





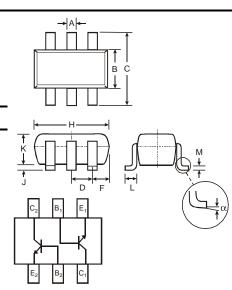
DUAL NPN SMALL SIGNAL SURFACE MOUNT TRANSISTOR

Features

- Ideally Suited for Automated Insertion
- For Switching and AF Amplifier Applications
- Ultra-Small Surface Mount Package
- Lead Free/RoHS Compliant (Note 2)
- Qualified to AEC-Q101 Standards for High Reliability
- "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: K1F, See Page 2
- Ordering & Date Code Information: See Page 2
- Weight: 0.006 grams



SOT-363							
Dim	Min	Max					
Α	0.10	0.30					
в	1.15	1.35					
С	2.00	2.20					
D	0.65 Nominal						
F	0.30	0.40					
Н	1.80	2.20					
J	Min I 0.10 0 1.15 2 0.65 Norm 0.30 0 1.80 2 0.90 2 0.25 0	0.10					
Κ	0.90	1.00					
L	0.25	0.40					
М	0.10	0.25					
α	0°	8°					
All Din	nensions	in mm					

Maximum Ratings $@T_A = 25^{\circ}C$ unless otherwise specified

Characteristic		Symbol	Value	Unit		
Collector-Base Voltage		V _{CBO}	50	V		
Collector-Emitter Voltage		V _{CEO}	45	V		
Emitter-Base Voltage		V _{EBO}	5.0	V		
Collector Current		lc	100	mA		
Peak Collector Current		Ісм	200	mA		
Peak Base Current		I _{BM}	200	mA		
Power Dissipation	(Note 1)	Pd	200	mW		
Thermal Resistance, Junction to Ambient	(Note 1)	$R_{ ext{ heta}}JA$	500	°C/W		
Operating and Storage Temperature Range		T _j , T _{STG}	-65 to +150	°C		

Electrical Characteristics $@T_A = 25^{\circ}C$ unless otherwise specified

Characteristic	Symbol	Min	Тур	Max	Unit	Test Condition		
DC Current Gain	(Note 3)	h _{FE}	200	_	450	_	$V_{CE} = 5.0V, I_{C} = 2.0mA$	
Collector-Emitter Saturation Voltage	(Note 3)	V _{CE(SAT)}		_	100 400	mV	$\begin{split} I_C &= 10 \text{mA}, \ I_B = 0.5 \text{mA} \\ I_C &= 100 \text{mA}, \ I_B = 5.0 \text{mA} \end{split}$	
Base-Emitter Saturation Voltage	(Note 3)	V _{BE(SAT)}	—	755	—	mV	$I_{C} = 10 \text{mA}, I_{B} = 0.5 \text{mA}$	
Base-Emitter Voltage	(Note 3)	V _{BE}	580	665	700	mV	$V_{CE} = 5.0V, I_{C} = 2.0mA$	
Collector Cutoff Current	(Note 3)	I _{CBO} I _{CBO}	_	_	15 5.0	nA μA	$\label{eq:VCB} \begin{array}{l} V_{CB} = 30V, \ I_E = 0 \\ V_{CB} = 30V, \ T_j = 125^\circC \end{array}$	
Emitter Cutoff Current	(Note 3)	I _{EBO}	_	—	100	nA	$V_{EB} = 5.0V, I_{C} = 0$	
Gain Bandwidth Product		f _T	100	_	_	MHz	$V_{CE} = 5.0V, I_C = 10mA,$ f = 100MHz	
Collector-Base Capacitance		Ссво	_	2.0	3.0	pF	V _{CB} = 10V, f = 1.0MHz	
Emitter-Base Capacitance		C _{EBO}	_	11	—	pF	V _{EB} = 0.5V, f = 1.0MHz	

Notes: 1. Device mounted on FR-4 PCB, 1 inch x 0.85 inch; pad layout as shown on Diodes Inc. suggested pad layout document AP02001, which can be found on our website at http://www.diodes.com/datasheets/ap02001.pdf.

2. No purposefully added lead.

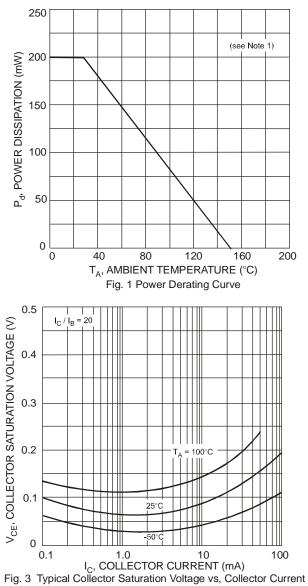
3. Short duration pulse test used to minimize self-heating effect.

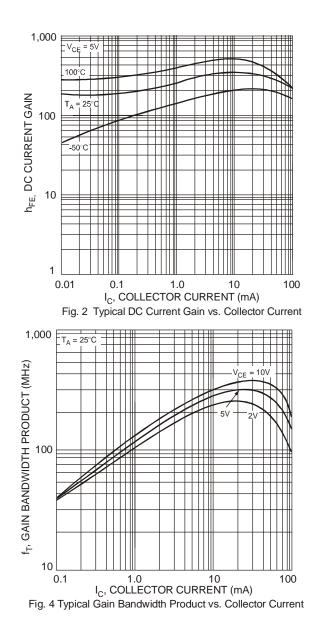
4. Diodes Inc.'s "Green" policy can be found on our website at http://www.diodes.com/products/lead_free/index.php.

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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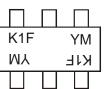


Ordering Information (Note 6)

Device	Packaging	Shipping
BC847BS-7-F	SOT-363	3000/Tape & Reel

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

Marking Information



K1F = Product Type Marking Code YM = Date Code Marking Y = Year ex: N = 2002 M = Month ex: 9 = September

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Date	Code	Kev

Year	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012
Code	J	K	L	М	Ν	Р	R	S	Т	U	V	W	Х	Y	Z
Month	Jan	Fe	b I	Mar	Apr	May	Ju	n	Jul	Aug	Sep	Oc	t I	Nov	Dec
Code	1	2		3	4	5	6		7	8	9	0		Ν	D

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