

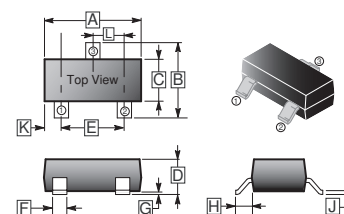
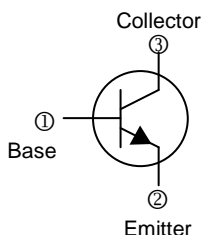
RoHS Compliant Product

A suffix of "-C" specifies halogen & lead-free

SOT-23

FEATURES

- For general AF application high collector current
- High current gain



REF.	Millimeter		REF.	Millimeter	
	Min.	Max.		Min.	Max.
A	2.70	3.04	G	-	0.18
B	2.10	2.80	H	0.40	0.60
C	1.20	1.60	J	0.08	0.20
D	0.89	1.40	K	0.6	REF.
E	1.78	2.04	L	0.85	1.15
F	0.30	0.50			

ABSOLUTE MAXIMUM RATINGS ($T_A = 25^\circ\text{C}$ unless otherwise specified)

PARAMETER	SYMBOL	RATING	UNIT
Collector to Base Voltage	V_{CBO}	40	V
Collector to Emitter Voltage	V_{CEO}	30	V
Emitter to Base Voltage	V_{EBO}	10	V
Collector Current - Continuous	I_C	500	mA
Collector Current - Peak	I_{CM}	800	mA
Collector Power Dissipation	P_C	350	mW
Thermal Resistance, Junction to Ambient Air	$R_{\theta JA}$	357	$^\circ\text{C}/\text{W}$
Junction, Storage Temperature	T_J, T_{STG}	150, -65~150	$^\circ\text{C}$

ELECTRICAL CHARACTERISTICS ($T_A = 25^\circ\text{C}$ unless otherwise specified)

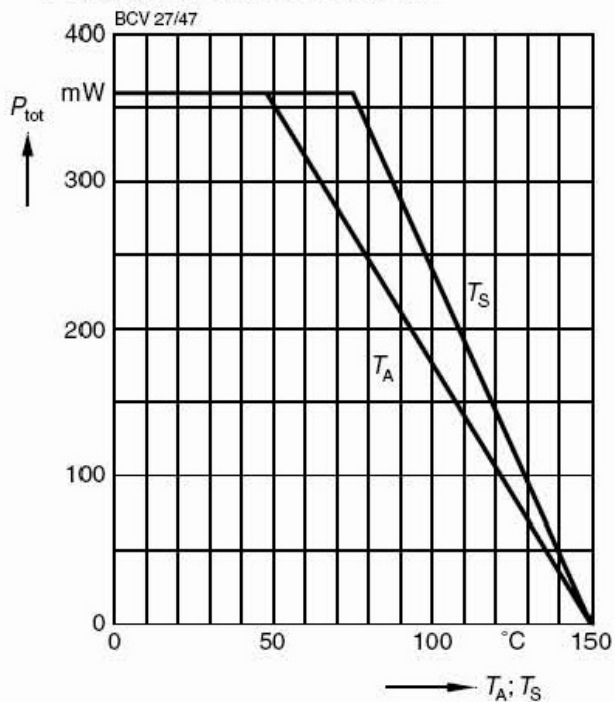
PARAMETER	SYMBOL	MIN	TYP	MAX	UNIT	TEST CONDITION
Collector to Base Breakdown Voltage	$V_{(BR)CBO}$	40	-	-	V	$I_C=100\mu\text{A}, I_E=0\text{A}$
Collector to Emitter Breakdown Voltage	$V_{(BR)CEO}$	30	-	-	V	$I_C=10\text{mA}, I_B=0\text{A}$
Emitter to Base Breakdown Voltage	$V_{(BR)EBO}$	10	-	-	V	$I_E=10\mu\text{A}, I_C=0\text{A}$
Collector Cut-Off Current	I_{CBO}	-	-	0.1	μA	$V_{CB}=30\text{V}, I_E=0\text{A}$
Emitter Cut-Off Current	I_{EBO}	-	-	0.1	μA	$V_{EB}=4\text{V}, I_C=0\text{A}$
DC Current Gain	h_{FE1}^*	4000	-	-		$V_{CE}=1\text{V}, I_C=100\mu\text{A}$
	h_{FE2}^*	10000	-	-		$V_{CE}=5\text{V}, I_C=10\text{mA}$
	h_{FE3}^*	20000	-	-		$V_{CE}=5\text{V}, I_C=100\text{mA}$
	h_{FE4}^*	4000	-	-		$V_{CE}=5\text{V}, I_C=500\text{mA}$
Collector to Emitter Saturation Voltage	$V_{CE(sat)}^*$	-	-	1	V	$I_C=100\text{mA}, I_B=0.1\text{mA}$
Base to Emitter Saturation Voltage	$V_{BE(sat)}^*$	-	-	1.5	V	$I_C=100\text{mA}, I_B=0.1\text{mA}$
Transition Frequency	f_T	-	170	-	MHz	$V_{CE}=5\text{V}, I_C=50\text{mA}, f=100\text{MHz}$
Collector Output Capacitance	C_{ob}	-	3.5	-	pF	$V_{CB}=10\text{V}, f=1\text{MHz}$

*Pulse test: Pulse width $\leq 300\mu\text{s}$; Duty Cycle $\leq 2.0\%$

CHARACTERISTIC CURVES

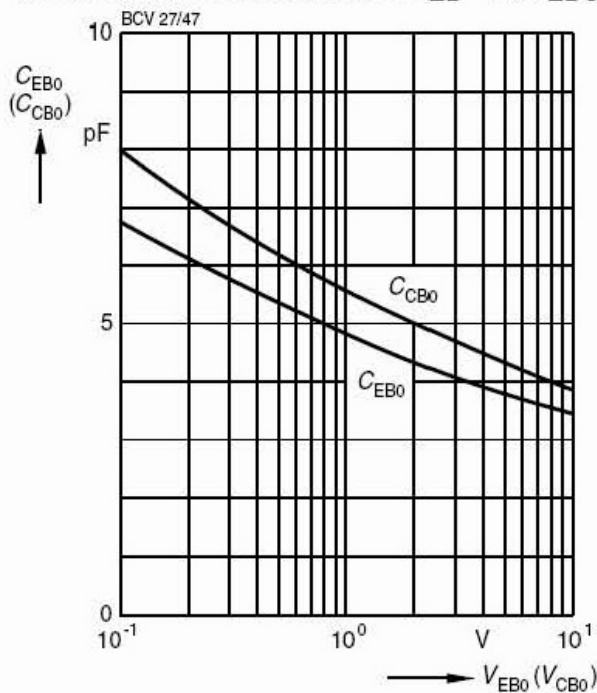
Total power dissipation $P_{tot} = f(T_A^*; T_S)$

* Package mounted on epoxy



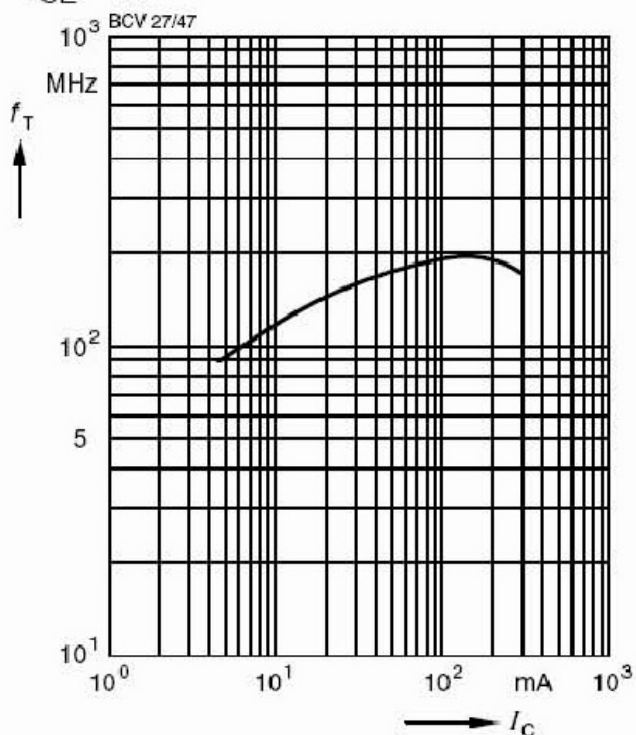
Collector-base capacitance $C_{CB} = f(V_{CB0})$

Emitter-base capacitance $C_{EB} = f(V_{EB0})$



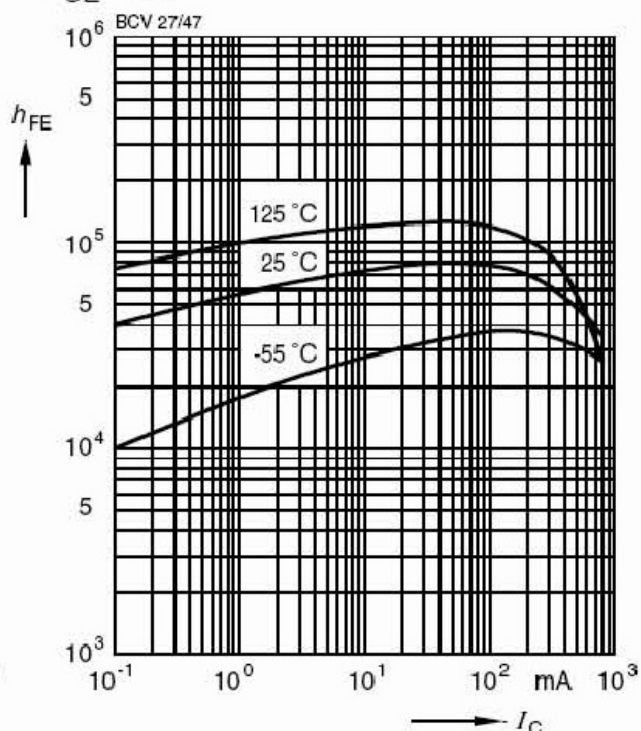
Transition frequency $f_T = f(I_C)$

$V_{CE} = 5V$



DC current gain $h_{FE} = f(I_C)$

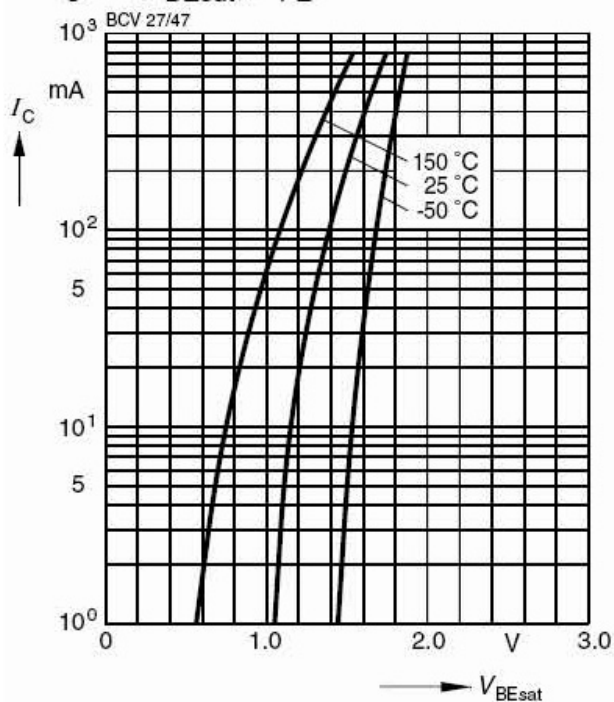
$V_{CE} = 5V$



CHARACTERISTIC CURVES

Base-emitter saturation voltage

$I_C = f(V_{BEsat}), h_{FE} = 1000$



Collector-emitter saturation voltage

$I_C = f(V_{CEsat}), h_{FE} = 1000$

