

Dual General Purpose Transistor

PNP Dual

EMT1DXV6

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

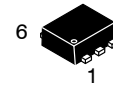
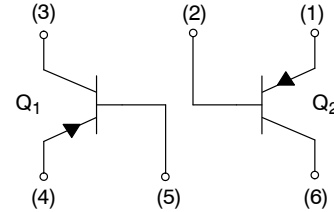
Rating	Symbol	Value	Unit
Collector - Emitter Voltage	V_{CEO}	-60	V
Collector - Base Voltage	V_{CBO}	-50	V
Emitter - Base Voltage	V_{EBO}	-6.0	V
Collector Current – Continuous	I_C	-100	mAdc

THERMAL CHARACTERISTICS

Characteristic (One Junction Heated)	Symbol	Max	Unit
Total Device Dissipation $T_A = 25^\circ\text{C}$ Derate above 25°C	P_D	357 (Note 1) 2.9 (Note 1)	mW 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 $T_A = 25^\circ\text{C}$ Derate above 25°C	P_D	500 (Note 1) 4.0 (Note 1)	mW 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	$^\circ\text{C}$

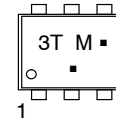
Stresses exceeding those listed in the Maximum Ratings table may damage the device. If any of these limits are exceeded, device functionality should not be assumed, damage may occur and reliability may be affected.

1. FR-4 @ Minimum Pad.



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 on page 2 of this data sheet.

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

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 _C = 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 _C = 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

DISCONTINUED (Note 3)

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.

3. **DISCONTINUED:** These devices are not available. Please contact your **onsemi** representative for information. The most current information on these devices may be available on www.onsemi.com.

TYPICAL CHARACTERISTICS

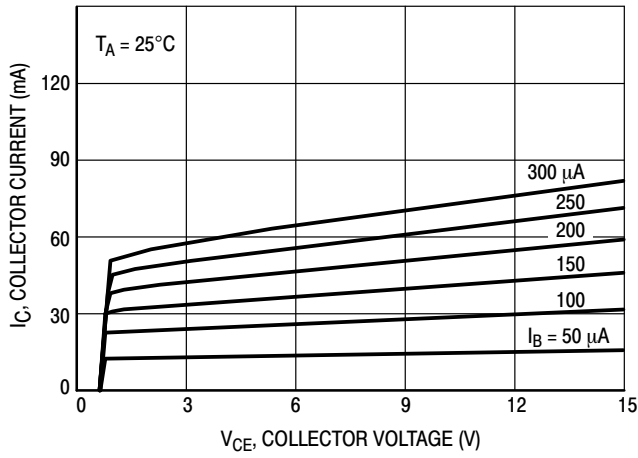


Figure 1. $I_C - V_{CE}$

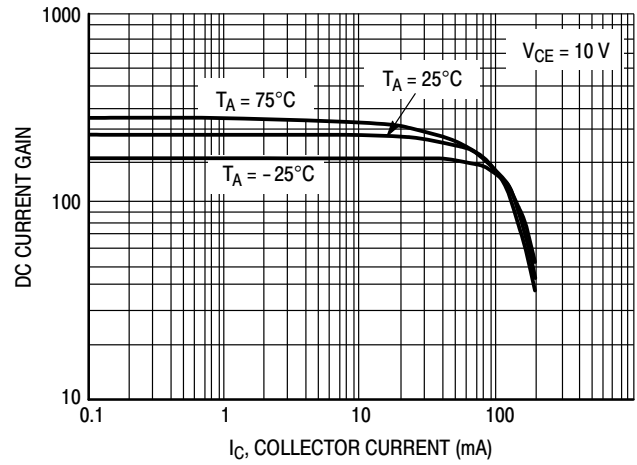


Figure 2. DC Current Gain

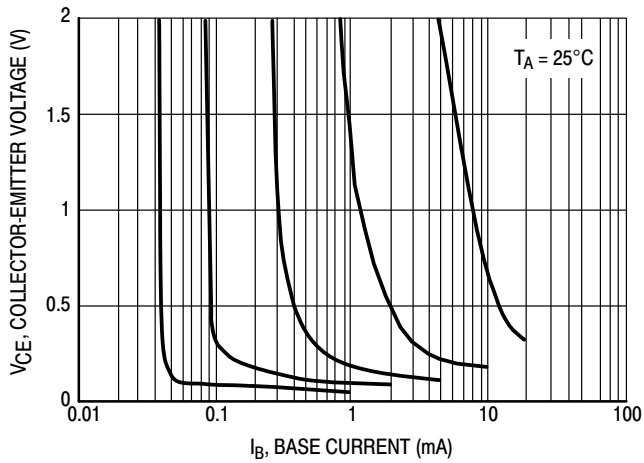


Figure 3. Collector Saturation Region

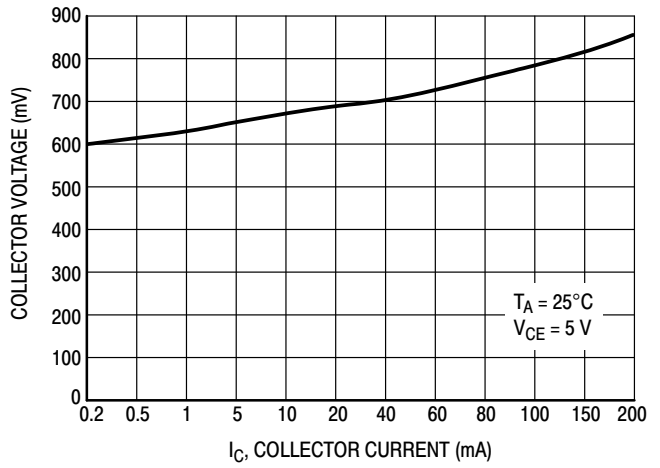


Figure 4. On Voltage

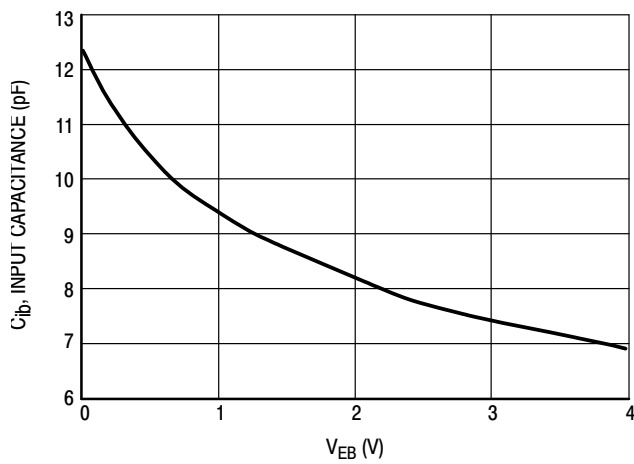


Figure 5. Capacitance

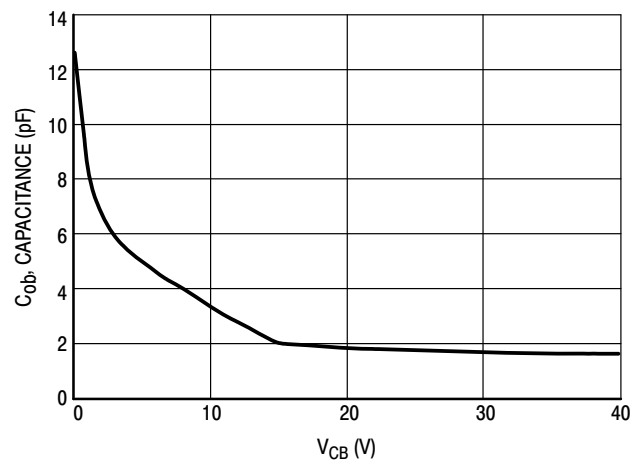


Figure 6. Capacitance

EMT1DXV6

REVISION HISTORY

Revision	Description of Changes	Date
3	Rebranded the Data Sheet to onsemi format. EMT1DXV6T5G, NSVEMT1DXV6T5G OPNs Marked as Discontinued.	07/01/2025

This document has undergone updates prior to the inclusion of this revision history table. The changes tracked here only reflect updates made on the noted approval dates.



SOT-563-6 1.60x1.20x0.55, 0.50P
CASE 463A
ISSUE J

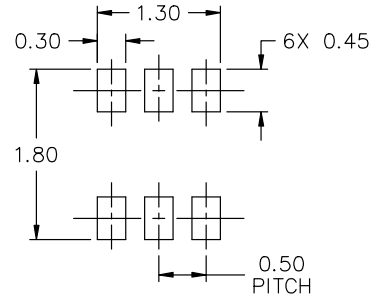
DATE 15 FEB 2024

NOTES:

1. DIMENSIONING AND TOLERANCING CONFORM TO ASME Y14.5-2018.
2. ALL DIMENSION ARE IN MILLIMETERS.
3. MAXIMUM LEAD THICKNESS INCLUDES LEAD FINISH THICKNESS. MINIMUM LEAD THICKNESS IS THE MINIMUM THICKNESS OF BASE MATERIAL.



DIM	MILLIMETERS		
	MIN.	NOM.	MAX.
A	0.50	0.55	0.60
b	0.17	0.22	0.27
c	0.08	0.13	0.18
D	1.50	1.60	1.70
E	1.10	1.20	1.30
e	0.50 BSC		
H	1.50	1.60	1.70
L	0.10	0.20	0.30



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, SOLDERM/D.

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

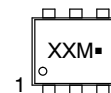
STYLE 8:
PIN 1. DRAIN
2. DRAIN
3. GATE
4. SOURCE
5. DRAIN
6. DRAIN

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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DESCRIPTION:	SOT-563-6 1.60x1.20x0.55, 0.50P	PAGE 1 OF 1

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