BC858CDXV6T1, BC858CDXV6T5

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

- These are Pb−Free Devices

MAXIMUM RATINGS

Rating	Symbol	Value	Unit
Collector−Emitter Voltage	V_{CEO}	−30	V
Collector−Base Voltage	V_{CBO}	−30	V
Emitter−Base Voltage	V_{EBO}	−5.0	V
Collector Current − Continuous	I_C	−100	mAdc

Maximum ratings are those values beyond which device damage can occur. Maximum ratings applied to the device are individual stress limit values (not normal operating conditions) and are not valid simultaneously. If these limits are exceeded, device functional operation is not implied, damage may occur and reliability may be affected.

THERMAL CHARACTERISTICS

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

1. FR−4 @ Minimum Pad

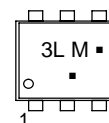## ON Semiconductor®

http://onsemi.com
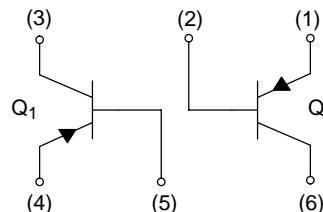
**SOT−563
CASE 463A
PLASTIC**

MARKING DIAGRAMS

3L = Device Code
M = Date Code
▪ = Pb−Free Package
(Note: Microdot may be in either location)

ORDERING INFORMATION

Device	Package	Shipping†
BC858CDXV6T1	SOT−563	4000/Tape & Reel
BC858CDXV6T1G	SOT−563 (Pb−Free)	4000/Tape & Reel
BC858CDXV6T5	SOT−563	8000/Tape & Reel
BC858CDXV6T5G	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.

BC858CDXV6T1, BC858CDXV6T5

ELECTRICAL CHARACTERISTICS (T_A = 25°C unless otherwise noted)

| Characteristic	Symbol	Min	Typ	Max	Unit
OFF CHARACTERISTICS					
Collector–Emitter Breakdown Voltage (I_C = –10 mA)	$V_{(BR)CEO}$	–30	–	–	V
Collector–Emitter Breakdown Voltage (I_C = –10 μA, V_{EB} = 0)	$V_{(BR)CES}$	–30	–	–	V
Collector–Base Breakdown Voltage (I_C = –10 μA)	$V_{(BR)CBO}$	–30	–	–	V
Emitter–Base Breakdown Voltage (I_E = –1.0 μA)	$V_{(BR)EBO}$	–5.0	–	–	V
Collector Cutoff Current (V_{CB} = –30 V) (V_{CB} = –30 V, T_A = 150°C)	I_{CBO}	– –	– –	–15 –4.0	nA μA
ON CHARACTERISTICS					
DC Current Gain (I_C = –10 μA, V_{CE} = –5.0 V) (I_C = –2.0 mA, V_{CE} = –5.0 V)	h_{FE}	– 420	270 520	– 800	–
Collector–Emitter Saturation Voltage (I_C = –10 mA, I_B = –0.5 mA) (I_C = –100 mA, I_B = –5.0 mA)	$V_{CE(sat)}$	– –	– –	–0.3 –0.65	V
Base–Emitter Saturation Voltage (I_C = –10 mA, I_B = –0.5 mA) (I_C = –100 mA, I_B = –5.0 mA)	$V_{BE(sat)}$	– –	–0.7 –0.9	– –	V
Base–Emitter On Voltage (I_C = –2.0 mA, V_{CE} = –5.0 V) (I_C = –10 mA, V_{CE} = –5.0 V)	$V_{BE(on)}$	–0.6 –	– –	–0.75 –0.82	V
SMALL–SIGNAL CHARACTERISTICS					
Current–Gain – Bandwidth Product (I_C = –10 mA, V_{CE} = –5.0 Vdc, f = 100 MHz)	f_T	100	–	–	MHz
Output Capacitance (V_{CB} = –10 V, f = 1.0 MHz)	C_{ob}	–	–	4.5	pF
Noise Figure (I_C = –0.2 mA, V_{CE} = –5.0 Vdc, R_S = 2.0 kΩ, f = 1.0 kHz, BW = 200 Hz)	NF	–	–	10	dB

TYPICAL CHARACTERISTICS
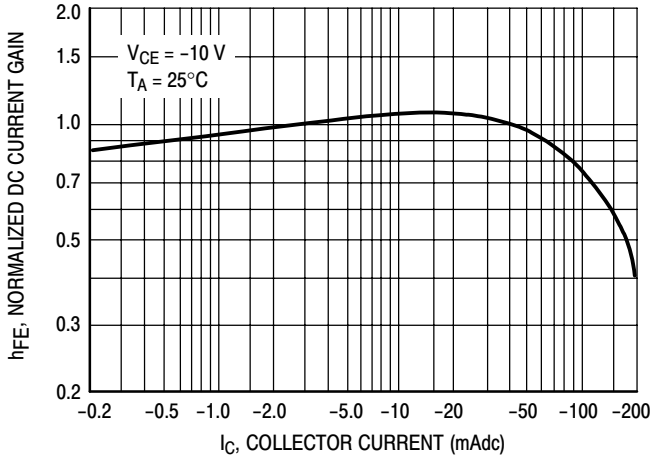
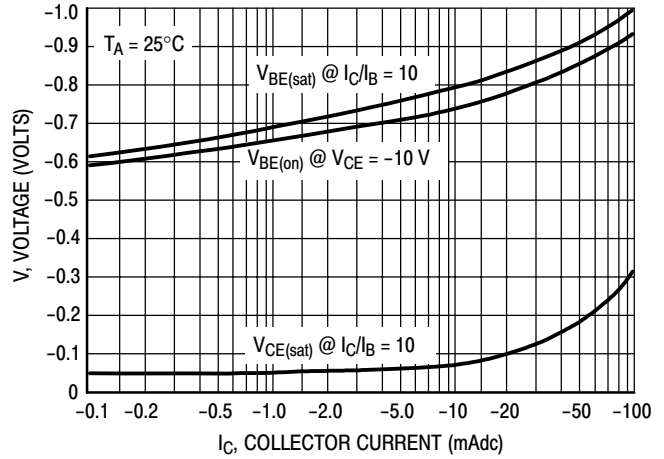**Figure 1. Normalized DC Current Gain**

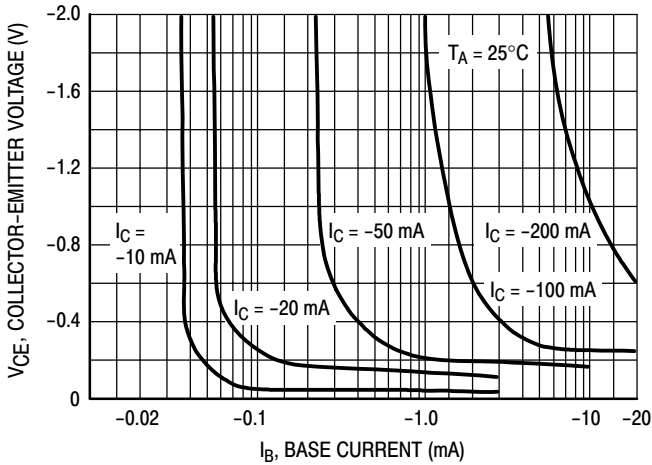**Figure 2. "Saturation" and "On" Voltages**

Figure 3. Collector Saturation Region

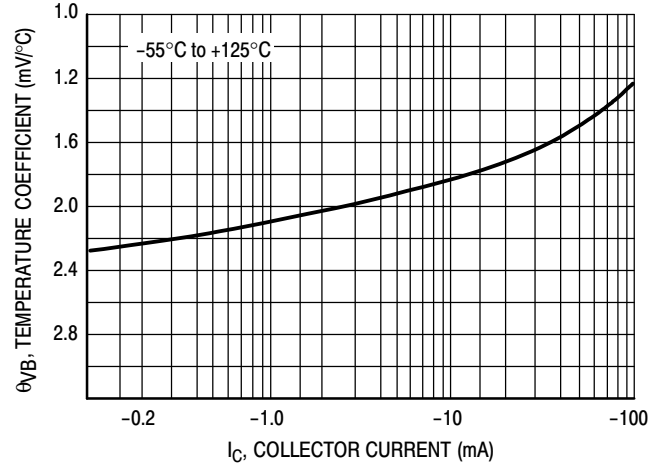**Figure 4. Base–Emitter Temperature Coefficient**

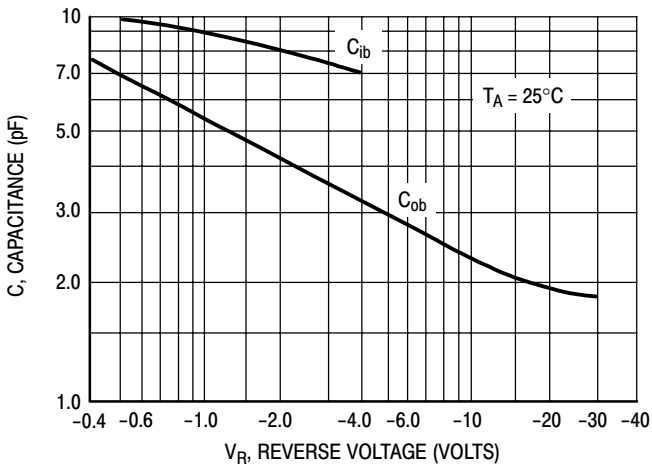**Figure 5. Capacitances**
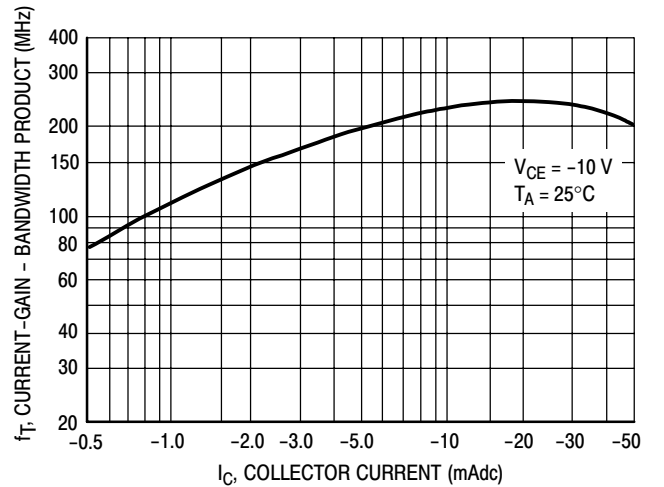
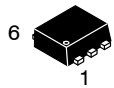

Figure 6. Current–Gain – Bandwidth Product

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ISSUE H

6 [package image] 1

SCALE 4:1

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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.

TOP VIEW

SIDE VIEW

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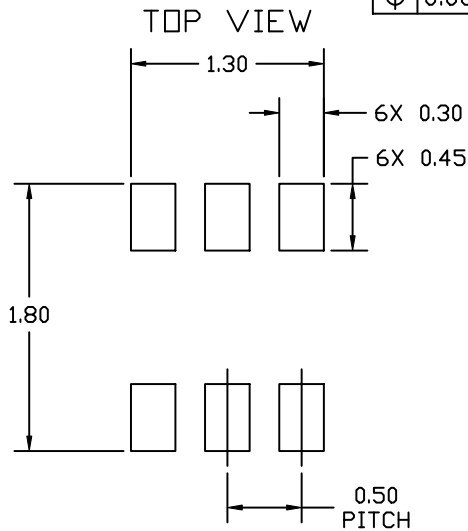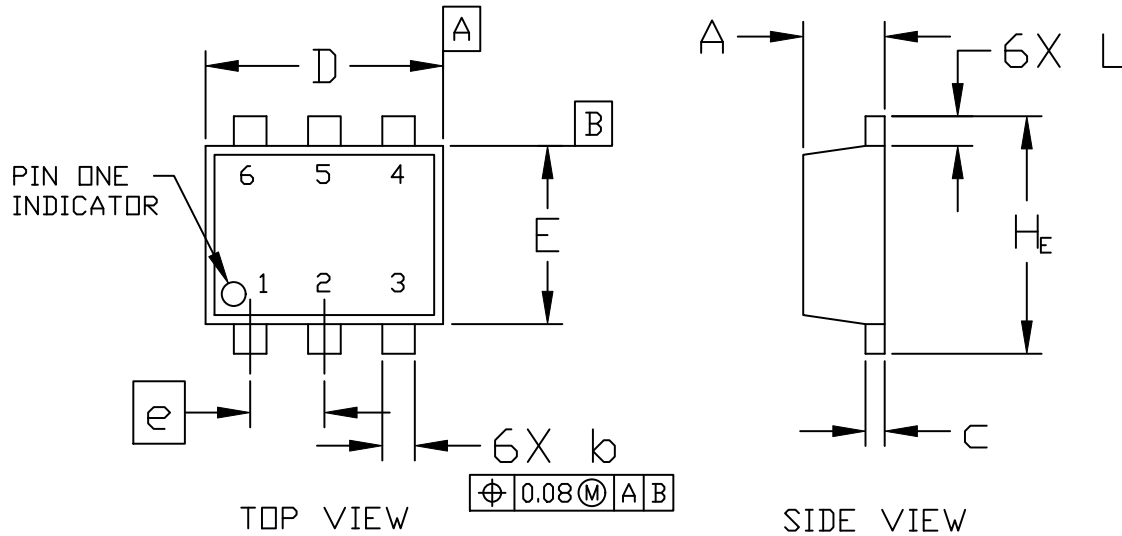
DIM	MILLIMETERS		
	MIN.	NOM.	MAX.
A	0.50	0.55	0.60
b	0.17	0.22	0.27
c	0.08	0.13	0.18
D	1.50	1.60	1.70
E	1.10	1.20	1.30
e	0.50 BSC		
L	0.10	0.20	0.30
H_E	1.50	1.60	1.70

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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 M■
1
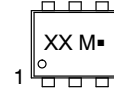
XX = Specific Device Code
M = Month Code
■ = Pb−Free Package

*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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ADDITIONAL INFORMATION

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