



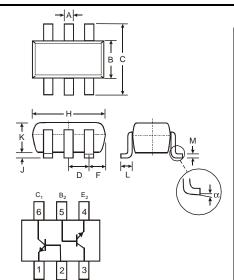
DUAL NPN SURFACE MOUNT SMALL SIGNAL TRANSIS

Features

- Ideally Suited for Automatic Insertion
- For Switching and AF Amplifier Applications
- Complementary PNP Type Available (BC856AS)
- Lead Free/RoHS Compliant (Note 1)
- "Green" Device (Note 4 and 5)

Mechanical Data

- Case: SOT-363
- Case Material: Molded Plastic. UL Flammability Classification Rating 94V-0
- Moisture Sensitivity: Level 1 per J-STD-020C
- Terminals: Solderable per MIL-STD-202, Method 208
- Lead Free Plating (Matte Tin Finish annealed over Alloy 42 leadframe).
- Terminal Connections: See Diagram Marking Information: See Page 3
- Ordering & Date Code Information: See Page 3
- Weight: 0.006 grams (approximate)



SOT-363								
Dim	Max							
Α	0.10	0.30						
В	1.15	1.35						
С	2.00	2.20						
D	0.65 N	0.65 Nominal						
F	0.30	0.40						
Н	1.80	2.20						
J	0.10							
K	0.90	1.00						
L	0.25	0.40						
M	0.10	0.25						
α	0°	8°						
All Dimonsions in mm								

All Dimensions in mm

Maximum Ratings @T_A = 25°C unless otherwise specified

Characteristic		Symbol	Value	Unit	
Collector-Base Voltage		V_{CBO}	80	V	
Collector-Emitter Voltage		V _{CEO}	65	V	
Emitter-Base Voltage		V _{EBO}	6.0	V	
Collector Current		Ic	100	mA	
Peak Collector Current		I _{CM}	200	mA	
Peak Emitter Current		I _{EM}	200	mA	
Power Dissipation	(Note 2)	P_d	200	mW	
Thermal Resistance, Junction to Ambient	(Note 2)	$R_{ hetaJA}$	625	°C/W	
Operating and Storage Temperature Range		T _j , T _{stg}	-65 to +150	°C	

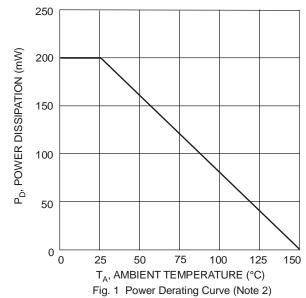
Electrical Characteristics @T_A = 25°C unless otherwise specified

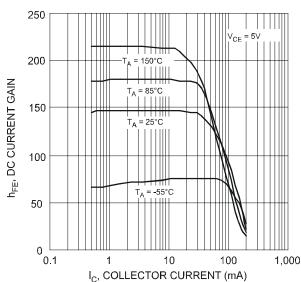
Characteristic		Symbol	Min	Тур	Max	Unit	Test Condition
Collector-Base Breakdown Voltage	(Note 3)	V _{(BR)CBO}	80	_	_	V	$I_C = 10\mu A, I_B = 0$
Collector-Emitter Breakdown Voltage	(Note 3)	V _{(BR)CEO}	65	_	_	V	$I_C = 10 \text{mA}, I_B = 0$
Emitter-Base Breakdown Voltage	(Note 3)	$V_{(BR)EBO}$	6	_	_	V	$I_E = 1 \mu A, I_C = 0$
DC Current Gain	(Note 3)	h _{FE}	110	_	220	_	$V_{CE} = 5.0V, I_{C} = 2.0mA$
Collector-Emitter Saturation Voltage	(Note 3)	V _{CE(SAT)}	_	90 200	250 600	mV	$I_C = 10$ mA, $I_B = 0.5$ mA $I_C = 100$ mA, $I_B = 5.0$ mA
Base-Emitter Saturation Voltage	(Note 3)	V _{BE(SAT)}	_	700 900	_	mV	I _C = 10mA, I _B = 0.5mA I _C = 100mA, I _B = 5.0mA
Base-Emitter Voltage	(Note 3)	V _{BE(ON)}	580 —	660 —	700 770	mV	$V_{CE} = 5.0V, I_{C} = 2.0mA$ $V_{CE} = 5.0V, I_{C} = 10mA$
Collector-Cutoff Current	(Note 3)	I _{CES} I _{CBO} I _{CBO}			15 15 5.0	nA nA μA	V _{CE} = 80V V _{CB} = 40V V _{CB} = 30V, T _A = 150°C
Gain Bandwidth Product		f _T	100		_	MHz	$V_{CE} = 5.0V, I_{C} = 10mA,$ f = 100MHz
Collector-Base Capacitance	•	C _{CB}		2.0	_	pF	$V_{CB} = 10V, f = 1.0MHz$

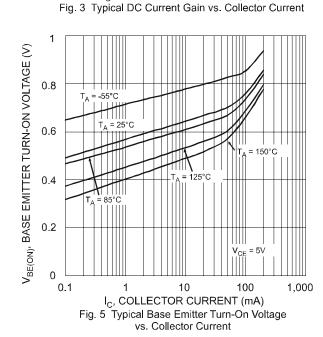
Notes:

- 1. No purposefully added lead.
- 2. Device mounted on FR-4 PCB, pad layout as shown on page 3 or on Diodes Inc. suggested pad layout document AP02001, which can be found on our website at http://www.diodes.com/datasheets/ap02001.pdf. Short duration pulse test used to minimize self-heating effect.
- 4. Diodes Inc.'s "Green" policy can be found on our website at http://www.diodes.com/products/lead_free/index.php.
- 5. Product manufactured with Date Code UO (week 40, 2007) and newer are built with Green Molding Compound. Product manufactured prior to Date Code UO are built with Non-Green Molding Compound and may contain Halogens or Sb2O3 Fire Retardants.









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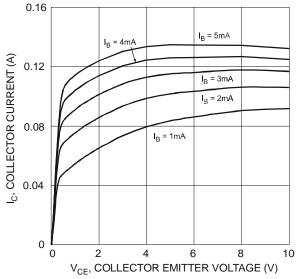
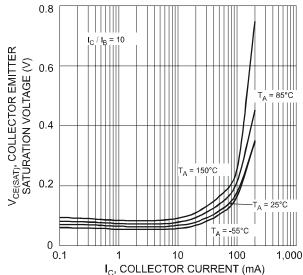
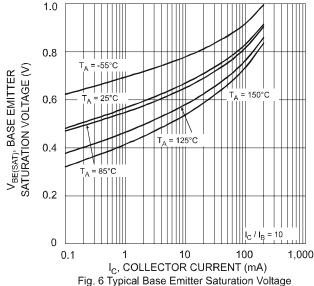


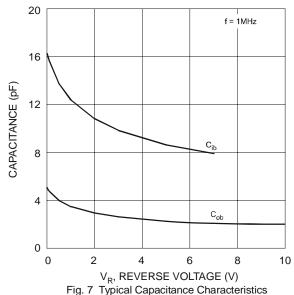
Fig. 2 Typical Collector Current vs. Collector Emitter Voltage

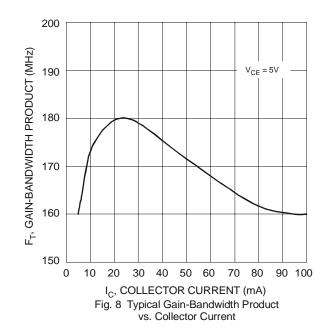


I_C, COLLECTOR CURRENT (mA)
Fig. 4 Typical Collector Emitter Saturation Voltage
vs. Collector Current







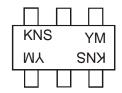


Ordering Information (Note 6)

Device	Packaging	Shipping			
BC846AS-7	SOT-363	3000/Tape & Reel			

6. For packaging details, go to our website at http://www.diodes.com/datasheets/ap02007.pdf.

Marking Information



KNS = Product Type Marking Code YM = Date Code Marking Y = Year ex: U = 2007 M = Month ex: 9 = September

Data Code Key

Year	2007	2008	2009	2010	2011	2012
Code	U	V	W	X	Υ	Z

Month	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Code	1	2	3	4	5	6	7	8	9	0	N	D

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