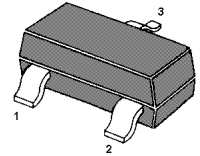# TWGMC

TRANSISTOR（NPN）

FEATURE

Ideally suited for automatic insertion

For Switching and AF Amplifier Applications

SOT-23

1. BASE
2. EMITTER
3. COLLECTOR

MAXIMUM RATINGS (T_A=25℃ unless otherwise noted)

Symbol	Parameter		Value	Units
V_{CBO}	Collector-Base Voltage	BC846	80	V
		BC847	50	
		BC848	30	
V_{CEO}	Collector-Emitter Voltage	BC846	65	V
		BC847	45	
		BC848	30	
V_{EBO}	Emitter-Base Voltage		6	V
I_C	Collector Current –Continuous		0.1	A
P_{C*}	Collector Power Dissipation		200	mW
T_J	Junction Temperature		150	℃
T_{stg}	Storage Temperature		-65-150	℃

DEVICE MARKING

BC846A=1A; BC846B=1B;

BC847A=1E; BC847B=1F; BC847C=1G;

BC848A=1J; BC848B=1K: BC848C=1L

ELECTRICAL CHARACTERISTICS (Tamb=25℃ unless otherwise specified)

Parameter		Symbol	Test conditions	MIN	TYP	MAX	UNIT
Collector-base breakdown voltage	BC846	V_{CBO}	$I_C= 10\mu A$, $I_E=0$	80			V
	BC847			50			
	BC848			30			
Collector-emitter breakdown voltage	BC846	V_{CEO}	$I_C= 10mA$, $I_B=0$	65			V
	BC847			45			
	BC848			30			
Emitter-base breakdown voltage		V_{EBO}	$I_E= 10\mu A$, $I_C=0$	6			V
Collector cut-off current	BC846	I_{CBO}	$V_{CB}=70 V$, $I_E=0$			0.1	μA
	BC847		$V_{CB}=50 V$, $I_E=0$				
	BC848		$V_{CB}=30 V$, $I_E=0$				
Collector cut-off current	BC846	I_{CEO}	$V_{CE}=60 V$, $I_B=0$			0.1	μA
	BC847		$V_{CE}=45 V$, $I_B=0$				
	BC848		$V_{CE}=30 V$, $I_B=0$				
Emitter cut-off current		I_{EBO}	$V_{EB}=5 V$, $I_C=0$			0.1	μA
DC current gain	BC846A,847A,848A	h_{FE}	$V_{CE}= 5V$, $I_C= 2mA$	110		220	
	BC846B,847B,848B			200		450	
	BC847C,BC848C			420		800	
Collector-emitter saturation voltage		$V_{CE}(sat)$	$I_C=100mA$, $I_B= 5mA$			0.5	V
Base-emitter saturation voltage		$V_{BE}(sat)$	$I_C=100mA$, $I_B= 5mA$			1.1	V
Transition frequency		f_T	$V_{CE}= 5 V$, $I_C= 10mA$ $f=100MHz$	100			MHz
Collector output capacitance		C_{ob}	$V_{CB}=10V$, f=1MHz			4.5	pF

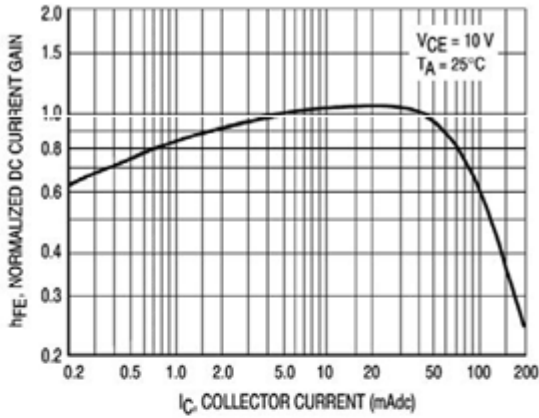**Typical Characteristics** **BC846A,B;BC847A, B, C;BC848A, B, C**
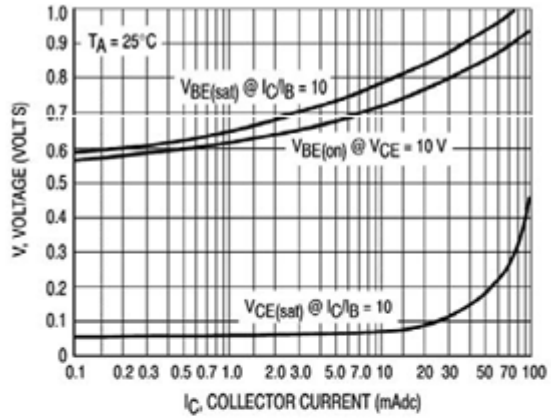
Figure 1. Normalized DC Current Gain
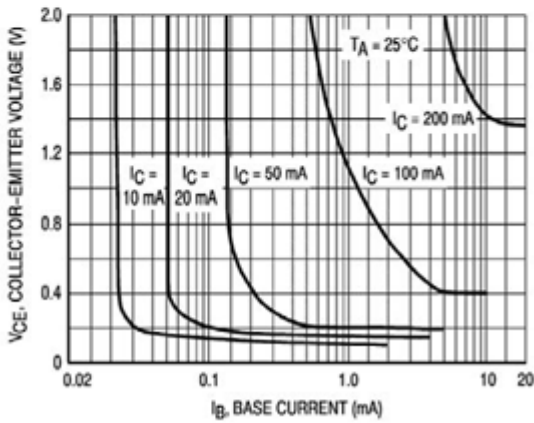
Figure 2. "Saturation" and "On" Voltages

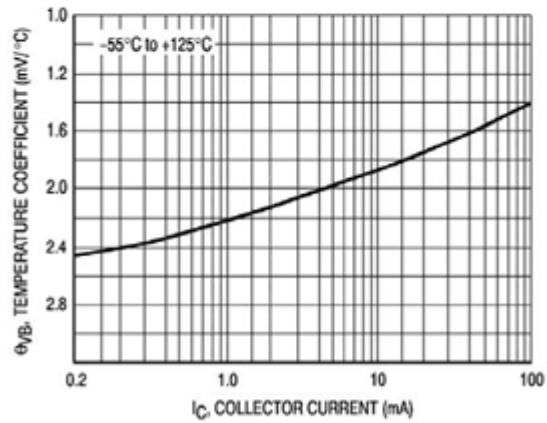Figure 3. Collector Saturation Region
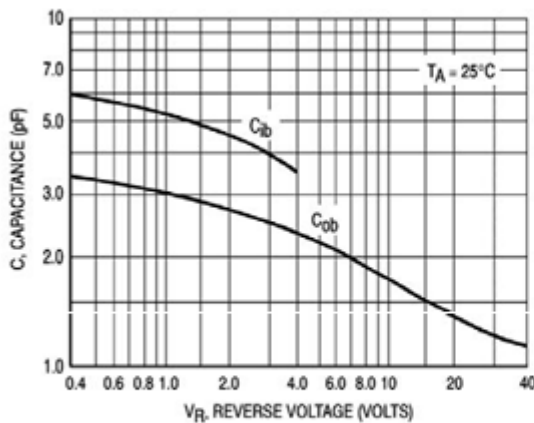
Figure 4. Base–Emitter Temperature Coefficient
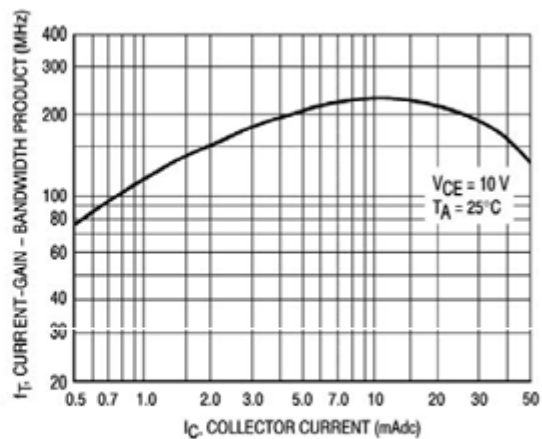
Figure 5. Capacitances

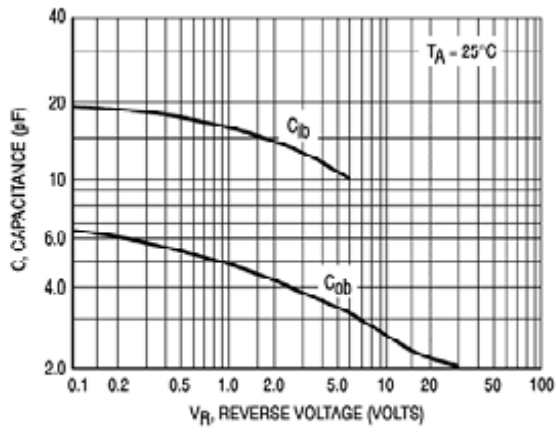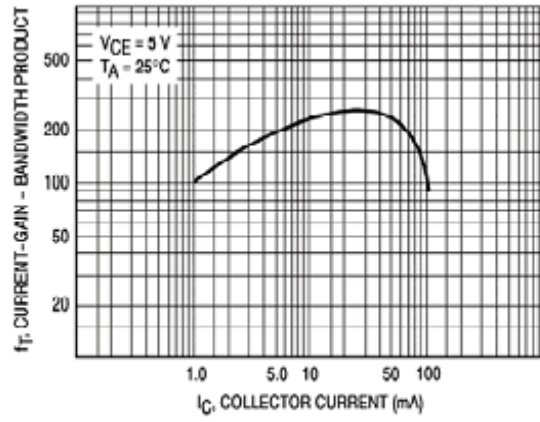Figure 6. Current–Gain – Bandwidth Product

Figure 11. Capacitance

Figure 12. Current–Gain – Bandwidth Product