

BCV47

TRANSISTOR (NPN) Plastic-Encapsulate Transistors

FEATURES

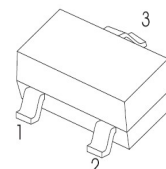
- High Collector Current
- High Current Gain

MARKING:FG

MAXIMUM RATINGS ($T_a=25^\circ\text{C}$ unless otherwise noted)

Symbol	Parameter	Value	Unit
V_{CBO}	Collector-Base Voltage	80	V
V_{CEO}	Collector-Emitter Voltage	60	V
V_{EBO}	Emitter-Base Voltage	10	V
I_C	Collector Current	500	mA
P_C	Collector Power Dissipation	300	mW
$R_{\theta JA}$	Thermal Resistance From Junction To Ambient	416	$^\circ\text{C/W}$
T_j	Junction Temperature	150	$^\circ\text{C}$
T_{stg}	Storage Temperature	-55~+150	$^\circ\text{C}$

SOT - 23

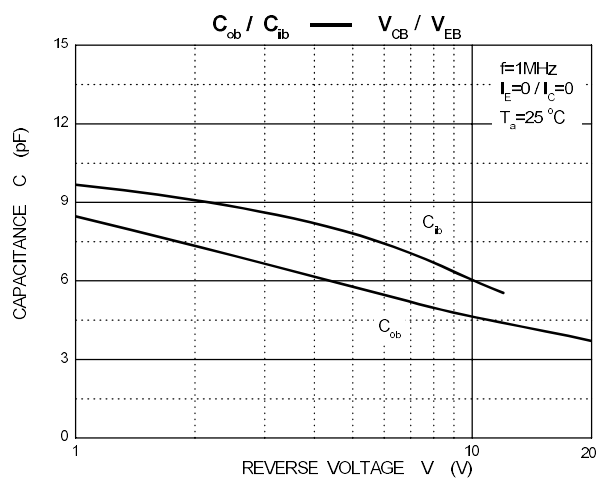
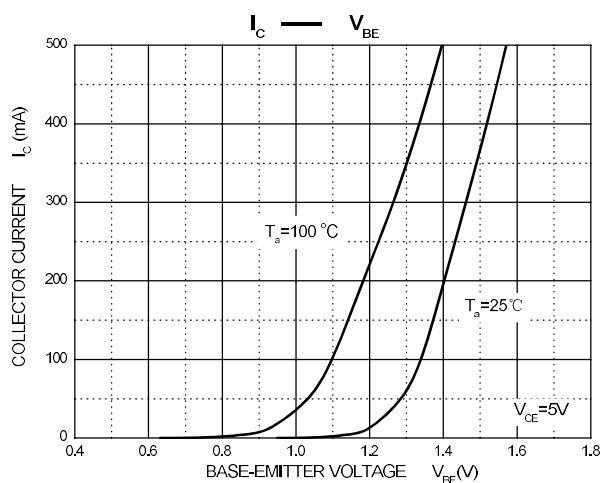
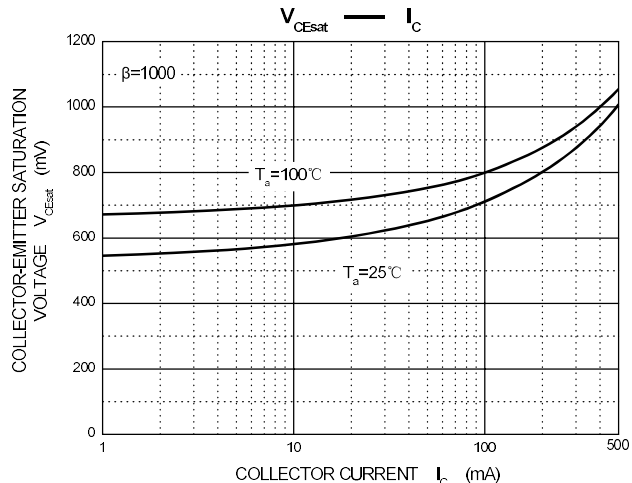
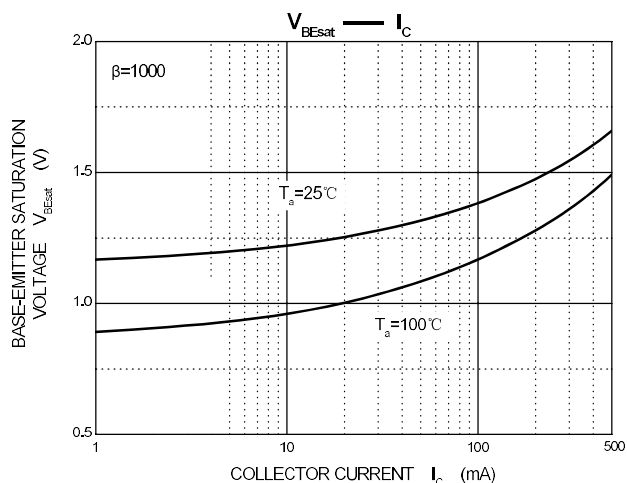
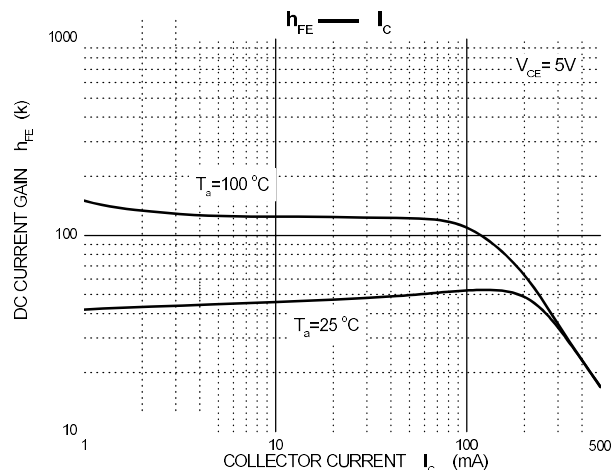
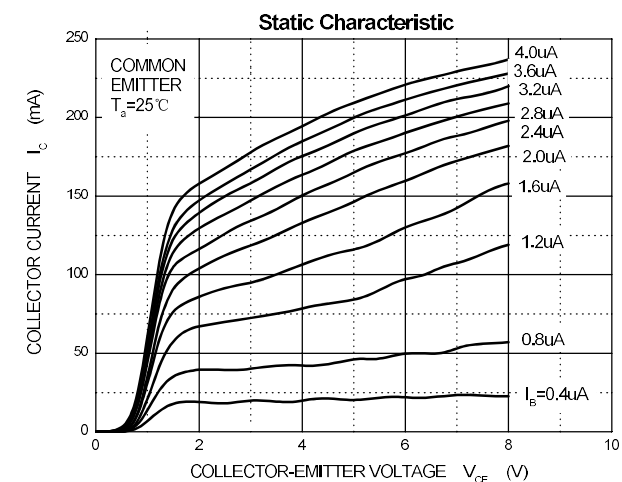


1. BASE
2. EMITTER
3. COLLECTOR

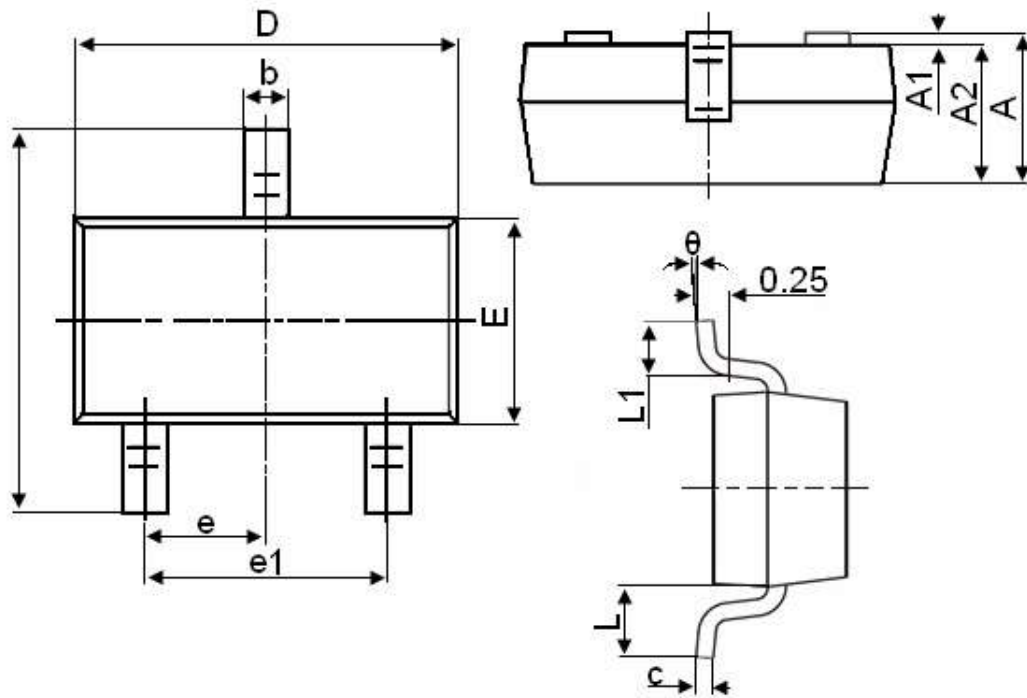
ELECTRICAL CHARACTERISTICS ($T_a=25^\circ\text{C}$ unless otherwise specified)

Parameter	Symbol	Test conditions	Min	Typ	Max	Unit
Collector-base breakdown voltage	$V_{(BR)CBO}$	$I_C=100\mu\text{A}$, $I_E=0$	80			V
Collector-emitter breakdown voltage	$V_{(BR)CEO}$	$I_C=10\text{mA}$, $I_B=0$	60			V
Emitter-base breakdown voltage	$V_{(BR)EBO}$	$I_E=10\mu\text{A}$, $I_C=0$	10			V
Collector cut-off current	I_{CBO}	$V_{CB}=60\text{V}$, $I_E=0$			0.1	μA
Emitter cut-off current	I_{EBO}	$V_{EB}=4\text{V}$, $I_C=0$			0.1	μA
DC current gain	$h_{FE(1)}$	$V_{CE}=1\text{V}$, $I_C=100\mu\text{A}$	2000			
	$h_{FE(2)}$	$V_{CE}=5\text{V}$, $I_C=10\text{mA}$	4000			
	$h_{FE(3)}$	$V_{CE}=5\text{V}$, $I_C=100\text{mA}$	10000			
	$h_{FE(4)}$	$V_{CE}=5\text{V}$, $I_C=0.5\text{A}$	2000			
Collector-emitter saturation voltage	$V_{CE(sat)}$	$I_C=100\text{mA}$, $I_B=0.1\text{mA}$			1	V
Base-emitter saturation voltage	$V_{BE(sat)}$	$I_C=100\text{mA}$, $I_B=0.1\text{mA}$			1.5	V
Transition frequency	f_T	$V_{CE}=5\text{V}$, $I_C=50\text{mA}$, $f=100\text{MHz}$		170		MHz
Collector output capacitance	C_{ob}	$V_{CB}=10\text{V}$, $I_E=0$, $f=1\text{MHz}$		3.5		pF
ESD-Human Body Model	ESD-HBM				2000	V
ESD-Machine Model	ESD-MM				200	V

Typical Characteristics



SOT-23 Package Outline Dimensions



Symbol	Dimensions in Millimeters	
	MIN.	MAX.
A	0.900	1.150
A1	0.000	0.100
A2	0.900	1.050
b	0.300	0.500
c	0.080	0.150
D	2.800	3.000
E	1.200	1.400
E1	2.250	2.550
e	0.950TYP	
e1	1.800	2.000
L	0.550REF	
L1	0.300	0.500
θ	0°	8°