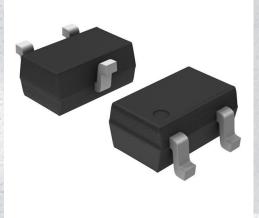


# **MUN5238T1G Datasheet**

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DiGi Electronics Part Number MU

MUN5238T1G-DG

Manufacturer

onsemi

Manufacturer Product Number

MUN5238T1G

Description

TRANS PREBIAS NPN 50V SC70-3

Detailed Description

Pre-Biased Bipolar Transistor (BJT) NPN - Pre-Biase d 50 V 100 mA 202 mW Surface Mount SC-70-3 (SO

T323)



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:                   |
|--|---------------------------------|
| MUN5238T1G                                   | onsemi                          |
| Series:                                      | Product Status:                 |
|  | Active                          |
| Transistor Type:                             | Current - Collector (Ic) (Max): |
| NPN - Pre-Biased                             | 100 mA                          |
| Voltage - Collector Emitter Breakdown (Max): | Resistor - Base (R1):           |
| 50 V   | 2.2 kOhms                       |
| DC Current Gain (hFE) (Min) @ Ic, Vce:       | Vce Saturation (Max) @ lb, Ic:  |
| 160 @ 5mA, 10V                               | 250mV @ 1mA, 10mA               |
| Current - Collector Cutoff (Max):            | Power - Max:                    |
| 500nA  | 202 mW                          |
| Mounting Type:                               | Package / Case:                 |
| Surface Mount                                | SC-70, SOT-323                  |
| Supplier Device Package:                     | Base Product Number:            |
| SC-70-3 (SOT323)                             | MUN5238                         |
|  |                                 |

# **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 = 2.2 k $\Omega$ , R2 = $\infty$ k $\Omega$

# MUN2238, MMUN2238L, MUN5238, DTC123TE, DTC123TM3, NSBC123TF3

# NPN 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 base–emitter 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 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

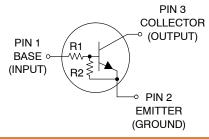
#### **MAXIMUM RATINGS** $(T_A = 25^{\circ}C)$

| Rating                         | Symbol               | Max | Unit |
|--------------------------------|----------------------|-----|------|
| Collector-Base Voltage         | $V_{CBO}$            | 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> | 12  | Vdc  |
| Input Reverse Voltage          | V <sub>IN(rev)</sub> | 6   | Vdc  |

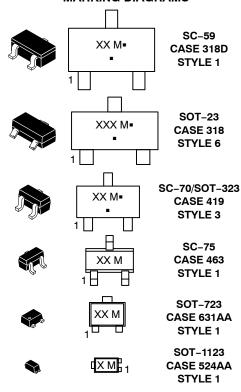
Stresses exceeding those listed in the Maximum Ratings table may damage the device. If any of these limits are exceeded, device functionality should not be assumed, damage may occur and reliability may be affected.

1

#### **PIN CONNECTIONS**



#### **MARKING DIAGRAMS**



XXX = Specific Device Code

M = Date Code\*Pb-Free Package

(Note: Microdot may be in either location)

#### **ORDERING INFORMATION**

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

NOTE: Some of the device on this data sheet have been **DISCONTINUED**. Please refer to the table on page 2.

<sup>\*</sup>Date Code orientation may vary depending upon manufacturing location.

**Table 1. ORDERING INFORMATION** 

| Device                       | Part Marking | Package                    | Shipping <sup>†</sup> |
|------------------------------|--------------|----------------------------|-----------------------|
| MMUN2238LT1G, SMMUN2238LTIG* | A8R          | SOT-23<br>(Pb-Free)        | 3000 / Tape & Reel    |
| MUN5238T1G                   | AQ           | SC-70/SOT-323<br>(Pb-Free) | 3000 / Tape & Reel    |
| DTC123TET1G                  | 7R           | SC-75<br>(Pb-Free)         | 3000 / 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, <u>BRD8011/D.</u>

#### **DISCONTINUED** (Note 1)

| Device        | Part Marking | Package               | Shipping <sup>†</sup> |
|---------------|--------------|-----------------------|-----------------------|
| MUN2238T1G    | 6Q           | SC-59<br>(Pb-Free)    | 3000 / Tape & Reel    |
| DTC123TM3T5G  | 7C           | SOT-732<br>(Pb-Free)  | 8000 / Tape & Reel    |
| NSBC123TF3T5G | Т            | SOT-1123<br>(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>1.</sup> **DISCONTINUED:** This device is not recommended for new design. Please contact your **onsemi** representative for information. The most current information on this device may be available on <a href="https://www.onsemi.com">www.onsemi.com</a>.

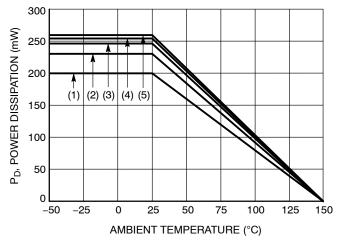


Figure 1. Derating Curve

- (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

<sup>\*</sup>S Prefix for Automotive and Other Applications Requiring Unique Site and Control Change Requirements; AEC-Q101 Qualified and PPAP Capable.

**Table 2. THERMAL CHARACTERISTICS** 

| Characteristic   |  | Symbol                            | Max                      | Unit        |  |  |  |  |
|--|--|-----------------------------------|--------------------------|-------------|--|--|--|--|
| THERMAL CHARACTERISTICS (SC-59) (MUN2238)                      |  |                                   |                          |             |  |  |  |  |
| Total Device Dissipation $T_A = 25^{\circ}C$ Derate above 25°C | (Note 2)<br>(Note 3)<br>(Note 2)<br>(Note 3) | P <sub>D</sub>                    | 230<br>338<br>1.8<br>2.7 | mW<br>mW/°C |  |  |  |  |
| Thermal Resistance, Junction to Ambient                        | (Note 2)<br>(Note 3)                         | $R_{	heta JA}$                    | 540<br>370               | °C/W        |  |  |  |  |
| Thermal Resistance,<br>Junction to Lead                        | (Note 2)<br>(Note 3)                         | $R_{	hetaJL}$                     | 264<br>287               | °C/W        |  |  |  |  |
| Junction and Storage Temperature Range                         |  | T <sub>J</sub> , T <sub>stg</sub> | -55 to +150              | °C          |  |  |  |  |
| THERMAL CHARACTERISTICS (SOT-23) (MMUN2238L)                   |  |                                   |                          |             |  |  |  |  |
| Total Device Dissipation $T_A = 25^{\circ}C$ Derate above 25°C | (Note 2)<br>(Note 3)<br>(Note 2)<br>(Note 3) | P <sub>D</sub>                    | 246<br>400<br>2.0<br>3.2 | mW<br>mW/°C |  |  |  |  |
| Thermal Resistance,<br>Junction to Ambient                     | (Note 1)<br>(Note 3)                         | $R_{	hetaJA}$                     | 508<br>311               | °C/W        |  |  |  |  |
| Thermal Resistance,<br>Junction to Lead                        | (Note 2)<br>(Note 3)                         | $R_{	hetaJL}$                     | 174<br>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) (MUN5238)              |  |                                   |                          |             |  |  |  |  |
| Total Device Dissipation $T_A = 25^{\circ}C$ Derate above 25°C | (Note 2)<br>(Note 3)<br>(Note 2)<br>(Note 3) | P <sub>D</sub>                    | 202<br>310<br>1.6<br>2.5 | mW<br>mW/°C |  |  |  |  |
| Thermal Resistance,<br>Junction to Ambient                     | (Note 2)<br>(Note 3)                         | $R_{	hetaJA}$                     | 618<br>403               | °C/W        |  |  |  |  |
| Thermal Resistance, Junction to Lead                           | (Note 2)<br>(Note 3)                         | $R_{	hetaJL}$                     | 280<br>332               | °C/W        |  |  |  |  |
| Junction and Storage Temperature Range                         |  | T <sub>J</sub> , T <sub>stg</sub> | -55 to +150              | °C          |  |  |  |  |
| THERMAL CHARACTERISTICS (SC-75) (DTC123TE)                     |  |                                   |                          |             |  |  |  |  |
| Total Device Dissipation $T_A = 25^{\circ}C$ Derate above 25°C | (Note 2)<br>(Note 3)<br>(Note 2)<br>(Note 3) | P <sub>D</sub>                    | 200<br>300<br>1.6<br>2.4 | mW<br>mW/°C |  |  |  |  |
| Thermal Resistance, Junction to Ambient                        | (Note 2)<br>(Note 3)                         | $R_{	hetaJA}$                     | 600<br>400               | °C/W        |  |  |  |  |
| Junction and Storage Temperature Range                         |  | T <sub>J</sub> , T <sub>stg</sub> | -55 to +150              | °C          |  |  |  |  |
| THERMAL CHARACTERISTICS (SOT-723) (DTC123TM3)                  |  |                                   |                          |             |  |  |  |  |
| Total Device Dissipation $T_A = 25^{\circ}C$ Derate above 25°C | (Note 2)<br>(Note 3)<br>(Note 2)<br>(Note 3) | P <sub>D</sub>                    | 260<br>600<br>2.0<br>4.8 | mW<br>mW/°C |  |  |  |  |
| Thermal Resistance,<br>Junction to Ambient                     | (Note 2)<br>(Note 3)                         | $R_{	hetaJA}$                     | 480<br>205               | °C/W        |  |  |  |  |
| Junction and Storage Temperature Range                         |  | T <sub>J</sub> , T <sub>stg</sub> | -55 to +150              | °C          |  |  |  |  |

- 2. FR-4 @ Minimum Pad.

- FR-4 @ 1.0 x 1.0 linch 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) (NSBC123TF3)                |  |                                   |                          |             |  |  |
| Total Device Dissipation $T_A = 25^{\circ}C$ Derate above 25°C | (Note 4)<br>(Note 5)<br>(Note 4)<br>(Note 5) | P <sub>D</sub>                    | 254<br>297<br>2.0<br>2.4 | mW<br>mW/°C |  |  |
| Thermal Resistance,<br>Junction to Ambient                     | (Note 4)<br>(Note 5)                         | $R_{	hetaJA}$                     | 493<br>421               | °C/W        |  |  |
| Thermal Resistance, Junction to Lead                           | (Note 4)                                     | $R_{	hetaJL}$                     | 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>               | -   | -   | 4.0  | mAdc |
| Collector–Base Breakdown Voltage (I <sub>C</sub> = 10 μA, I <sub>E</sub> = 0)                           | V <sub>(BR)</sub> CBO          | 50  | _   | -    | Vdc  |
| Collector–Emitter Breakdown Voltage (Note 6) (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 6)<br>(I <sub>C</sub> = 5.0 mA, V <sub>CE</sub> = 10 V)                           | h <sub>FE</sub>                | 160 | 350 | -    |      |
| Collector–Emitter Saturation Voltage (Note 6) (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 <sub>CE</sub> = 5.0 V, I <sub>C</sub> = 100 $\mu$ A)                             | V <sub>i(off)</sub>            | -   | 0.6 | 0.5  | Vdc  |
| Input Voltage (on) ( $V_{CE} = 0.3 \text{ V}, I_{C} = 10 \text{ mA}$ )                                  | $V_{i(on)}$                    | 1.1 | 0.8 | -    | Vdc  |
| Output Voltage (on) (V <sub>CC</sub> = 5.0 V, V <sub>B</sub> = 2.5 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                             | 1.5 | 2.2 | 2.9  | 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.

<sup>6.</sup> Pulsed Condition: Pulse Width = 300 msec, Duty Cycle ≤ 2%.

# TYPICAL CHARACTERISTICS MUN2238, MMUN2238L, MUN5238, DTC123TE, DTC123TM3

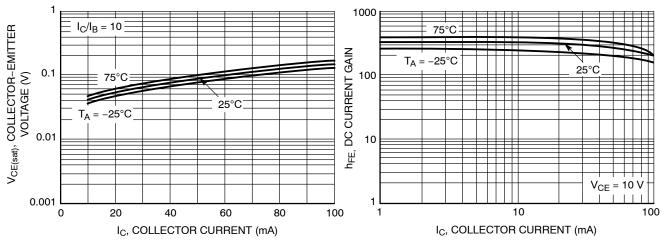


Figure 2. V<sub>CE(sat)</sub> vs. I<sub>C</sub>

Figure 3. DC Current Gain

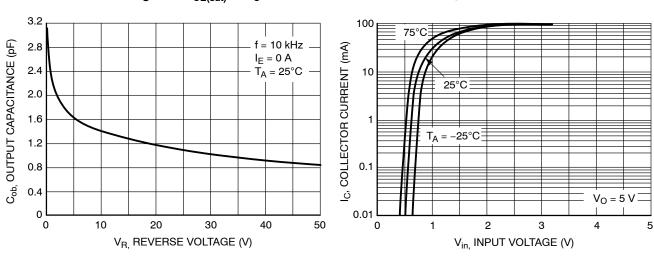


Figure 4. Output Capacitance

Figure 5. Output Current vs. Input Voltage

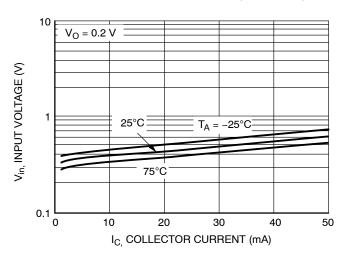


Figure 6. Input Voltage vs. Output Current

# TYPICAL CHARACTERISTICS NSBC123TF3

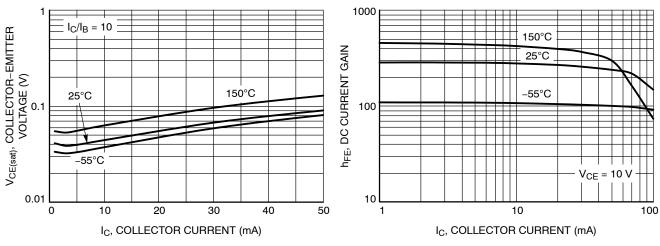


Figure 7. V<sub>CE(sat)</sub> vs. I<sub>C</sub>

Figure 8. DC Current Gain

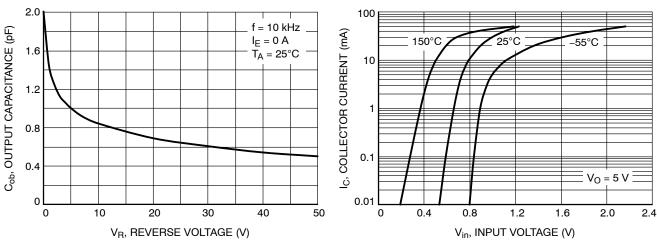


Figure 9. Output Capacitance

Figure 10. Output Current vs. Input Voltage

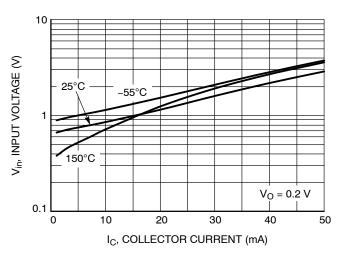


Figure 11. Input Voltage vs. Output Current



**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

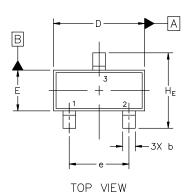
2.04

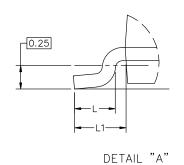
0.55

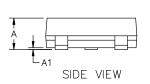
0.69

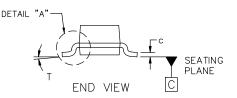
2.64

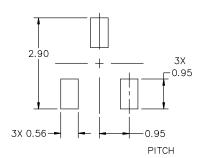
10°











Scale 3:1

#### NOTES:

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 NUMBE | R: 98ASB42226B              | 98ASB42226B Electronic versions are uncontrolled except when accessed directly from<br>Printed versions are uncontrolled except when stamped "CONTROLLED |             |  |  |
|----------------|-----------------------------|--|-------------|--|--|
| DESCRIPTIO     | N: SOT-23 (TO-236) 2.90x1.3 | 30x1.00 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

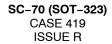
| STYLE 1 THRU 5:<br>CANCELLED                            | STYLE 6:<br>PIN 1. BASE<br>2. EMITTER<br>3. COLLECTOR | STYLE 7:<br>PIN 1. EMITTER<br>2. BASE<br>3. COLLECTOR | STYLE 8:<br>PIN 1. ANODE<br>2. NO CONNECTION<br>3. CATHODE | ı                |   |
|---|---|---|--|------------------|---|
| STYLE 9:  | STYLE 10:   | STYLE 11:   | STYLE 12:  | STYLE 13:        | STYLE 14:                                 |
| PIN 1. ANODE  | PIN 1. DRAIN  | PIN 1. ANODE  | PIN 1. CATHODE   | PIN 1. SOURCE    | PIN 1. CATHODE                            |
| 2. ANODE  | 2. SOURCE   | 2. CATHODE  | 2. CATHODE   | 2. DRAIN         | 2. GATE                                   |
| 3. CATHODE  | 3. GATE   | 3. CATHODE-ANODE                                      | 3. ANODE   | 3. GATE          | 3. ANODE                                  |
| STYLE 15:   | STYLE 16:   | STYLE 17:   | STYLE 18:  | STYLE 19:        | STYLE 20: PIN 1. CATHODE 2. ANODE 3. GATE |
| PIN 1. GATE   | PIN 1. ANODE  | PIN 1. NO CONNECTION                                  | PIN 1. NO CONNECTION                                       | I PIN 1. CATHODE |   |
| 2. CATHODE  | 2. CATHODE  | 2. ANODE  | 2. CATHODE   | 2. ANODE         |   |
| 3. ANODE  | 3. CATHODE  | 3. GATHODE  | 3. ANODE   | 3. CATHODE-ANODE |   |
| STYLE 21:   | STYLE 22:   | STYLE 23:   | STYLE 24:  | STYLE 25:        | STYLE 26:                                 |
| PIN 1. GATE   | PIN 1. RETURN   | PIN 1. ANODE  | PIN 1. GATE  | PIN 1. ANODE     | PIN 1. CATHODE                            |
| 2. SOURCE   | 2. OUTPUT   | 2. ANODE  | 2. DRAIN   | 2. CATHODE       | 2. ANODE                                  |
| 3. DRAIN  | 3. INPUT  | 3. CATHODE  | 3. SOURCE  | 3. GATE          | 3. NO CONNECTION                          |
| STYLE 27:<br>PIN 1. CATHODE<br>2. CATHODE<br>3. CATHODE | STYLE 28:<br>PIN 1. ANODE<br>2. ANODE<br>3. ANODE     |   |  |                  |   |

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|------------------|---|--------------------------------------|--|--|
| DESCRIPTION:     | SOT-23 (TO-236) 2.90x1.3  | SOT-23 (TO-236) 2.90x1.30x1.00 1.90P |  |  |

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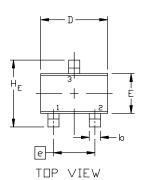
PACKAGE DIMENSIONS

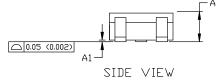


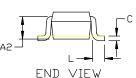
**DATE 11 OCT 2022** 



SCALE 4:1







#### NOTES:

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

|     | M)   | LLIMETE  | RS   |       | 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 BS | C     |
| 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 |



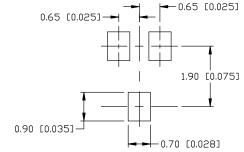


XX = Specific Device Code

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.



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:<br>CANCELLED       | STYLE 2:<br>PIN 1. ANODE<br>2. N.C.<br>3. CATHODE | STYLE 3:<br>PIN 1. BASE<br>2. EMITTER<br>3. COLLECTOR | STYLE 4:<br>PIN 1. CATHODE<br>2. CATHODE<br>3. ANODE | STYLE 5:<br>PIN 1. ANODE<br>2. ANODE<br>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> | <ol><li>COLLECTOR</li></ol>                       | 3. DRAIN  | <ol><li>CATHODE-ANODE</li></ol>                      | 3. ANODE-CATHODE                                   | <ol><li>CATHODE</li></ol> |

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|------------------|-----------------|---|-------------|
| DESCRIPTION:     | SC-70 (SOT-323) |   | PAGE 1 OF 1 |

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**PACKAGE DIMENSIONS** 

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

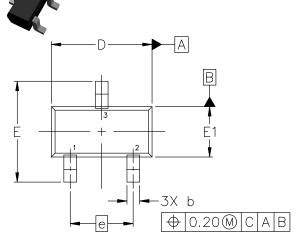
**CASE 463 ISSUE H** 

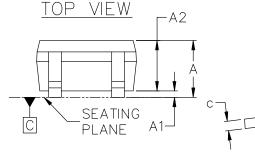
**DATE 01 FEB 2024** 

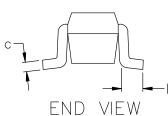
#### NOTES:

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

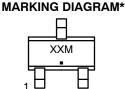
| DIM  | MILLIMETERS |      |      |  |
|------|-------------|------|------|--|
| INII | MIN.        | NOM. | MAX. |  |
| А    | 0.70        | 0.80 | 0.90 |  |
| A1   | 0.00        | 0.05 | 0.10 |  |
| A2   | 0.80 REF.   |      |      |  |
| b    | 0.15        | 0.20 | 0.30 |  |
| С    | 0.10        | 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 |  |







### SIDE VIEW **GENERIC**



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 | l:      |  |
|---------|---------|--|
| PIN 1.  | BASE    |  |
| 2       | EMITTED |  |

3 COLLECTOR

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

-0.356 1.803 0.787 0.508 1.000

#### 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.

| STYLE 4:                | ST |
|-------------------------|----|
| PIN 1. CATHODE          | Р  |
| 2. CATHODE              |    |
| <ol><li>ANODE</li></ol> |    |

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

| DOCUME | NT N | IIMD | ED. |
|--------|------|------|-----|

98ASB15184C

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**DESCRIPTION:** 

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

PAGE 1 OF 1

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#### PACKAGE DIMENSIONS

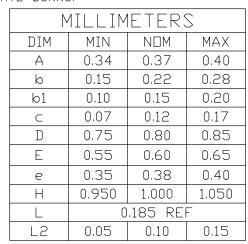


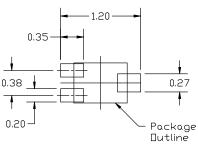
#### SOT-1123 0.80x0.60x0.37, 0.35P CASE 524AA ISSUE D

**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.



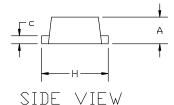


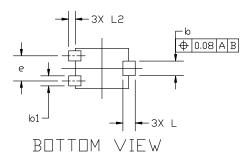
#### RECOMMENDED MOUNTING FOOTPRINT

\*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:                    | STYLE 2:  |
|-----------------------------|-----------|
| PIN 1. BASE                 | PIN 1. AN |
| 2. EMITTER                  | 2. N/     |
| <ol><li>COLLECTOR</li></ol> | 3. CA     |

NODE ATHODE 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

MILLIMETERS

 $N\square M$ .

0.50

0.21

0.31

0.12

1.20

0.80

0.40 BSC

1.20

0.29 REF

0.20



#### 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

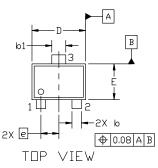
0.85

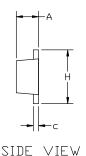
1.25

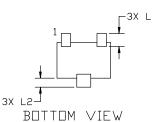
0.25

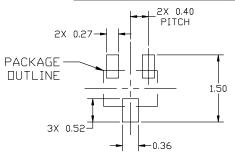
#### NOTES:

- 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 L2 MIN.

0.45

0.15

0.25

0.07

1.15

0.75

1.15

0.15

#### 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. GATE 2. SOURCE PIN 1. BASE PIN 1. ANODE PIN 1. ANODE PIN 1. CATHODE 2 FMITTER 2 CATHODE 2 N/C 2. ANODE 3. COLLECTOR 3. CATHODE 3. CATHODE 3. DRAIN

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| DESCRIPTION:     | SOT-723 1.20x0.80x0.50, 0.40P |   | PAGE 1 OF 1 |

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