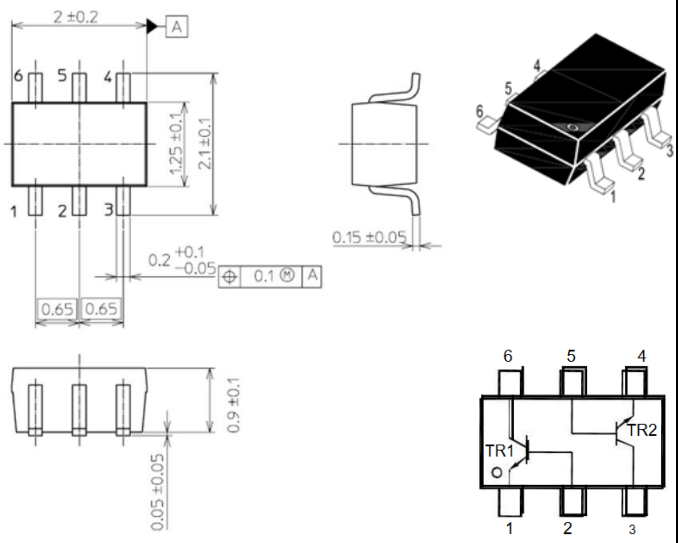
Silicon SMD NPN Epitaxial Transistors

Primary characteristics			
Symbol	**Parameter**	**Value**	**Unit**
V_{CBO}	Collector-base voltage	30 ~ 80	V
V_{CEO}	Collector-emitter voltage	30 ~ 65	V
V_{EBO}	Emitter-base voltage	5.0 ~ 6.0	V
P_{tot}	Total power dissipation	250	mW

Case dimensions



SOT-363

All dimensions in mm

Features

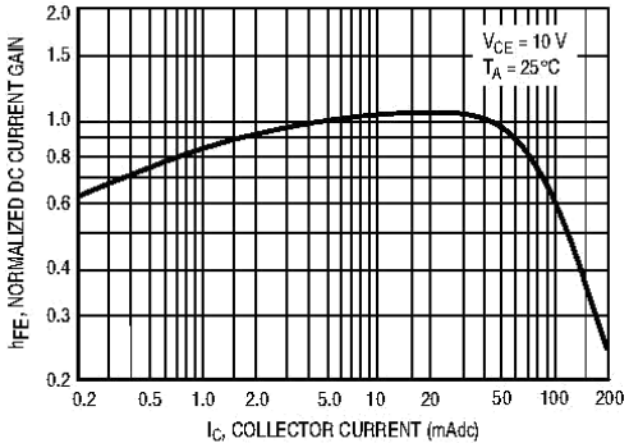
- **SOT-363** case for easy automatic insertion.
- Pb-free and **RoHS** compliant
- Epitaxial planar die construction
- Complementary **PNP** type available (BC856 ~ BC858)
- For switching and AF amplifier applications

Part numbering system			
BC84	**7**	**B**	**DW**
↓	↓	↓	↓
Series code	V_{CBO} classification (see: Absolute maximum ratings)	h_{FE} classification (see: Characteristics)	Series code

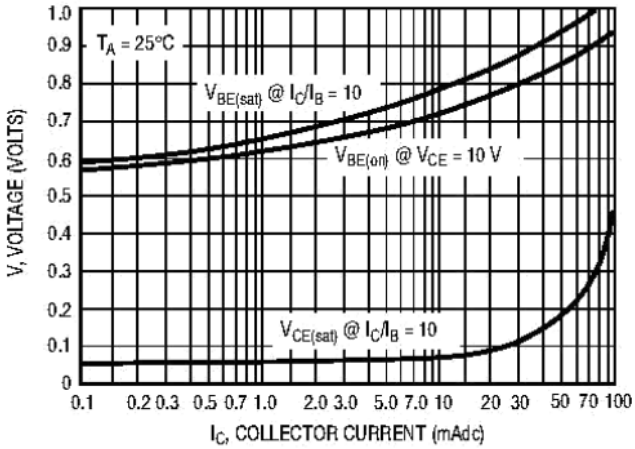
Absolute maximum ratings (T_a = 25°C)				
Parameter		**Symbol**	**Value**	**Unit**
Collector-base voltage	BC846xDW	V_{CBO}	80	V
	BC847xDW		50	
	BC848xDW		30	
Collector-emitter voltage	BC846xDW	V_{CEO}	65	V
	BC847xDW		45	
	BC848xDW		30	
Emitter-base voltage	BC846xDW, BC847xDW	V_{EBO}	6.0	V
	BC848xDW		5.0	
Collector current		I_C	100	mA
Peak collector current		I_{CM}	200	
Total power dissipation		P_{tot}	250	mW
Junction temperature		T_J	150	°C
Storage temperature range		T_{STG}	-55 ~ 150	

Characteristics (T_a = 25°C)						
Parameter		**Symbol**	**Test conditions**	**Value**		**Unit**
				Min	**Max**	
DC current gain	A	h_{FE}	V_{CE}=5.0V, I_C=2.0mA	110	220	-
	B			200	450	
	C			420	800	
Collector-base cutoff current		I_{CBO}	V_{CB}=30V	-	15	nA
Collector-base voltage	BC846xDW	V_{CBO}	I_C=10μA	80	-	V
	BC847xDW			50	-	
	BC848xDW			30	-	
Collector-emitter voltage	BC846xDW	$V_{(BR)CEO}$	I_C=10mA	65	-	V
	BC847xDW			45	-	
	BC848xDW			30	-	
Emitter-base voltage	BC846xDW, BC847xDW	$V_{(BR)EBO}$	I_E=1.0μA	6.0	-	V
	BC848xDW			5.0	-	
Collector-emitter saturation voltage		$V_{CE(sat)}$	I_C=10mA, I_B=0.5mA	-	250	mV
			I_C=100mA, I_B=5.0mA	-	600	
Base-emitter voltage		V_{BE}	V_{CE}=5.0V, I_C=2.0mA	580	700	mV
			V_{CE}=5.0V, I_C=10mA	-	770	
Transition frequency		f_T	V_{CE}=5.0V, I_C=10mA, f=100MHz	100	-	MHz
Output capacitance		C_{ob}	V_{CB}=10V, f=1.0MHz	-	4.5	pF

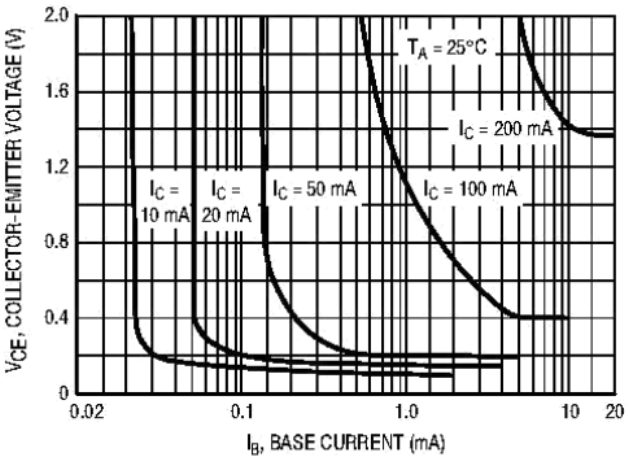
Normalized DC current gain



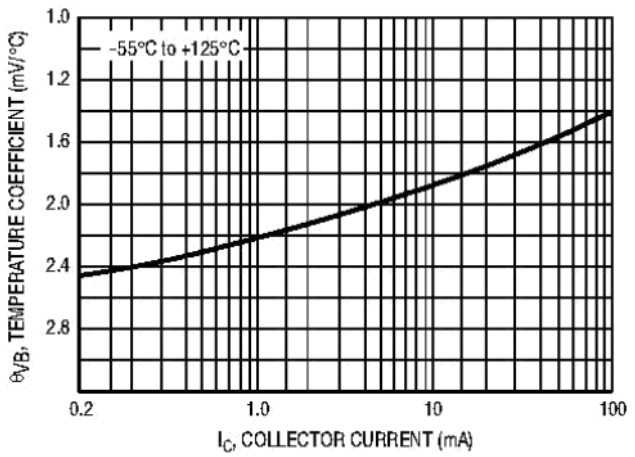
Saturation and ON voltages



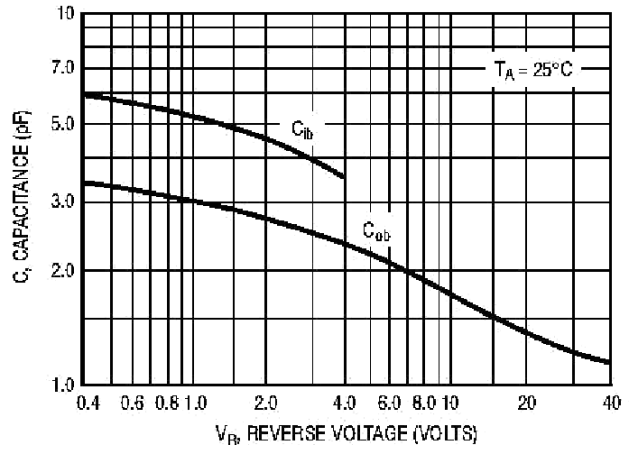
Collector saturation region



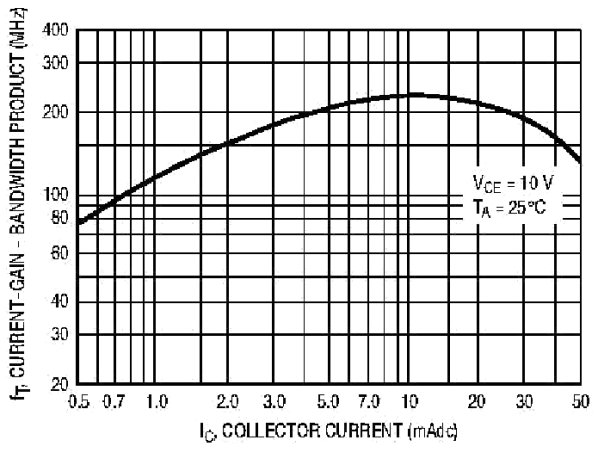
Base-emitter temperature coefficient



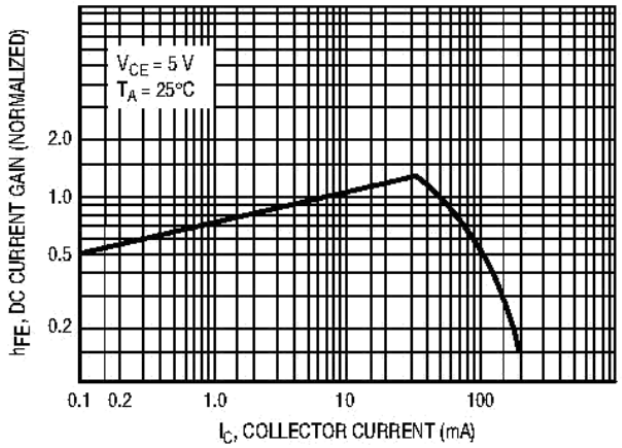
Capacitances



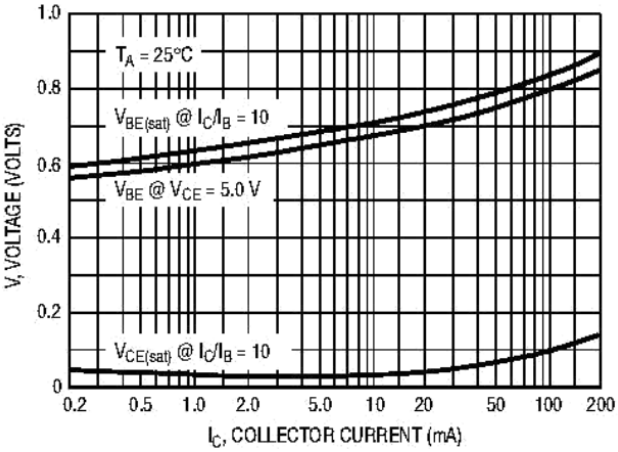
Current-gain bandwidth product



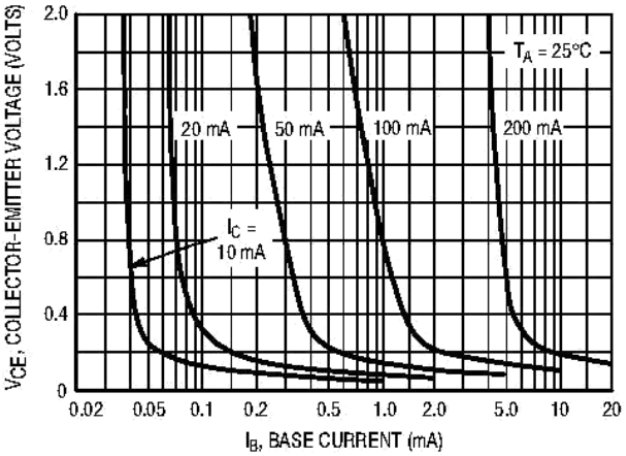
DC current gain



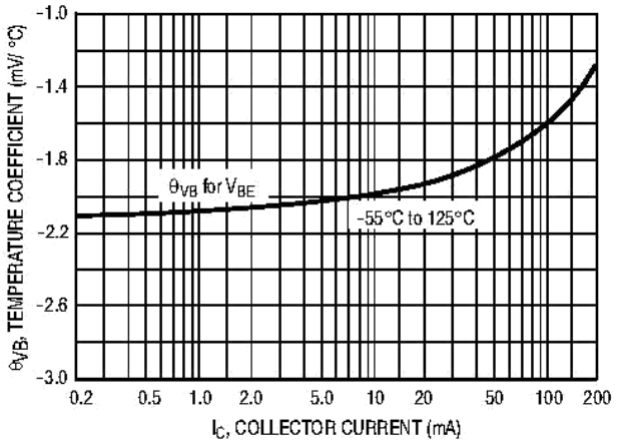
ON voltage



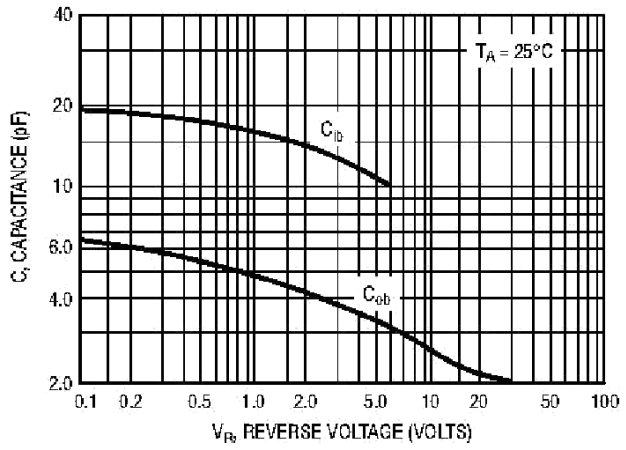
Collector saturation region



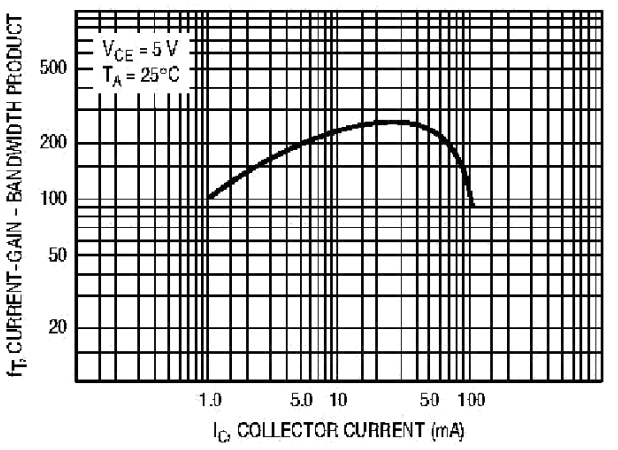
Base-emitter temperature coefficient

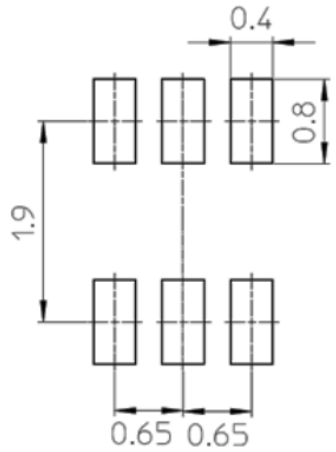


Capacitance



Current-gain bandwitch product



Suggested soldering pad layout

SOT-363

Ordering information			
Part Number	**Package**	**Shipping Quantity**	**Dimensions**
BC846xDW ~ BC848xDW	SOT-363	**3000 pcs / reel**	---

Disclaimer

Akyga semi reserves the right to make changes without notice to any product specification herein, to make corrections, modifications, enhancements or other changes. Akyga semi or anyone on its behalf assumes no responsibility or liability for any errors or inaccuracies. Data sheet specifications and its information contained are intended to provide a product description only. "Typical" parameters which may be included on Akyga semi data sheets and/ or specifications can and do vary in different applications and actual performance may vary over time. Akyga semi does not assume any liability arising out of the application or use of any product or circuit. Akyga semi products are not designed, intended or authorized for use in medical, life-saving implant or other applications intended for life-sustaining or other related applications where a failure or malfunction of component or circuitry may directly or indirectly cause injury or threaten a life without expressed written approval of Akyga semi. Customers using or selling Akyga semi components for use in such applications do so at their own risk and shall agree to fully indemnify Akyga semi and its subsidiaries harmless against all claims, damages and expenditures.