

EMT1DXV6

Dual General Purpose Transistor

PNP Dual

This transistor is designed for general purpose amplifier applications. It is housed in the SOT-563 which is designed for low power surface mount applications.

Features

- Lead-Free Solder Plating
- Low $V_{CE(SAT)}$, < 0.5 V
- 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

| Rating | Symbol | Value | Unit |
|--------------------------------|-----------|-------|------|
| Collector-Emitter Voltage | V_{CEO} | -60 | V |
| Collector-Base Voltage | V_{CBO} | -50 | V |
| Emitter-Base Voltage | V_{EBO} | -6.0 | V |
| Collector Current - Continuous | I_C | -100 | mAdc |

THERMAL CHARACTERISTICS

| Characteristic (One Junction Heated) | Symbol | Max | Unit |
|--|-----------------|-----------------|---------------------------|
| Total Device Dissipation $T_A = 25^\circ\text{C}$ | P_D | 357 (Note 1) | mW |
| Derate above 25°C | | 2.9 (Note 1) | mW/ $^\circ\text{C}$ |
| Thermal Resistance, Junction-to-Ambient | $R_{\theta JA}$ | 350 (Note 1) | $^\circ\text{C}/\text{W}$ |
| Characteristic (Both Junctions Heated) | Symbol | Max | Unit |
| Total Device Dissipation $T_A = 25^\circ\text{C}$ | P_D | 500 (Note 1) | mW |
| Derate above 25°C | | 4.0 (Note 1) | mW/ $^\circ\text{C}$ |
| Thermal Resistance, Junction-to-Ambient | $R_{\theta JA}$ | 250 (Note 1) | $^\circ\text{C}/\text{W}$ |
| Junction and Storage Temperature Range | T_J, T_{stg} | -55 to +150 | $^\circ\text{C}$ |

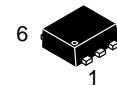
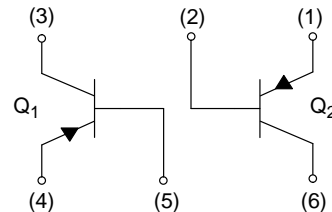
Stresses exceeding those listed in the Maximum Ratings table may damage the device. If any of these limits are exceeded, device functionality should not be assumed, damage may occur and reliability may be affected.

1. FR-4 @ Minimum Pad.



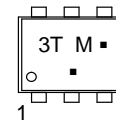
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<http://onsemi.com>



**SOT-563
CASE 463A
STYLE 1**

MARKING DIAGRAM



3T = Specific Device Code
M = Month 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.

EMT1DXV6

ELECTRICAL CHARACTERISTICS (T_A = 25°C)

| Characteristic | Symbol | Min | Typ | Max | Unit |
|--|----------------------|------|-----|------|------|
| Collector–Base Breakdown Voltage (I _C = –50 μAdc, I _E = 0) | V _{(BR)CBO} | –60 | – | – | Vdc |
| Collector–Emitter Breakdown Voltage (I _C = –1.0 mAdc, I _B = 0) | V _{(BR)CEO} | –50 | – | – | Vdc |
| Emitter–Base Breakdown Voltage (I _E = –50 μAdc, I _E = 0) | V _{(BR)EBO} | –6.0 | – | – | Vdc |
| Collector–Base Cutoff Current (V _{CB} = –30 Vdc, I _E = 0) | I _{CBO} | – | – | –0.5 | nA |
| Emitter–Base Cutoff Current (V _{EB} = –5.0 Vdc, I _B = 0) | I _{EBO} | – | – | –0.5 | μA |
| Collector–Emitter Saturation Voltage (Note 2) (I _C = –50 mAdc, I _B = –5.0 mAdc) | V _{CE(sat)} | – | – | –0.5 | Vdc |
| DC Current Gain (Note 2) (V _{CE} = –6.0 Vdc, I _C = –1.0 mAdc) | h _{FE} | 120 | – | 560 | – |
| Transition Frequency (V _{CE} = –12 Vdc, I _C = –2.0 mAdc, f = 30 MHz) | f _T | – | 140 | – | MHz |
| Output Capacitance (V _{CB} = –12 Vdc, I _E = 0 Adc, f = 1 MHz) | C _{OB} | – | 3.5 | – | pF |

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.

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

ORDERING INFORMATION

| Device | Package | Shipping† |
|-----------------|----------------------|--------------------|
| EMT1DXV6T1G | SOT–563 (Pb–Free) | 4000 / Tape & Reel |
| NSVEMT1DXV6T1G* | SOT–563 (Pb–Free) | 4000 / Tape & Reel |
| EMT1DXV6T5G | SOT–563 (Pb–Free) | 8000 / Tape & Reel |
| NSVEMT1DXV6T5G* | SOT–563 (Pb–Free) | 8000 / 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.

*NSV Prefix for Automotive and Other Applications Requiring Unique Site and Control Change Requirements; AEC–Q101 Qualified and PPAP Capable.

EMT1DXV6

TYPICAL CHARACTERISTICS

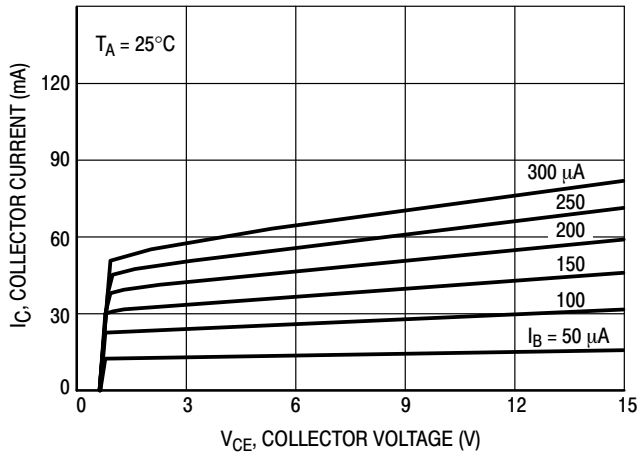


Figure 1. $I_C - V_{CE}$

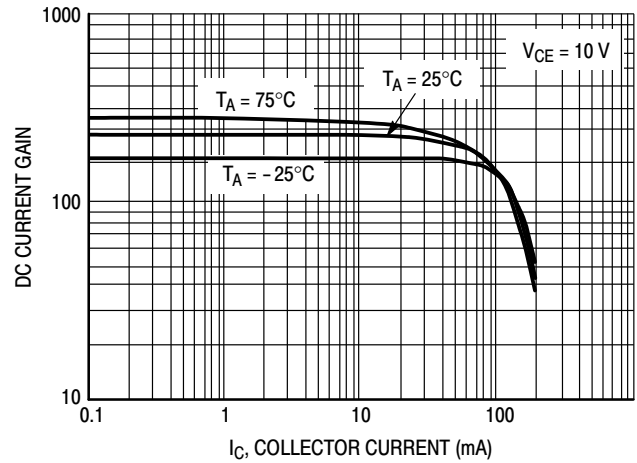


Figure 2. DC Current Gain

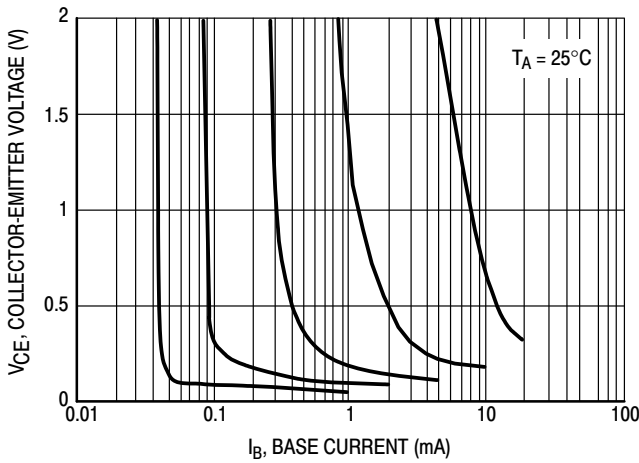


Figure 3. Collector Saturation Region

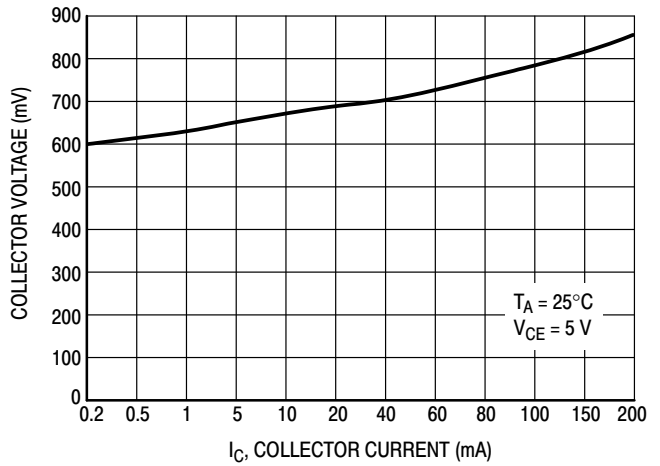


Figure 4. On Voltage

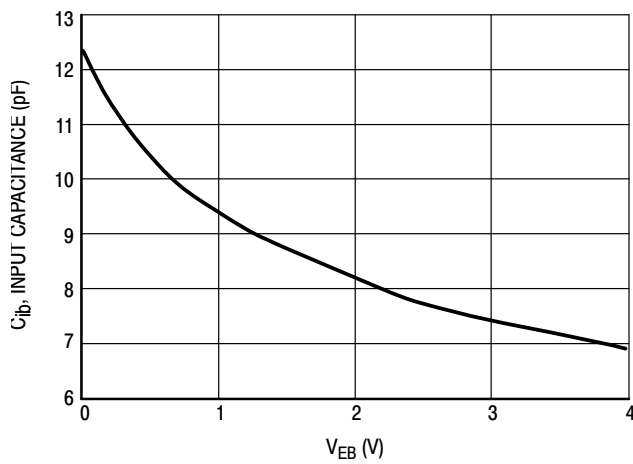


Figure 5. Capacitance

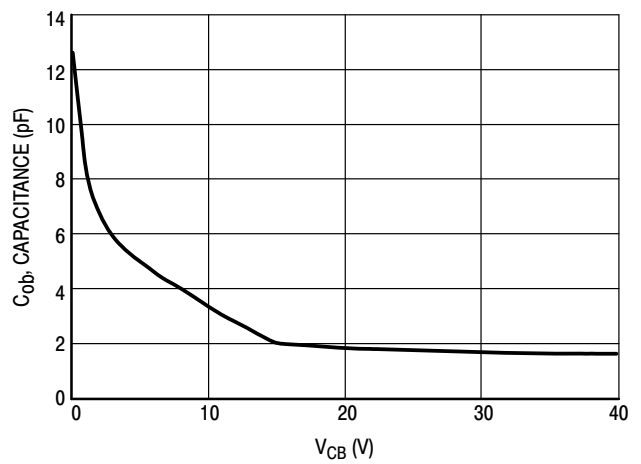
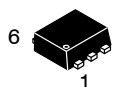


Figure 6. Capacitance

MECHANICAL CASE OUTLINE

PACKAGE DIMENSIONS

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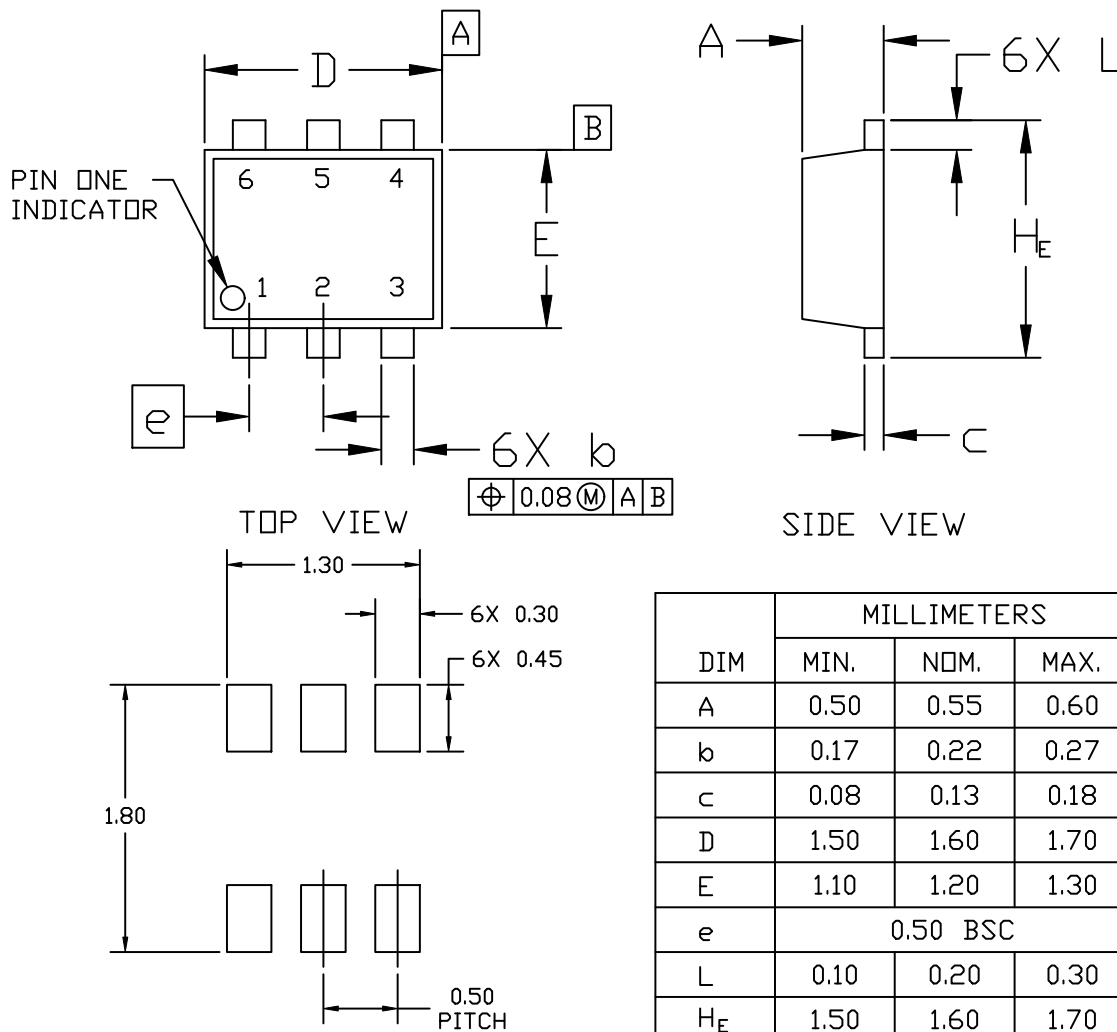
SCALE 4:1

SOT-563, 6 LEAD
CASE 463A
ISSUE H

DATE 26 JAN 2021

NOTES:

1. DIMENSIONING AND TOLERANCING PER ASME Y14.5M, 2009.
2. CONTROLLING DIMENSION: MILLIMETERS
3. MAXIMUM LEAD THICKNESS INCLUDES LEAD FINISH THICKNESS. MINIMUM LEAD THICKNESS IS THE MINIMUM THICKNESS OF BASE MATERIAL.



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.

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CASE 463A
ISSUE H

DATE 26 JAN 2021

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

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

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

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

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

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

STYLE 7:
PIN 1. CATHODE
2. ANODE
3. CATHODE
4. CATHODE
5. ANODE
6. CATHODE

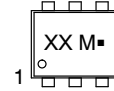
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PIN 1. DRAIN
2. DRAIN
3. GATE
4. SOURCE
5. DRAIN
6. DRAIN

STYLE 9:
PIN 1. SOURCE 1
2. GATE 1
3. DRAIN 2
4. SOURCE 2
5. GATE 2
6. DRAIN 1

STYLE 10:
PIN 1. CATHODE 1
2. N/C
3. CATHODE 2
4. ANODE 2
5. N/C
6. ANODE 1

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

**GENERIC
MARKING DIAGRAM***



XX = Specific Device Code
M = Month 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.

| | | |
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