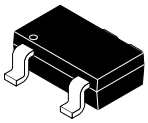
Bipolar Transistor

−30 V, −0.7 A, Low V_{CE}(sat) PNP Single CPH3

30A02CH



CPH3
CASE 318BA

Features

- Large Current Capacitance
- Low Collector−to−Emitter Saturation Voltage (Resistance) R_{CE} (sat) Typ. = 580 mΩ (I_C = 0.7 A, I_B = 35 mA)
- Small ON−resistance (Ron)

Applications

- Low−frequency Amplifier, High−speed Switching, Small Motor Drive

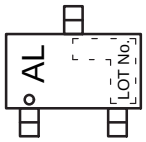
Specifications

ABSOLUTE MAXIMUM RATINGS (Ta = 25°C)

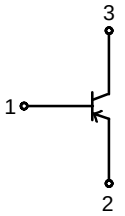
Parameter	Symbol	Conditions	Ratings	Unit
Collector−to−Base Voltage	V_{CBO}		−30	V
Collector−to−Emitter Voltage	V_{CEO}		−30	V
Emitter−to−Base Voltage	V_{EBO}		−5	V
Collector Current	I_C		−700	mA
Collector Current (Pulse)	I_{CP}		−1.4	A
Collector Dissipation	P_C	Mounted on a ceramic board (600 mm^2x0.8 mm)	700	mW
Junction Temperature	Tj		150	°C
Storage Temperature	Tstg		−55 to +150	°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.

MARKING DIAGRAM



ELECTRICAL CONNECTION



1: Base
2: Emitter
3: Collector

ORDERING INFORMATION

See detailed ordering and shipping information on page 4 of this data sheet.

ELECTRICAL CHARACTERISTICS (Ta = 25°C)

Parameter	Symbol	Conditions	Ratings			Unit
			Min	Typ	Max	
Collector Cutoff Current	I_{CBO}	V_{CB} = −30 V, I_E = 0 A	−	−	−100	nA
Emitter Cutoff Current	I_{EBO}	V_{EB} = −4 V, I_C = 0 A	−	−	−100	nA
DC Current Gain	h_{FE}	V_{CE} = −2 V, I_C = −10 mA	200	−	500	
Gain−Bandwidth Product	f_T	V_{CE} = −10 V, I_C = −50 mA	−	520	−	MHz
Output Capacitance	Cob	V_{CB} = −10 V, f = 1 MHz	−	4.7	−	pF
Collector−to−Emitter Saturation Voltage	V_{CE}(sat)	I_C = −200 mA, I_B = −10 mA	−	−110	−220	mV
Base−to−Emitter Saturation Voltage	V_{BE}(sat)	I_C = −200 mA, I_B= −10 mA	−	−0.9	−1.2	V
Collector−to−Base Breakdown Voltage	$V_{(BR)CBO}$	I_C = −10 μA, I_E = 0 A	−30	−	−	V
Collector−to−Emitter Breakdown Voltage	$V_{(BR)CEO}$	I_C = −1 mA, R_{BE} = ∞	−30	−	−	V
Emitter−to−Base Breakdown Voltage	$V_{(BR)EBO}$	I_E = −10 μA, I_C = 0 A	−5	−	−	V
Turn−On Time	t_{on}	See specified Test Circuit.	−	35	−	ns
Storage Time	t_{stg}		−	125	−	ns
Fall Time	t_f		−	25	−	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.

Switching Time Test Circuit

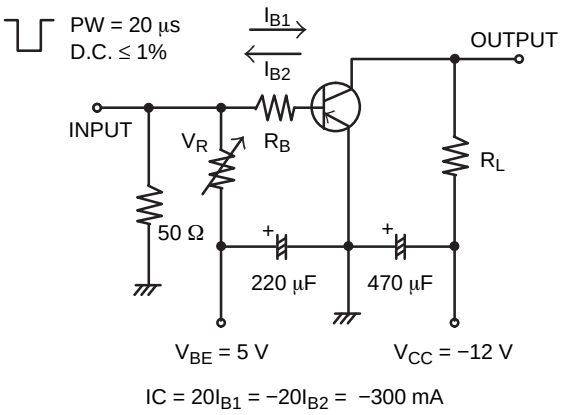


Figure 1. Switching Time Test Circuit

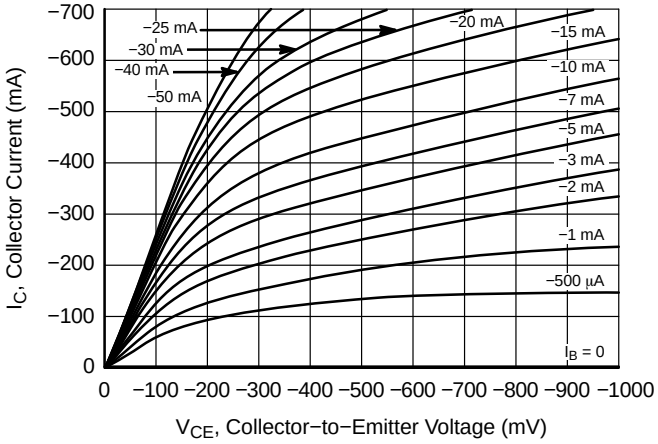


Figure 2. $I_C - V_{CE}$

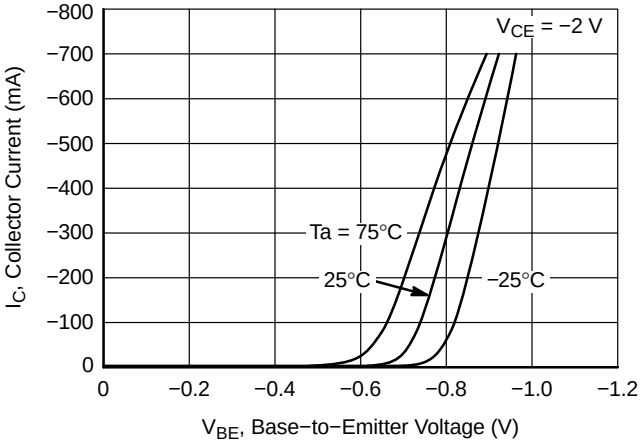


Figure 3. $I_C - V_{BE}$

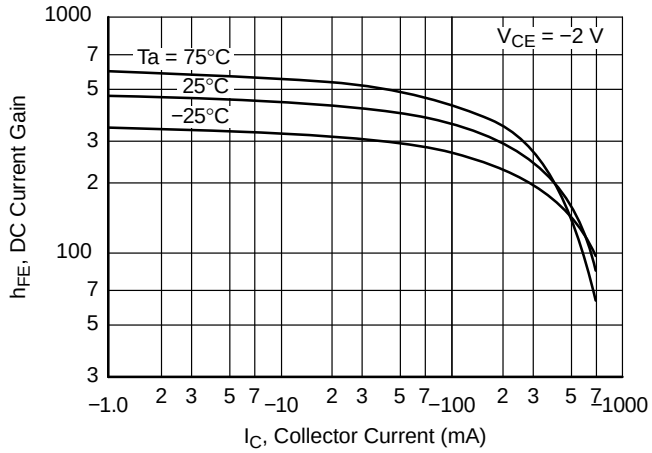


Figure 4. $h_{FE} - I_C$

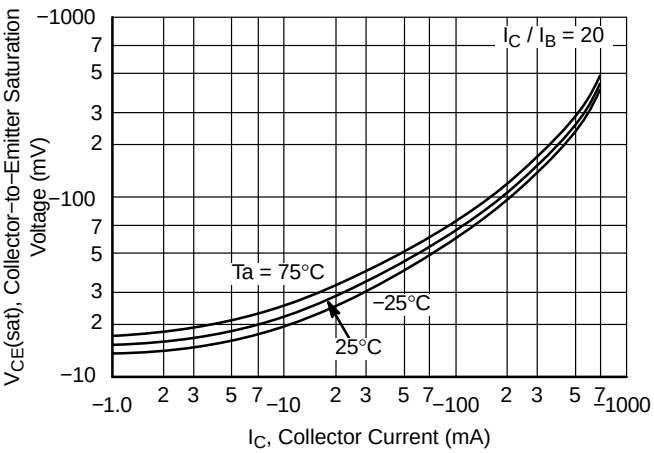


Figure 5. $V_{CE}(sat) - I_C$

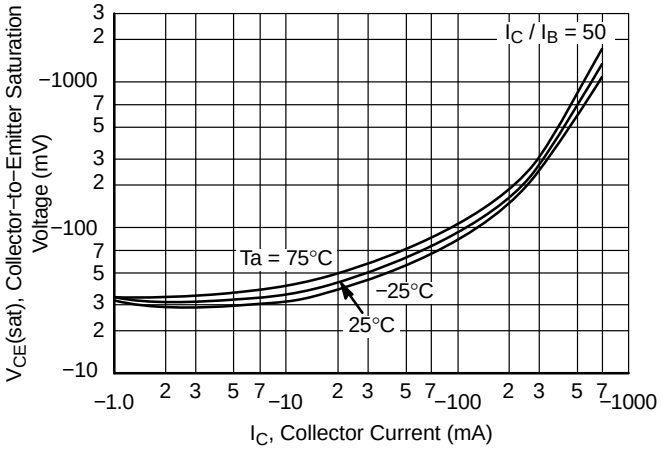


Figure 6. $V_{CE}(sat) - I_C$

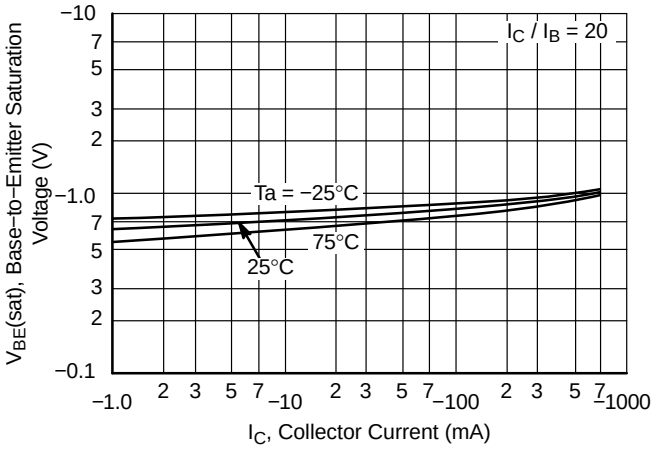


Figure 7. $V_{BE}(sat) - I_C$

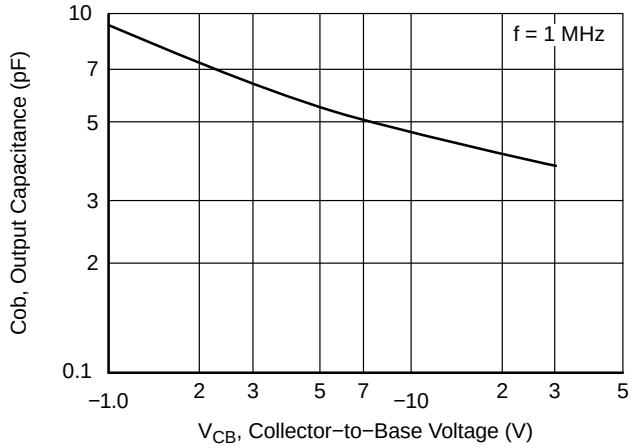


Figure 8. Cob − V_{CB}

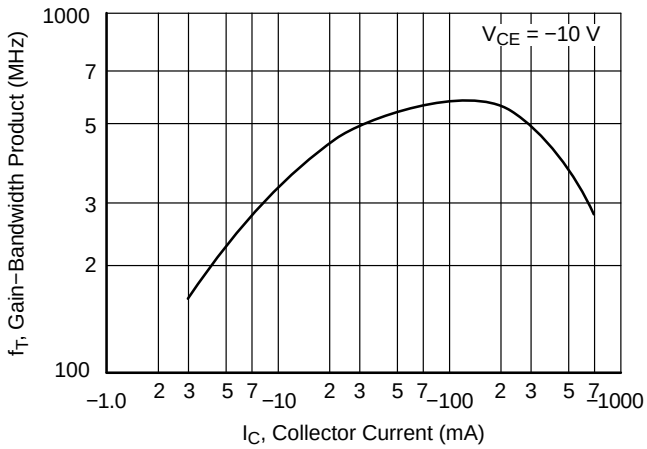


Figure 9. f_T − I_C

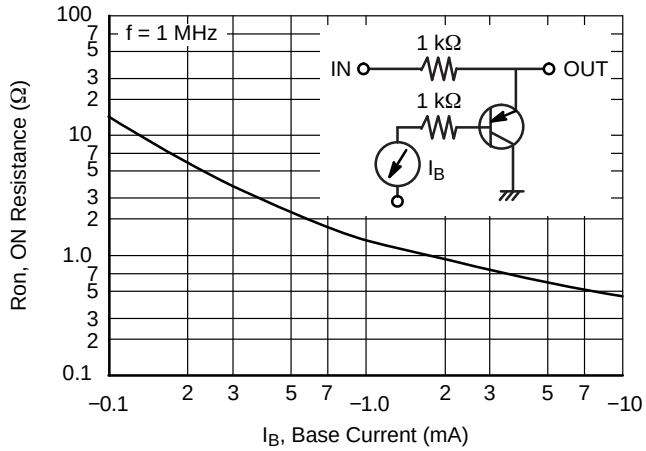


Figure 10. Ron −I_B

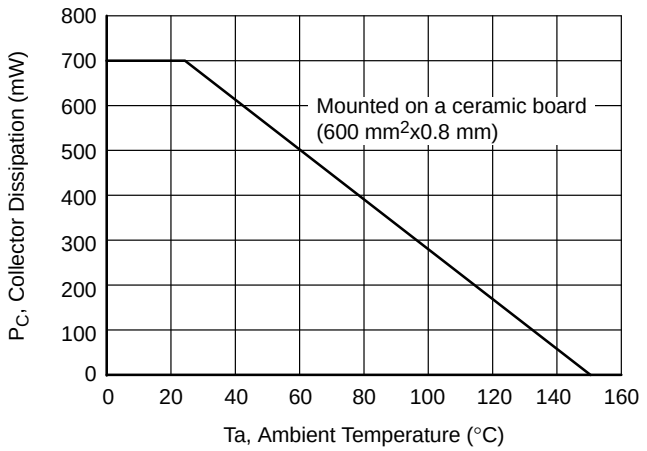


Figure 11. P_C − Ta

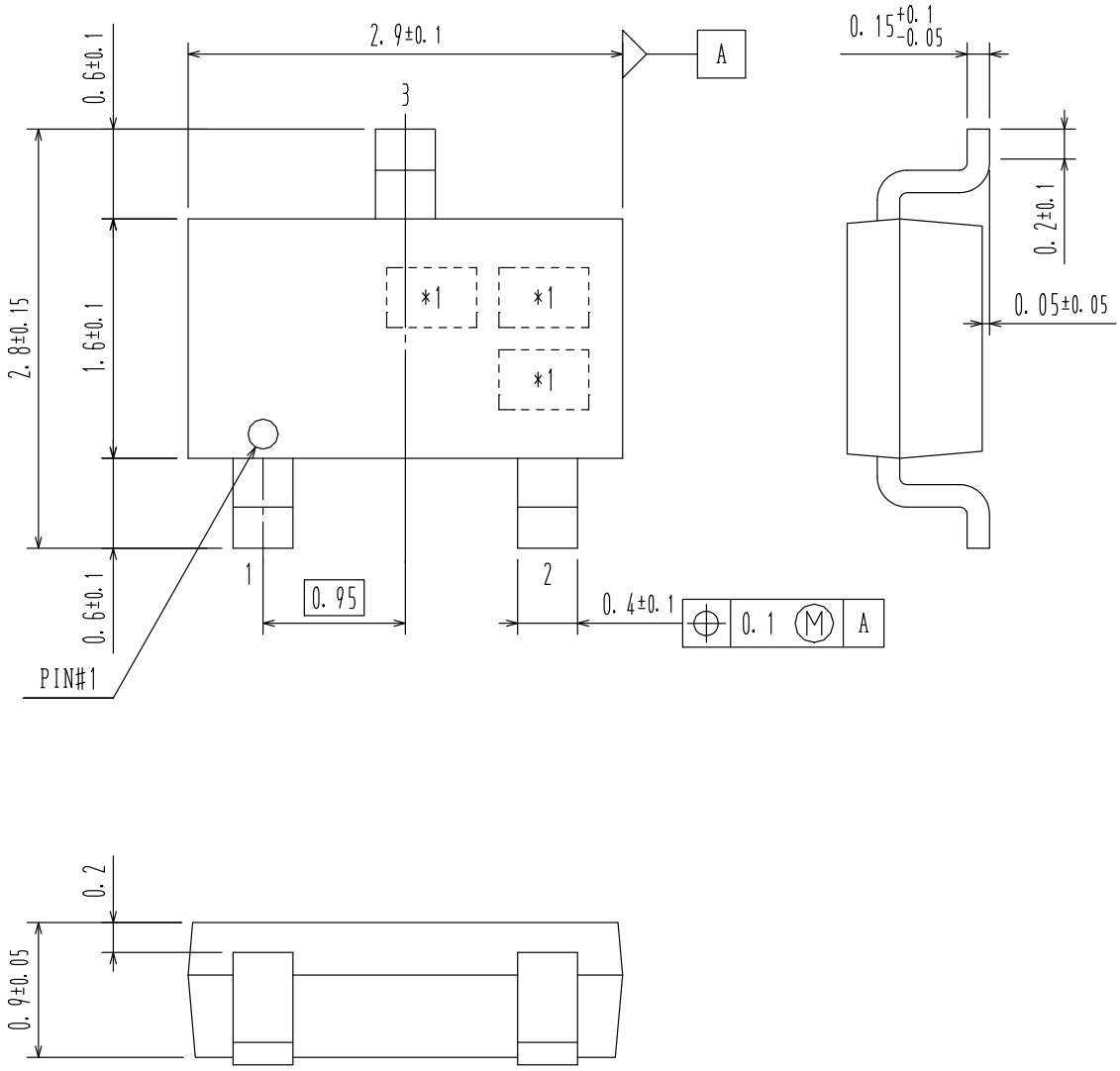
ORDERING INFORMATION

Device	Package	Shipping†
30A02CH−TL−E	CPH3 (Pb−Free)	3,000 / 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.

CPH3
CASE 318BA
ISSUE O

DATE 30 NOV 2011



DOCUMENT NUMBER:	**98AON65437E**	Electronic versions are uncontrolled except when accessed directly from the Document Repository. Printed versions are uncontrolled except when stamped "CONTROLLED COPY" in red.	
DESCRIPTION:	**CPH3**		**PAGE 1 OF 1**

ADDITIONAL INFORMATION

TECHNICAL PUBLICATIONS:
Technical Library: www.onsemi.com/design/resources/technical−documentation
onsemi Website: www.onsemi.com

ONLINE SUPPORT: www.onsemi.com/support
For additional information, please contact your local Sales Representative at
www.onsemi.com/support/sales