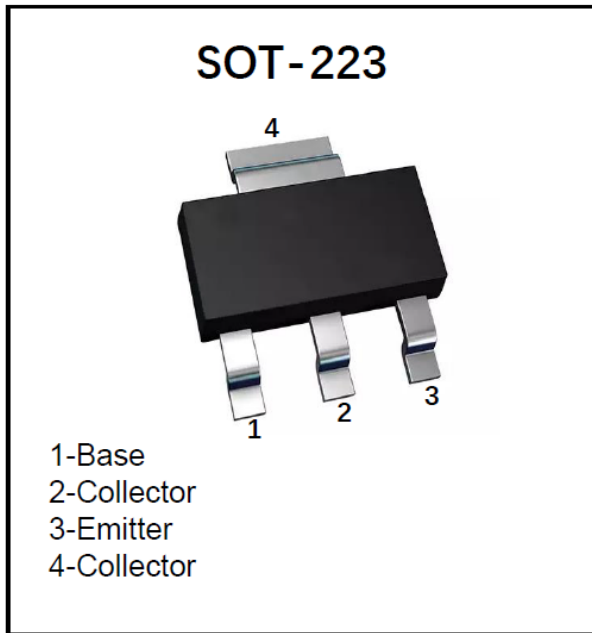


PNP Plastic-Encapsulate Transistor



Features

- Epoxy meets UL-94 V-0 flammability rating
- Moisture Sensitivity Level 1
- High power dissipation capability
- Part no. with suffix "Q" means AEC-Q101 qualified

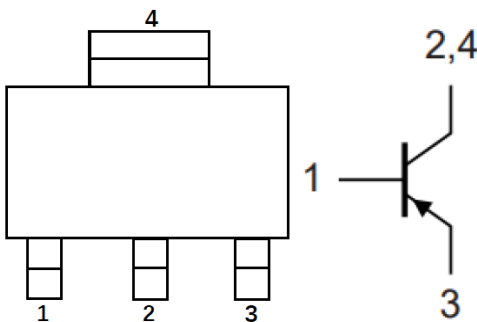
Application

- Linear voltage regulators、 Low-side switches
- Battery-driven devices、 MOSFET drivers
- Amplifiers

Mechanical Data

- **Package:** SOT-223
- **Terminals:** Tin plated leads, solderable per J-STD-002 and JESD22-B102
- **Marking:** BCP53-16

■Equivalent circuit



■Ordering Information (Example)

PREFERED P/N	PACKING CODE	UNIT WEIGHT(g)	MINIMUM PACKAGE(pcs)	INNER BOX QUANTITY(pcs)	OUTER CARTON QUANTITY(pcs)	DELIVERY MODE
BCP53-16Q	F2	Approximate 0.11	2500	5000	25000	13" reel



BCP53-16Q

■ Maximum Ratings (Ta=25°C unless otherwise noted)

Item	Symbol	Unit	Value
Collector-Emitter Voltage	V_{CEO}	V	-80
Collector-Base Voltage	V_{CBO}	V	-100
Emitter-Base Voltage	V_{EBO}	V	-5
Collector Current	I_C	A	-1
Power Dissipation (*)	P_D	W	1.5
Thermal Resistance From Junction To Ambient (*)	$R_{\theta JA}$	°C/W	83.3
Thermal Resistance From Junction To Solder Point	$R_{\theta JS}$	°C/W	16
Operation Junction Temperature	T_j	°C	-55 to +150
Storage Temperature	T_{stg}	°C	-55 to +150

(*) Device mounted on FR-4 PCB 1.575 x 1.575 x 0.0625 inch; mounting pad for collector =0.93 sq in

■ Electrical Characteristics (Ta=25°C unless otherwise noted)

Item	Symbol	Unit	Conditions	Min	TYP	Max
Collector-base breakdown voltage	V_{CBO}	V	$I_C = -100\mu A, I_E = 0$	-100	-	-
Collector-emitter breakdown voltage	V_{CEO}	V	$I_C = -10mA, I_B = 0$	-80	-	-
Emitter-base breakdown voltage	V_{EBO}	V	$I_E = -100\mu A, I_C = 0$	-5	-	-
Collector-base cut-off current	I_{CBO}	nA	$V_{CB} = -30V, I_E = 0$	-	-	-100
Collector-emitter cut-off current	I_{EBO}	nA	$V_{EB} = -5V, I_C = 0$	-	-	-100
DC current gain	h_{FE}		$V_{CE} = -2V, I_C = -5mA$	63	-	-
	h_{FE}		$V_{CE} = -2V, I_C = -150mA$	100	-	250
	h_{FE}		$V_{CE} = -2V, I_C = -500mA$	40	-	-
Collector-emitter saturation voltage	$V_{CE(sat)}$	V	$I_C = -500mA, I_B = -50mA$	-	-	-0.5
Base-Emitter Voltage	V_{BE}	V	$V_{CE} = -2V, I_C = -500mA$	-	-	-1
Collector-Base Capacitance	C_{ob}	pF	$V_{CB} = -10V, I_E = 0, f = 1MHz$	-	15	-
Transition frequency	fT	MHz	$V_{CE} = -10V, I_C = -50mA, f = 30MHz$	100	-	-



■ Characteristics (Typical)

Fig.1 - Static characteristic

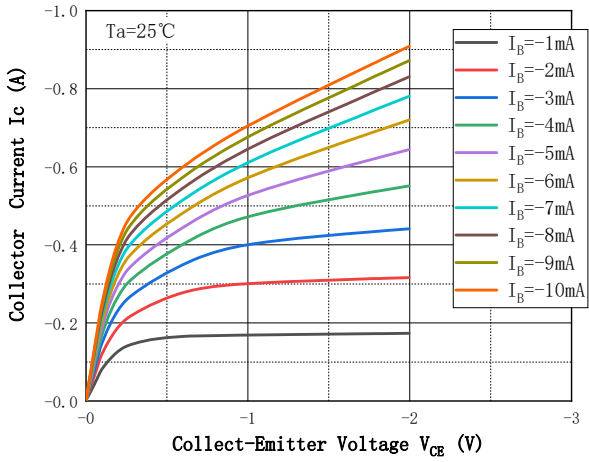


Fig.2 - DC Current Gain

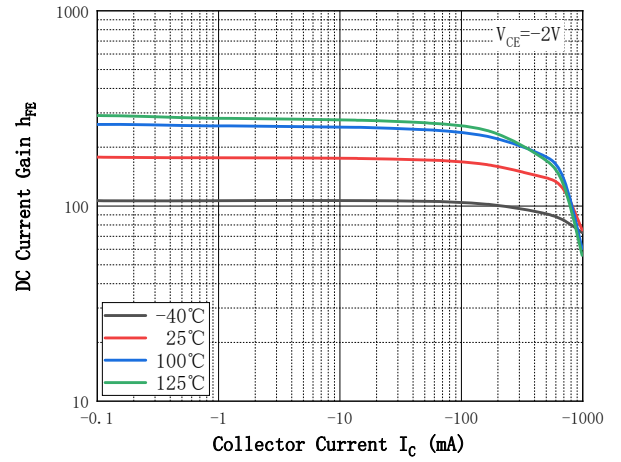


Fig.3 - Collect-Emittor Saturation Voltage

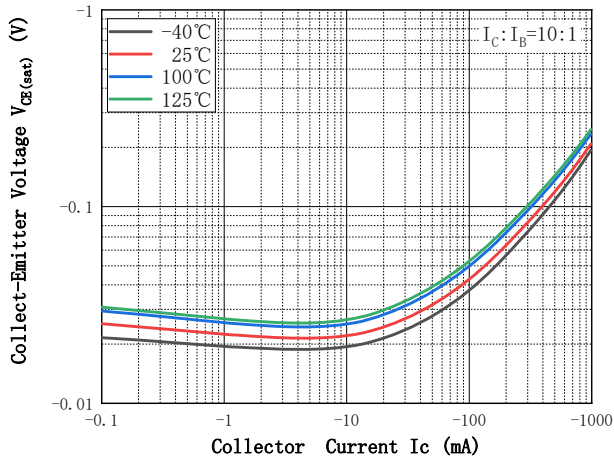


Fig.4 - Base-Emittor Voltage

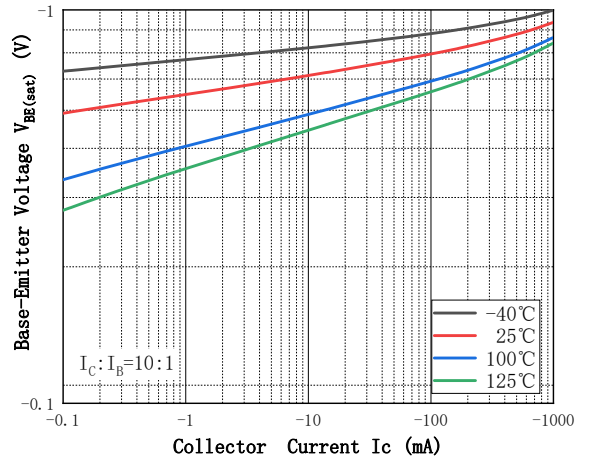


Fig.5 - Base-Emittor On Voltage

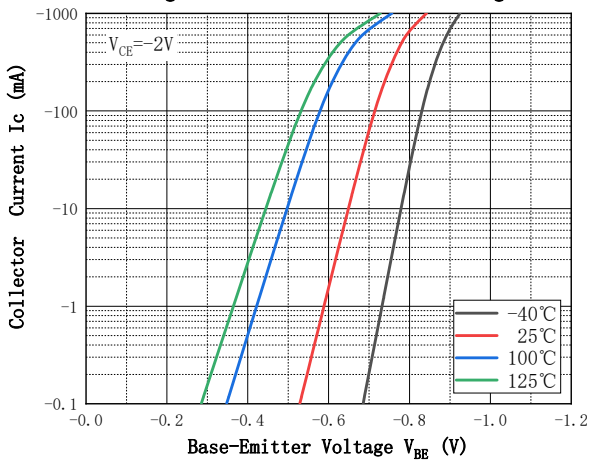


Fig.6 - Cob/Cib—VCB/VEB

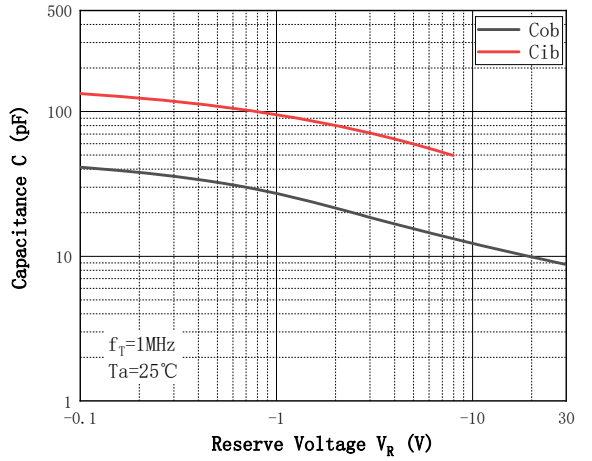
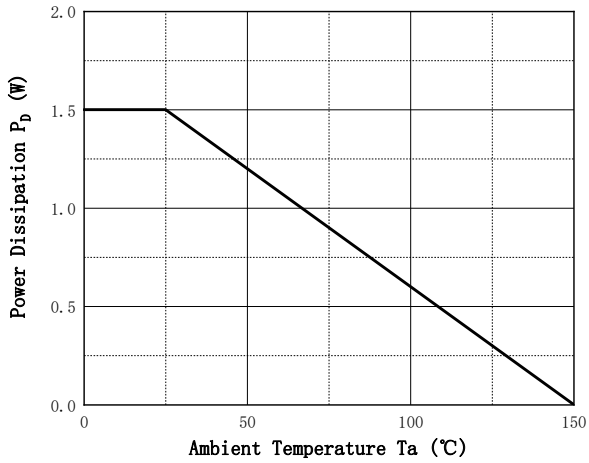
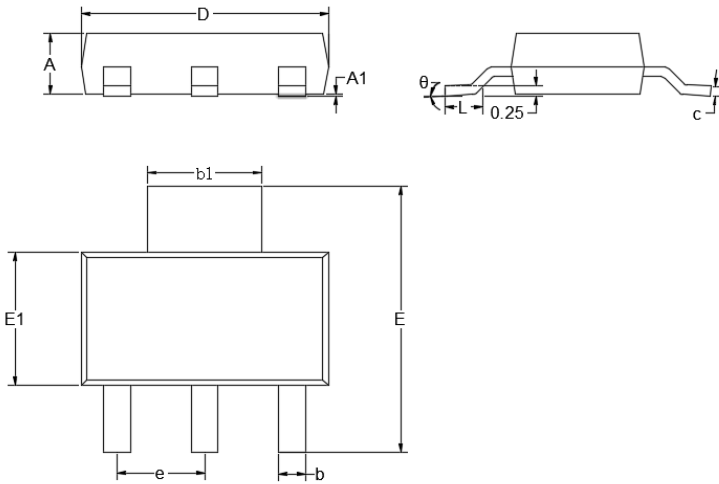


Fig.7 - Power Derating Curve

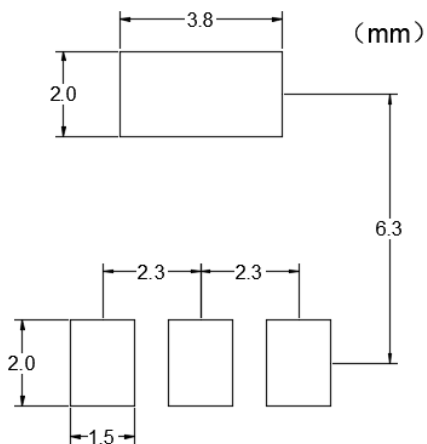


■SOT-223 Package Outline Dimensions



DIMENSIONS				
DIM	INCHES		MM	
	MIN	MAX	MIN	MAX
A	0.0591	0.0670	1.5000	1.7000
A1	0.0008	0.0039	0.0200	0.1000
b	0.0259	0.0330	0.6600	0.8400
b1	0.1140	0.1220	2.9000	3.1000
c	0.0090	0.0138	0.2300	0.3500
D	0.2480	0.2640	6.3000	6.7000
E	0.2637	0.2874	6.7000	7.3000
E1	0.1290	0.1460	3.3000	3.7000
e	0.0866	0.0945	2.2000	2.4000
L	0.0295	0.0492	0.7500	1.2500
θ	0°	10°	0°	10°

■SOT-223 Suggested Pad Layout





Disclaimer

The information presented in this document is for reference only. Yangzhou Yangjie Electronic Technology Co., Ltd. reserves the right to make changes without notice for the specification of the products displayed herein to improve reliability, function or design or otherwise.

The product listed herein is designed to be used with automotive electronics, are not designed for use in medical, life-saving, life-sustaining, or military, Yangjie or anyone on its behalf, assumes no responsibility or liability for any damages resulting from such improper use of sale.

This publication supersedes & replaces all information previously supplied. For additional information, please visit our website [http:// www.21yangjie.com](http://www.21yangjie.com) , or consult your nearest Yangjie's sales office for further assistance.