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

Characteristic	Symbol	Min	Max	Unit
OFF CHARACTERISTICS				
Collector−Emitter Breakdown Voltage (I_C = −10 mAdc)	$V_{(BR)CEO}$	−60	–	Vdc
Collector−Emitter Cutoff Current (V_{CE} = −50 Vdc)	I_{CES}	–	−50	nAdc
Collector−Base Cutoff Current (V_{CB} = −50 Vdc, I_E = 0) (V_{CB} = −60 Vdc, I_E = 0)	I_{CBO}	– –	−10 −10	nAdc μAdc
Emitter−Base Cutoff Current (V_{EB} = −4.0 Vdc) (V_{EB} = −5.0 Vdc)	I_{EBO}	– –	−50 −10	nAdc μAdc
ON CHARACTERISTICS (Note 1)				
DC Current Gain (I_C = −0.1 mAdc, V_{CE} = −10 Vdc) (I_C = −1.0 mAdc, V_{CE} = −10 Vdc) (I_C = −10 mAdc, V_{CE} = −10 Vdc) (I_C = −150 mAdc, V_{CE} = −10 Vdc) (I_C = −500 mAdc, V_{CE} = −10 Vdc)	h_{FE}	75 100 100 100 50	– 450 – 300 –	–
Collector−Emitter Saturation Voltage (I_C = −150 mAdc, I_B = −15 mAdc) (I_C = −500 mAdc, I_B = −50 mAdc)	$V_{CE(sat)}$	– –	−0.4 −1.6	Vdc
Base−Emitter Saturation Voltage (I_C = −150 mAdc, I_B = −15 mAdc) (I_C = −500 mAdc, I_B = −50 mAdc)	$V_{BE(sat)}$	−0.6 –	−1.3 −2.6	Vdc
SMALL−SIGNAL CHARACTERISTICS				
Magnitude of Small−Signal Current Gain (I_C = −20 mAdc, V_{CE} = −20 Vdc, f = 100 MHz)	$\|h_{fe}\|$	2.0	–	–
Small−Signal Current Gain (I_C = −1.0 mAdc, V_{CE} = −10 Vdc, f = 1 kHz)	h_{fe}	100	–	–
Output Capacitance (V_{CB} = −10 Vdc, I_E = 0, 100 kHz ≤ f ≤ 1.0 MHz)	C_{obo}	–	8.0	pF
Input Capacitance (V_{EB} = −2.0 Vdc, I_C = 0, 100 kHz ≤ f ≤ 1.0 MHz)	C_{ibo}	–	30	pF
SWITCHING CHARACTERISTICS				
Turn−On Time (Reference Figure in MIL−PRF−19500/291)	t_{on}	–	45	ns
Turn−Off Time (Reference Figure in MIL−PRF−19500/291)	t_{off}	–	300	ns

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.

1. Pulse Test: Pulse Width = 300 μs, Duty Cycle ≤ 2.0%.

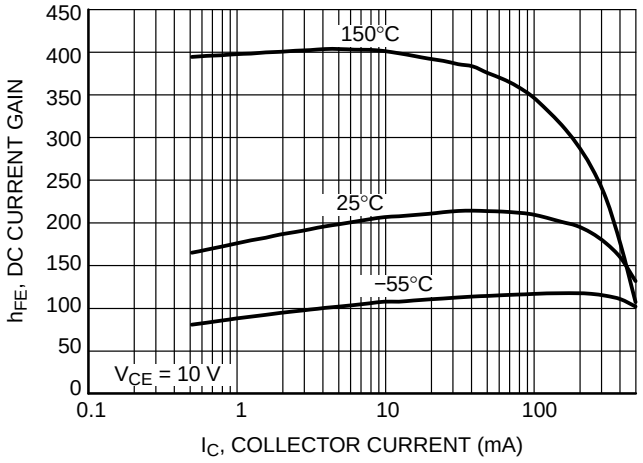


Figure 1. DC Current Gain

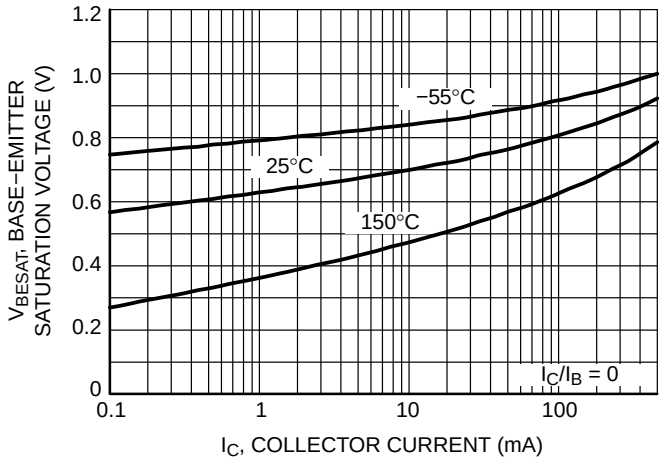


Figure 2. Base−Emitter Saturation Voltage

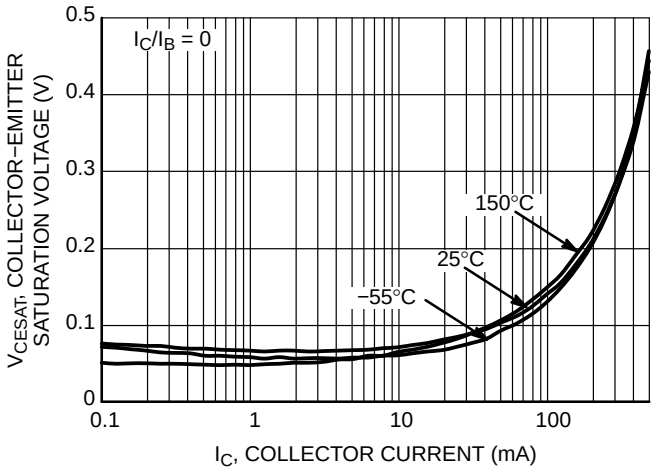


Figure 3. Collector−Emitter Saturation Voltage

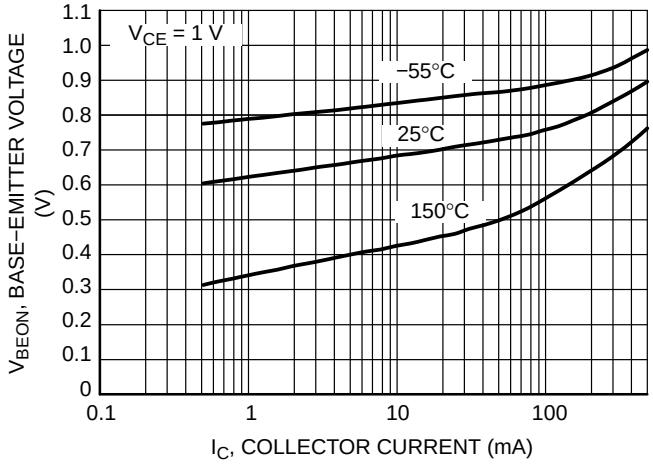


Figure 4. Base−Emitter Voltage

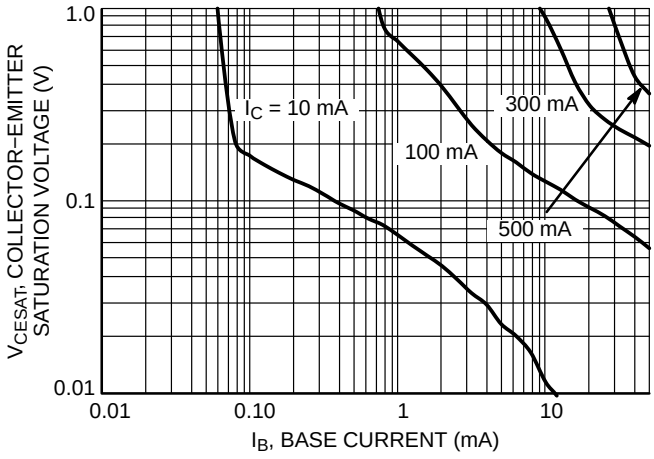


Figure 5. Collector Saturation Region

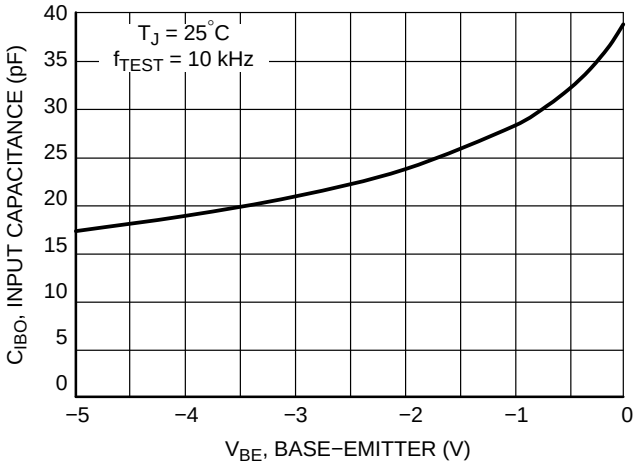


Figure 6. Input Capacitance

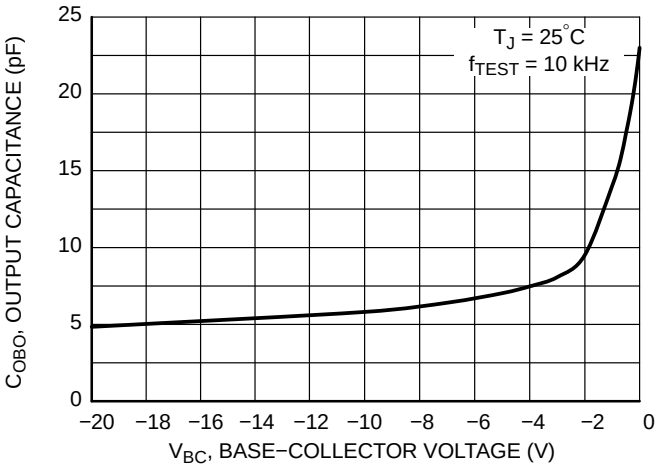


Figure 7. Output Capacitance

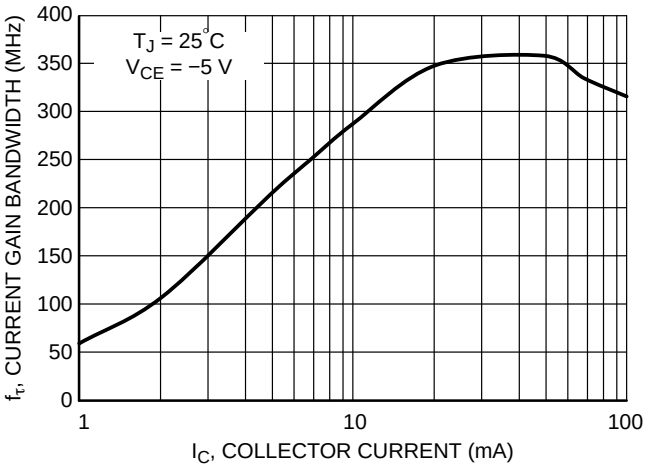


Figure 8. Current Gain Bandwidth Product

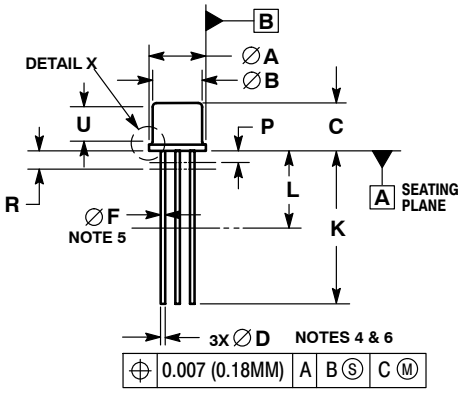
MECHANICAL CASE OUTLINE
PACKAGE DIMENSIONS

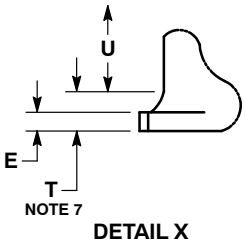
ON Semiconductor®

TO−18
CASE 206AA
ISSUE A

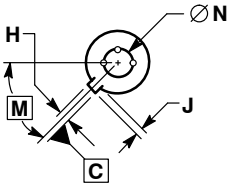
DATE 21 AUG 2012

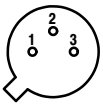
SCALE 1:1





DETAIL X





LEAD IDENTIFICATION DETAIL

NOTES:
1. DIMENSIONING AND TOLERANCING PER ASME Y14.5M, 1994.
2. CONTROLLING DIMENSION: INCHES.
3. DIMENSION J MEASURED FROM DIAMETER A TO EDGE.
4. LEAD TRUE POSITION TO BE DETERMINED AT THE GUAGE PLANE DEFINED BY DIMENSION R.
5. DIMENSION F APPLIES BETWEEN DIMENSION P AND L.
6. DIMENSION D APPLIES BETWEEN DIMENSION L AND K.
7. BODY CONTOUR OPTIONAL WITHIN ZONE DEFINED BY DIMENSIONS A, B, AND T.

	MILLIMETERS		INCHES	
DIM	MIN	MAX	MIN	MAX
A	5.31	5.84	0.209	0.230
B	4.52	4.95	0.178	0.195
C	4.32	5.33	0.170	0.210
D	0.41	0.53	0.016	0.021
E	---	0.76	---	0.030
F	0.41	0.48	0.016	0.019
H	0.91	1.17	0.036	0.046
J	0.71	1.22	0.028	0.048
K	12.70	19.05	0.500	0.750
L	6.35	---	0.250	---
M	45°BSC		45°BSC	
N	2.54 BSC		0.100 BSC	
P	---	1.27	---	0.050
R	1.37 BSC		0.054 BSC	
T	---	0.76	---	0.030
U	2.54	---	0.100	---

STYLE 1:
PIN 1. EMITTER
2. BASE
3. COLLECTOR

STYLE 2:
PIN 1. SOURCE, SUBSTRATE & CASE
2. GATE
3. DRAIN

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

STYLE 4:
PIN 1. SOURCE
2. DRAIN
3. GATE & CASE

STYLE 5:
PIN 1. EMITTER
2. BASE 1
3. BASE 2

STYLE 6:
PIN 1. CATHODE
2. GATE
3. ANODE

STYLE 7:
PIN 1. ANODE
2. BASE
3. CATHODE

STYLE 8:
PIN 1. GATE
2. ANODE 1
3. ANODE 2

STYLE 9:
PIN 1. ANODE 2
2. ANODE 1
3. GATE (CONNECTED TO CASE)

STYLE 10:
PIN 1. BASE
2. EMITTER
3. BASE

STYLE 11:
PIN 1. DRAIN
2. GATE
3. SOURCE, SUBSTRATE

STYLE 12:
PIN 1. SOURCE
2. GATE
3. DRAIN (CASE)

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