUT 3. INPUT	STYLE 23:         STYLE 24:           PIN 1. ANODE         PIN 1. GATE           2. ANODE         2. DRAIN           3. CATHODE         3. SOURCE		CTION
STYLE 27: PIN 1. CATHODE 2. CATHODE 3. CATHODE	STYLE 28: PIN 1. ANODE 2. ANODE 3. ANODE			

DOCUMENT NUMBER:	98ASB42226B	Electronic versions are uncontrolled except when accessed directly from the Document Reportant Printed versions are uncontrolled except when stamped "CONTROLLED COPY" in red.			
DESCRIPTION:	SOT-23 (TO-236) 2.90x1.30x1.00 1.90P		PAGE 2 OF 2		

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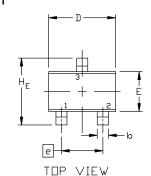
PACKAGE DIMENSIONS

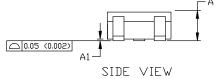


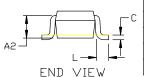
SC-70 (SOT-323) **CASE 419** ISSUE R

**DATE 11 OCT 2022** 









#### NOTES:

- 1. DIMENSIONING AND TOLERANCING PER ASME Y14.5M, 1982.
- 2. CONTROLLING DIMENSION: INCH

	MILLIMETERS				INCHES		
DIM	MIN.	N□M.	MAX.	MIN.	N□M.	MAX.	
Α	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		0.70 REF			0.028 BSC		
b	0.30	0.35	0.40	0.012	0.014	0.016	
С	0.10	0.18	0.25	0.004	0.007	0.010	
D	1.80	2.00	2.20	0.071	0.080	0.087	
E	1.15	1.24	1.35	0.045	0.049	0.053	
е	1.20	1.30	1.40	0.047	0.051	0.055	
e1	0.65 BSC				0.026 BS	C	
L	0.20	0.38	0.56	0.008	0.015	0.022	
HE	2.00	2.10	2.40	0.079	0.083	0.095	



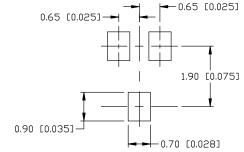


XX = Specific Device Code

= Date Code М

= Pb-Free Package

\*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 ID Semiconductor Soldering and Mounting Techniques Reference Manual, SDLDERRM/D.

SOLDERING FOOTPRINT

STYLE 1: CANCELLED	STYLE 2: PIN 1. ANODE 2. N.C. 3. CATHODE	STYLE 3: PIN 1. BASE 2. EMITTER 3. COLLECTOR	STYLE 4: PIN 1. CATHODE 2. CATHODE 3. ANODE	STYLE 5: PIN 1. ANODE 2. ANODE 3. CATHODE	
STYLE 6:	STYLE 7:	STYLE 8:	STYLE 9:	STYLE 10:	STYLE 11:
PIN 1. EMITTER	PIN 1. BASE	PIN 1. GATE	PIN 1. ANODE	PIN 1. CATHODE	PIN 1. CATHODE
2. BASE	2. EMITTER	2. SOURCE	2. CATHODE	2. ANODE	<ol><li>CATHODE</li></ol>
<ol><li>COLLECTOR</li></ol>	3. COLLECTOR	3. DRAIN	<ol><li>CATHODE-ANODE</li></ol>	3. ANODE-CATHODE	<ol><li>CATHODE</li></ol>

DOCUMENT NUMBER:	98ASB42819B	Electronic versions are uncontrolled except when accessed directly from the Document Repositor Printed versions are uncontrolled except when stamped "CONTROLLED COPY" in red.	
DESCRIPTION:	SC-70 (SOT-323)		PAGE 1 OF 1

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PACKAGE DIMENSIONS

#### SC75-3 1.60x0.80x0.80, 1.00P

**CASE 463 ISSUE H** 

**DATE 01 FEB 2024** 

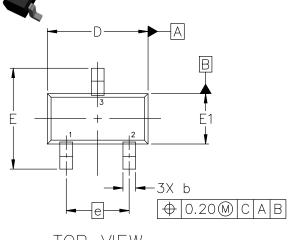
### NOTES:

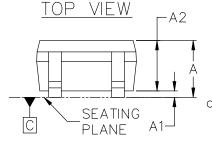
- DIMENSIONING AND TOLERANCING CONFORM TO ASME Y14.5-2018.
- ALL DIMENSION ARE IN MILLIMETERS.

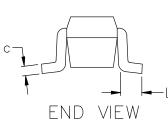
DIM	MILLIMETERS		
UIIVI	MIN.	NOM.	MAX.
А	0.70	0.80	0.90
A1	0.00	0.05	0.10
A2	0.80 REF.		
b	0.15	0.20	0.30
С	0.10	0.15	0.25
D	1.55	1.60	1.65
Е	1.50	1.60	1.70
E1	0.70	0.80	0.90
е	1.00 BSC		
L	0.10	0.15	0.20

-0.356

0.787







SIDE VIEW

### **GENERIC MARKING DIAGRAM\***



XX = Specific Device Code

Μ = Date Code

= Pb-Free Package

\*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.

STYLE 1:	
PIN 1. BASE	
2. EMITTER	

3 COLLECTOR

STYLE 2: PIN 1. ANODE 2. N/C 3. CATHODE STYLE 3: PIN 1. ANODE 2. ANODE 3 CATHODE RECOMMENDED MOUNTING FOOTPRINT\*

1.803

0.508

FOR ADDITIONAL INFORMATION ON OUR Pb-FREE STRATEGY AND SOLDERING DETAILS, PLEASE DOWNLOAD THE ON SEMICONDUCTOR SOLDERING AND MOUNTING TECHNIQUES REFERENCE MANUAL, SOLDERRM/D.

1.000

STYLE 4:	
PIN 1. CATHODE	
2 CATHODE	

3. ANODE

STYLE 5: PIN 1. GATE 2. SOURCE 3. DRAIN

**DOCUMENT NUMBER:** 

98ASB15184C

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**DESCRIPTION:** 

SC75-3 1.60x0.80x0.80, 1.00P

PAGE 1 OF 1

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PACKAGE DIMENSIONS

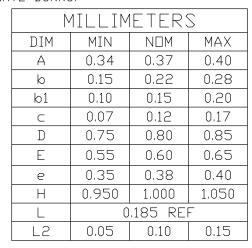


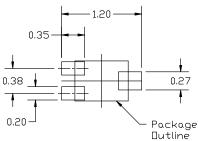
#### SOT-1123 0.80x0.60x0.37, 0.35P CASE 524AA ISSUE D

**DATE 18 JAN 2024** 

#### NOTES:

- 1. DIMENSIONING AND TOLERANCING PER ASME Y14.5M, 2018.
- CONTROLLING DIMENSION: MILLIMETERS. 2.
- MAXIMUM LEAD THICKNESS INCLUDES LEAD FINISH. MINIMUM LEAD THICKNESS IS THE MINIMUM THICKNESS OF BASE MATERIAL.
- DIMENSIONS D AND E DO NOT INCLUDE MOLD FLASH, PROTRUSIONS, OR GATE BURRS.

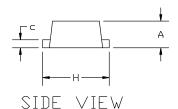


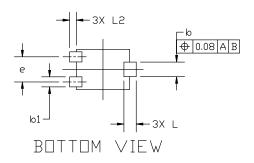


### RECOMMENDED MOUNTING FOOTPRINT

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

# В ТПР VIEW





### **GENERIC MARKING DIAGRAM\***



= Specific Device Code = Date Code

\*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.

STYLE 1:
PIN 1. BASE
<ol><li>EMITTER</li></ol>
3 COLLECTOR

STYLE 2: PIN 1. ANODE 2. N/C 3. CATHODE

STYLE 3: PIN 1. ANODE 2. ANODE 3. CATHODE

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

STYLE 5: PIN 1. GATE 2. SOURCE

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DESCRIPTION:	SOT-1123 0.80x0.60x0.37, 0.35P		PAGE 1 OF 1

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PACKAGE DIMENSIONS



#### SOT-723 1.20x0.80x0.50, 0.40P CASE 631AA ISSUE E

**DATE 24 JAN 2024** 

MAX.

0.55

0.27

0.37

0.17

1.25

0.85

1.25

0.25

MILLIMETERS

 $N\square M$ .

0.50

0.21

0.31

0.12

1.20

0.80

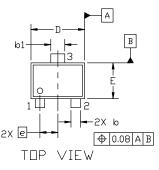
0.40 BSC

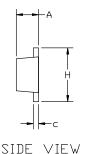
1.20

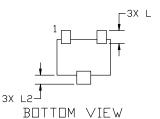
0.29 REF

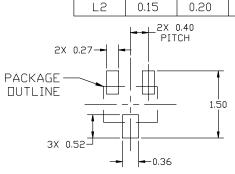
#### NOTES:

- DIMENSIONING AND TOLERANCING PER ASME Y14.5M, 2018.
- CONTROLLING DIMENSION: MILLIMETERS.
- MAXIMUM LEAD THICKNESS INCLUDES LEAD FINISH, MINIMUM LEAD THICKNESS IS THE MINIMUM THICKNESS OF BASE MATERIAL.
- DIMENSIONS D AND E DO NOT INCLUDE MOLD FLASH, PROTRUSIONS OR GATE BURRS.









DIM

Α

b

b1

 $\subset$ D

Ε

е Н

L

MIN.

0.45

0.15

0.25

0.07

1.15

0.75

1.15

### RECOMMENDED MOUNTING FOOTPRINT

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

### **GENERIC MARKING DIAGRAM\***



XX = Specific Device Code = Date Code

\*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.

STYLE 1:	STYLE 2:	STYLE 3:	STYLE 4:	STYLE 5:
PIN 1. BASE	PIN 1. ANODE	PIN 1. ANODE	PIN 1. CATHODE	PIN 1. GATE
2. EMITTER	2. N/C	2. ANODE	2. CATHODE	<ol><li>SOURCE</li></ol>
<ol><li>COLLECTOR</li></ol>	<ol><li>CATHODE</li></ol>	<ol><li>CATHODE</li></ol>	<ol><li>ANODE</li></ol>	<ol><li>DRAIN</li></ol>

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