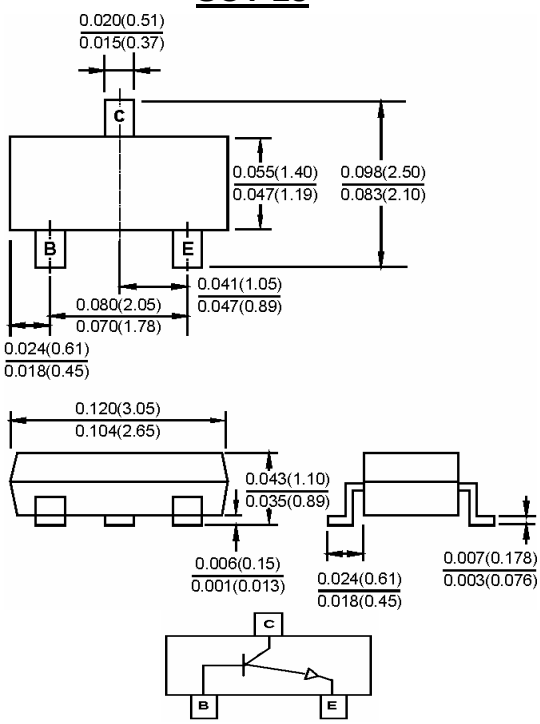
TAIWAN SEMICONDUCTOR

RoHS COMPLIANCE

BC817-16
BC817-25
BC817-40

0.3 Watts NPN Plastic-Encapsulate Transistors

SOT-23



Dimensions in inches and (millimeters)

Features

- ✧ Ideally suited for automatic insertion
- ✧ Epitaxial planar die construction
- ✧ For switching, AF driver and amplifier applications
- ✧ Complementary PNP type available(BC807)
- ✧ Qualified to AEC-Q101 standards for high reliability

Mechanical Data

- ✧ Case: SOT-23, Molded plastic
- ✧ Case material: molded plastic. UL flammability classification rating 94V-0
- ✧ Moisture sensitivity: Level 1 per J-STD-020C
- ✧ Terminals: Solderable per MIIL-STD-202, Method 208
- ✧ Lead free plating
- ✧ Marking: -16:6A, -25: 6B, -40: 6C
- ✧ Weight: 0.008 gram (approx.)

Maximum Ratings T_A=25 °C unless otherwise specified

Type Number	Symbol	BC817 -16	BC817 -25	BC817 -40	Units
Collector-base breakdown voltage I_C=10uA, I_E=0	V_{CBO}	50			V
Collector-emitter breakdown voltage I_C=10mA, I_B=0	V_{CEO}	45			V
Collector current - continuous	I_C	0.5			A
Power dissipation	P_C	0.3			W
Emitter-base breakdown voltage I_E=1uA, I_C=0	V_{EBO}	5			V
Collector cut-off current V_{CB}=45V I_E=0	I_{CBO}	0.1			uA
Emitter cut-off current V_{EB}=4V I_C=0	I_{EBO}	0.1			uA
Collector-emitter saturation voltage I_C=500mA, I_B=50mA	V_{CE}(sat)	0.7			V
Base-emitter saturation voltage I_C=500mA, I_B=50mA	V_{BE}(sat)	1.2			V
Base-emitter voltage V_{CE}=1V I_C=500mA	$V_{BE(ON)}$	1.2			V
Collecter capacitance V_{CB}=10V f=1MHz	Cob	10			pF
Transition frequency V_{CE}=5V I_C=10mA f=100MHz	f_T	100			MHz
DC current gain	h_{FE}	100-250	160-400	250-600	
DC current gain V_{CE}=1V I_C=100mA V_{CE}=1V I_C=500mA	$h_{FE(1)}$ $h_{FE(2)}$	100 >40	>40	600 >40	
Operating and Storage Temperature Range	T_J, T_{STG}	-55 to + 150			°C

RATINGS AND CHARACTERISTIC CURVES (BC817-16, BC817-25, BC817-40)

FIG.1- TYPICAL PULSED CURRENT GAIN VS COLLECTOR CURRENT

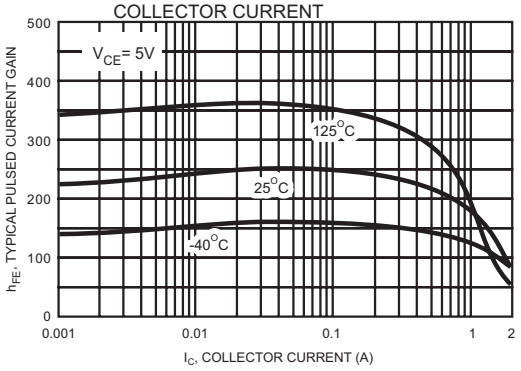


FIG.2- COLLECTOR-EMITTER SATURATION VOLTAGE VS COLLECTOR CURRENT

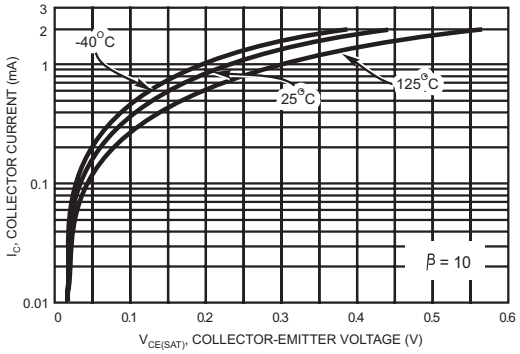


FIG.3- BASE-EMITTER SATURATION VOLTAGE VS COLLECTOR CURRENT

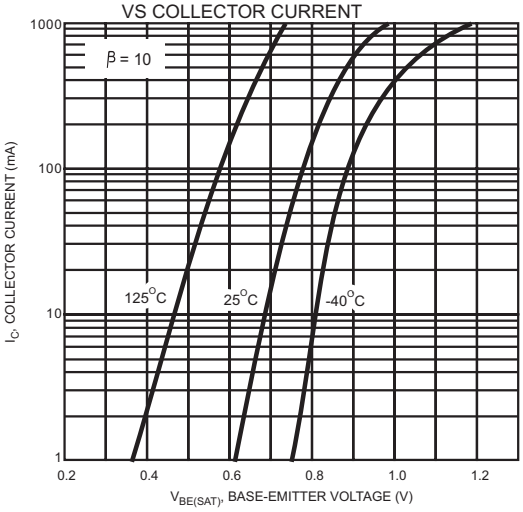


FIG.4- BASE-EMITTER ON VOLTAGE VS COLLECTOR CURRENT

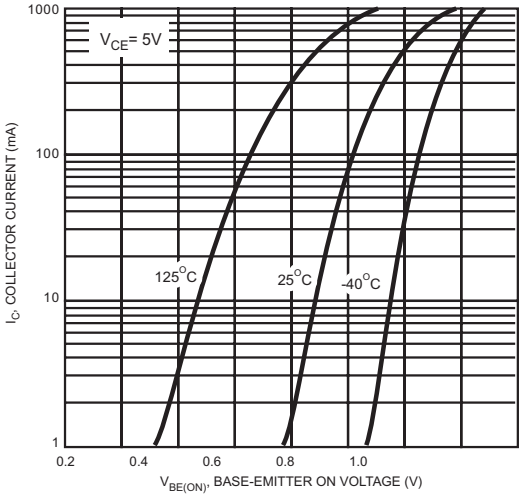


FIG.5- COLLECTOR-CUT OFF CURRENT VS AMBLENT TEMPERATURE

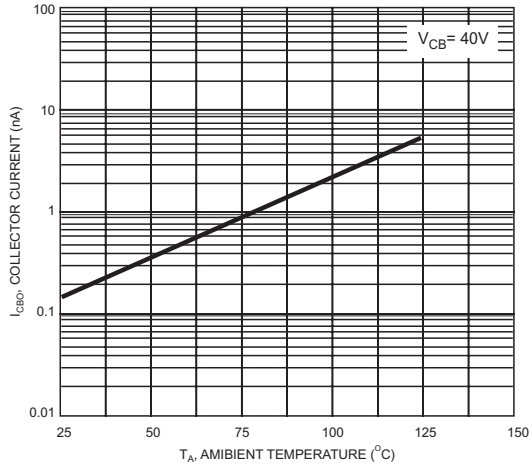
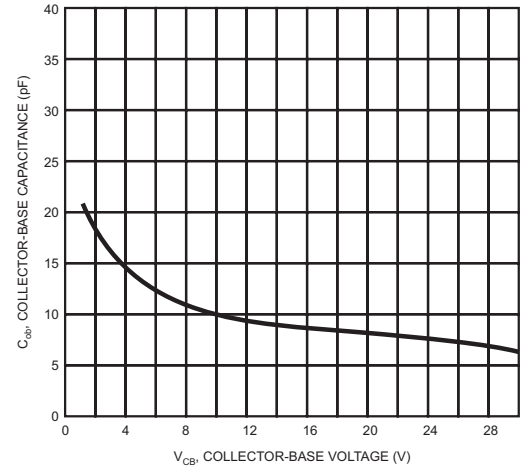


FIG.6- COLLECTOR-BASE CAPACITANCE VS COLLECTOR-BASE VOLTAGE



RATINGS AND CHARACTERISTIC CURVES (BC817-16, BC817-25, BC817-40)

FIG.7- POWER DISSIPATION VS AMBLENT TEMPERATURE

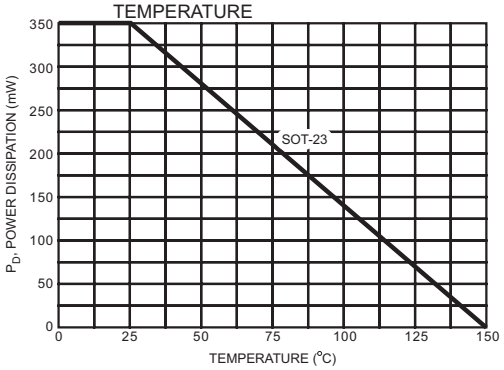


FIG.8- GAIN BANDWIDTH PRODUCT VS COLLECTOR CURRENT