50A02CH

Bipolar Transistor
–50V, –0.5A, Low VCE(sat), PNP Single

ON Semiconductor®

www.onsemi.com

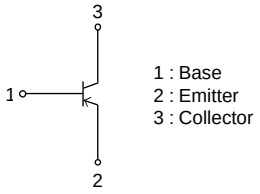
Features

- High Collector Current Capability
- Low Collector to Emitter Saturation Voltage (Resistance): R_{CE}(sat) typ=210mΩ [I_C=0.5A, I_B=50mA]
- Low ON-Resistance (Ron)
- Pb-Free, Halogen Free and RoHS compliance

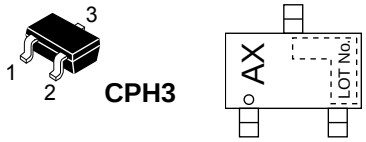
Typical Applications

- Low-Frequency Amplifier
- High Speed Switching
- Small Motor Drive
- Muting Circuit

ELECTRICAL CONNECTION



MARKING



ORDERING INFORMATION

See detailed ordering and shipping information on page 5 of this data sheet.

SPECIFICATIONS

ABSOLUTE MAXIMUM RATING at Ta = 25°C (Note 1, 2)

Parameter	Symbol	Value	Unit
Collector to Base Voltage	V_{CBO}	–50	V
Collector to Emitter Voltage	V_{CEO}	–50	V
Emitter to Base Voltage	V_{EBO}	–5	V
Collector Current	I_C	–500	mA
Collector Current (Pulse)	I_{CP}	–1.0	A
Collector Dissipation (Note 2)	P_C	700	mW
Junction Temperature	Tj	150	°C
Storage Temperature	Tstg	–55 to +150	°C

Note 1 : 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.

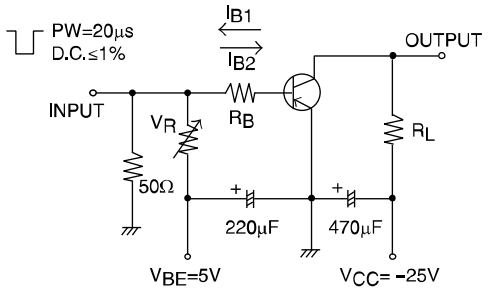
Note 2 : Surface mounted on ceramic substrate(600mm^2 × 0.8mm)

ELECTRICAL CHARACTERISTICS at Ta = 25°C (Note 3)

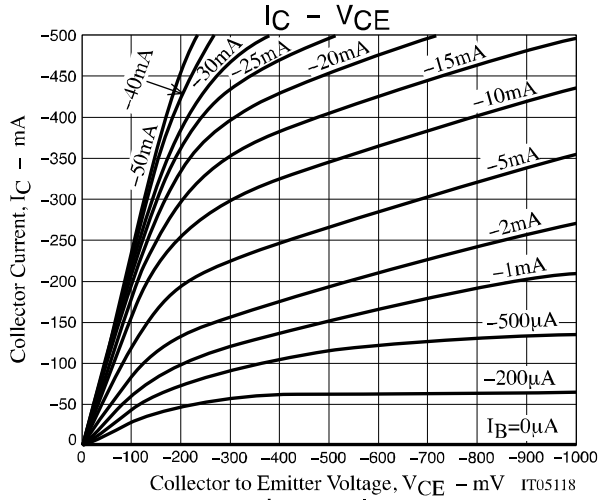
Parameter	Symbol	Conditions	Value			Unit
			min	typ	max	
Collector Cutoff Current	I_{CBO}	V_{CB}=–40V, I_E=0A			–100	nA
Emitter Cutoff Current	I_{EBO}	V_{EB}=–4V, I_C=0A			–100	nA
DC Current Gain	h_{FE}	V_{CE}=–2V, I_C=–10mA	200		500	
Gain-Bandwidth Product	f_T	V_{CE}=–10V, I_C=–50mA		690		MHz
Output Capacitance	Cob	V_{CB}=–10V, f=1MHz		3.8		pF
Collector to Emitter Saturation Voltage	V_{CE}(sat)	I_C=–100mA, I_B=–10mA		–60	–120	mV
Base to Emitter Saturation Voltage	V_{BE}(sat)	I_C=–100mA, I_B=–10mA		–0.9	–1.2	V
Collector to Base Breakdown Voltage	$V_{(BR)CBO}$	I_C=–10μA, I_E=0A	–50			V
Collector to Emitter Breakdown Voltage	$V_{(BR)CEO}$	I_C=–1mA, R_{BE}=∞	–50			V
Emitter to Base Breakdown Voltage	$V_{(BR)EBO}$	I_E=–10μA, I_C=0A	–5			V
Turn-On Time	t_{on}	See specified Test Circuit		30		ns
Storage Time	t_{stg}			170		ns
Fall Time	t_f			30		ns

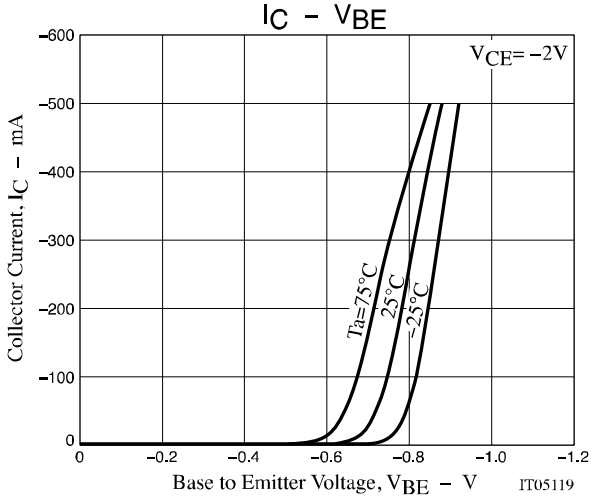
Note 3 : Product parametric performance is indicated in the Electrical Characteristics for the listed test conditions, unless otherwise noted. Product performance may not be indicated by the Electrical Characteristics if operated under different conditions.

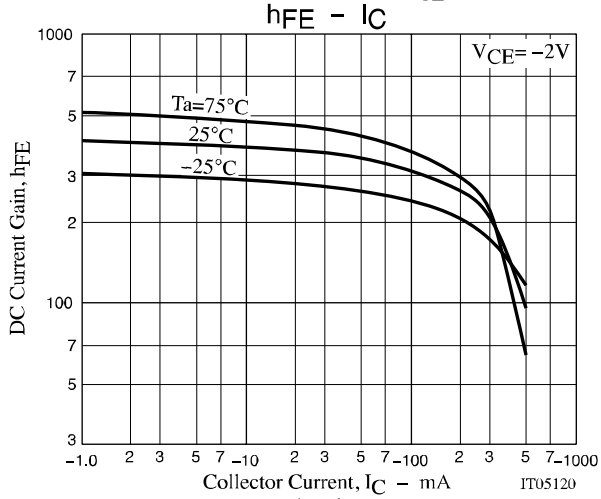
Switching Time Test Circuit

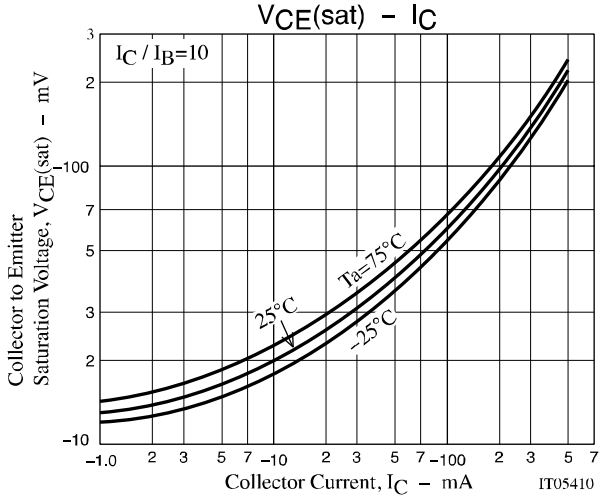


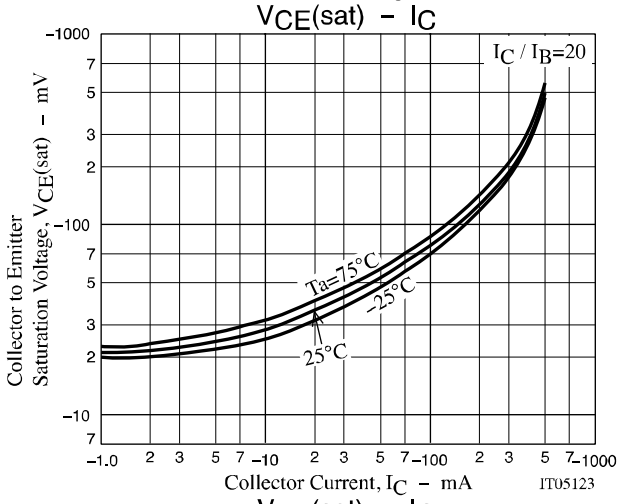
I_C=20I_{B1}= –20I_{B2}= –200mA

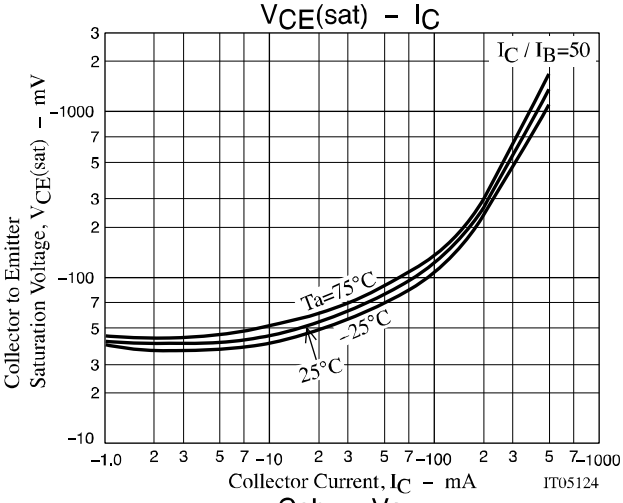


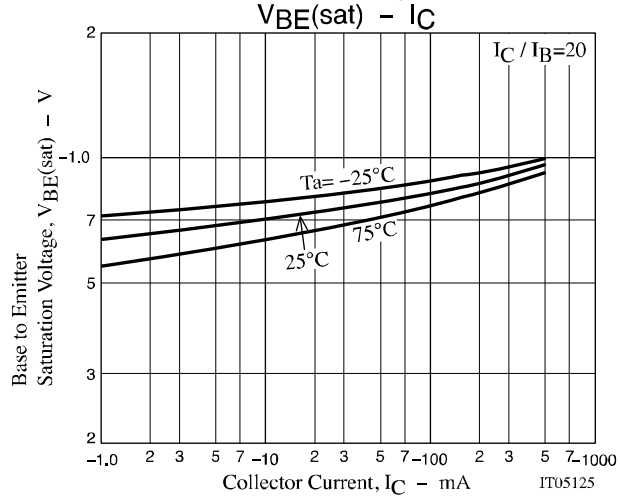


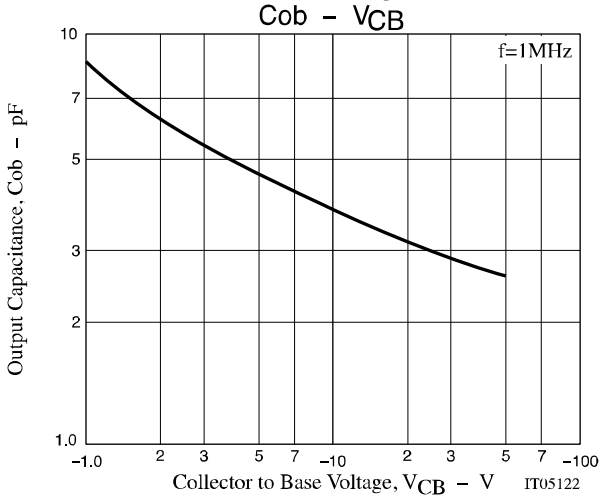


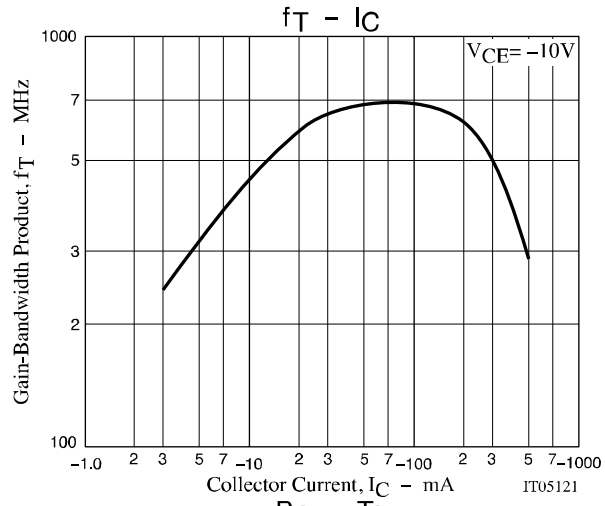


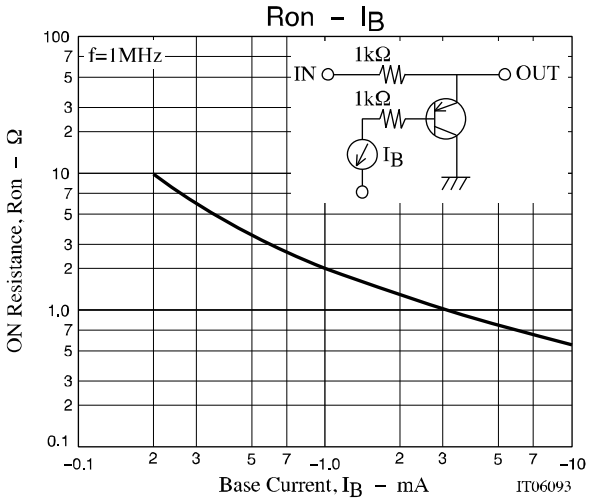


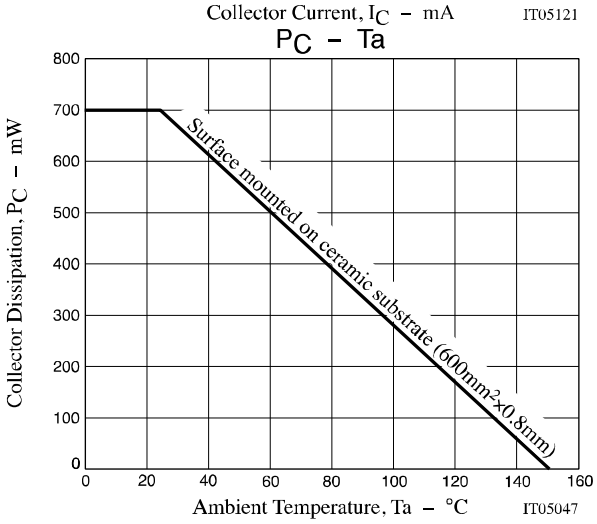








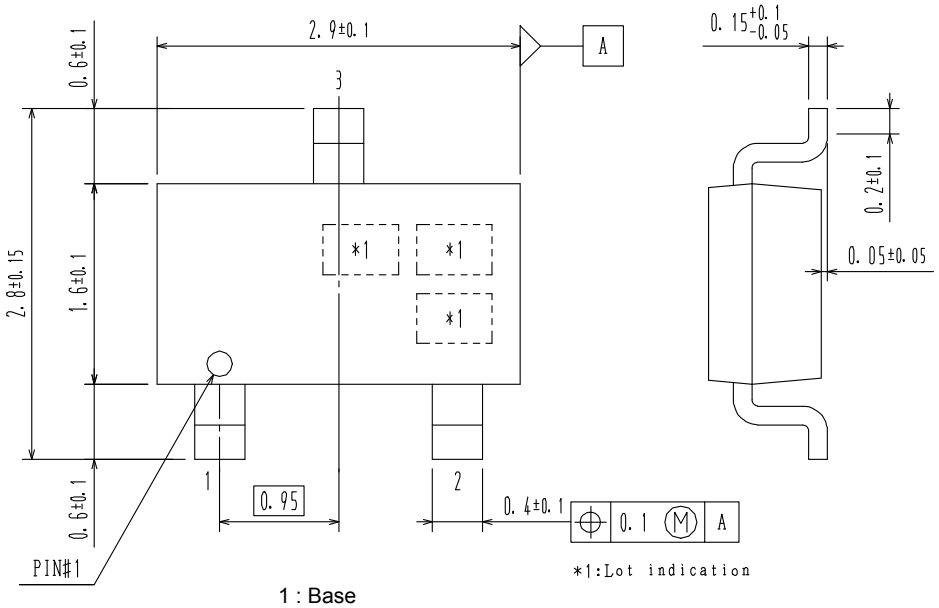




PACKAGE DIMENSIONS

unit : mm

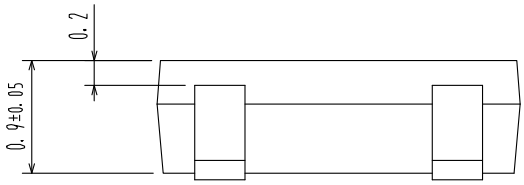
CPH3
CASE 318BA
ISSUE O



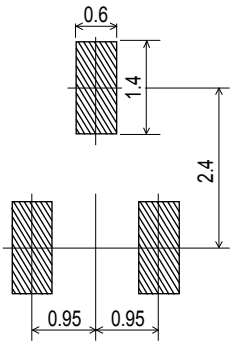
1 : Base

2 : Emitter

3 : Collector



Recommended Soldering Footprint



ORDERING INFORMATION

Device	Marking	Package	Shipping (Qty / Packing)
50A02CH-TL-E	AX	CPH3 (Pb-Free)	3,000 / Tape & Reel
50A02CH-TL-H		CPH3 (Pb-Free / Halogen Free)	

† 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. http://www.onsemi.com/pub_link/Collateral/BRD8011-D.PDF