

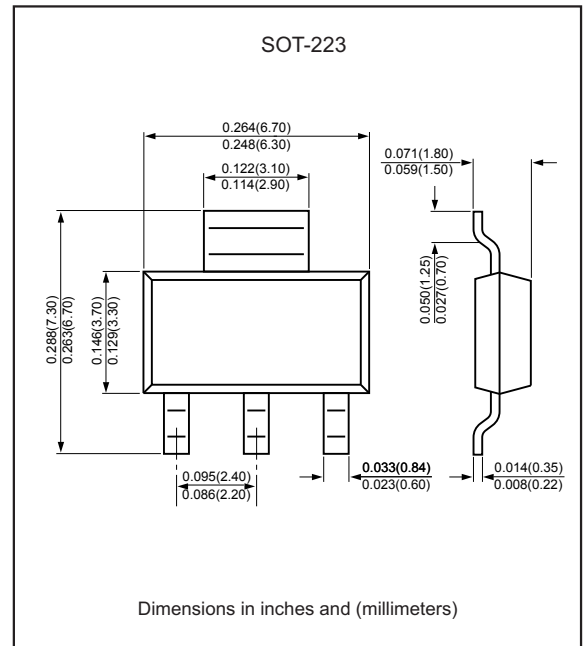
### Features

- High collector-emitter breakdown voltage. ( $V_{CEO} = 80V @ I_C = 10mA$ )
- Capable of 1.5W power dissipation.
- Lead-free parts for green partner, exceeds environmental standards of MIL-STD-19500 /228
- Compliant to Halogen-free
- Suffix "-Q1" for AEC-Q101

### Mechanical data

- Epoxy: UL94-V0 rated flame retardant
- Case : Molded plastic, SOT-223
- Terminals : Solder plated, solderable per MIL-STD-750, Method 2026
- Mounting Position : Any

### Package outline



### Maximum ratings (AT $T_A = 25^\circ C$ unless otherwise noted)

Item	Symbol	Unit	Value
Collector-Base Voltage	$V_{CBO}$	V	100
Collector-Emitter Voltage	$V_{CEO}$	V	80
Emitter-Base Voltage	$V_{EBO}$	V	5
Collector Current -Continuous	$I_C$	A	1
Total Device Dissipation (*)	$P_D$	W	1.5
Thermal Resistance From Junction To Ambient (*)	$R_{\theta JA}$	$^\circ C/W$	83.3
Thermal Resistance From Junction To Solder Point (*)	$R_{\theta JS}$	$^\circ C/W$	16
Junction Temperature	$T_j$	$^\circ C$	-55 to +150
Storage Temperature	$T_{STG}$	$^\circ C$	-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	$I_E = 10\mu A, I_C = 0$	5		
Collector-base cut-off current	$I_{CBO}$	$\mu A$	$V_{CB} = 30V, I_E = 0$			0.1
DC current gain	$h_{FE}$		$V_{CE} = 2V, I_C = 5mA$	25		
	$h_{FE}$		$V_{CE} = 2V, I_C = 150mA$	100		250
	$h_{FE}$		$V_{CE} = 2V, I_C = 500mA$	25		
Collector-emitter saturation voltage	$V_{CE(sat)}$	V	$I_C = 500mA, I_B = 50mA$			0.5
Base-emitter saturation voltage	$V_{BE}$	V	$V_{CE} = 2V, I_C = 500mA$			1.0

## Rating and characteristic curves

Fig.1 - Collector Saturation Region

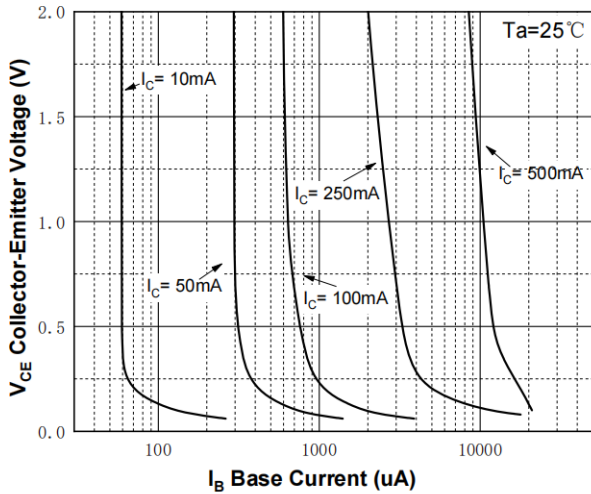


Fig.2 - DC Current Gain

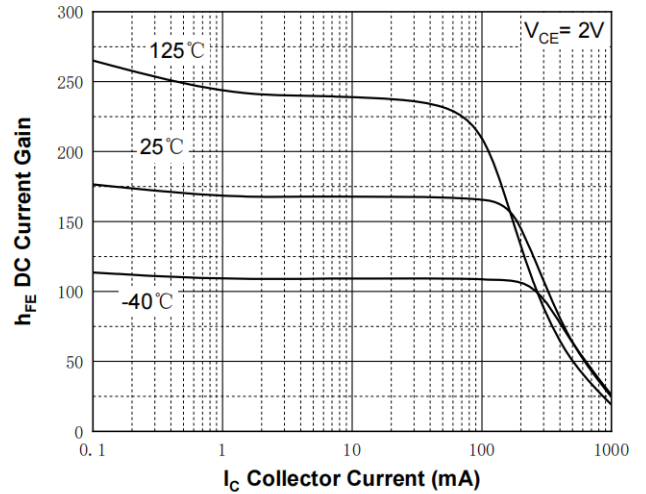


Fig.3 - Collector-Emitter Saturation Voltage vs. Collector Current

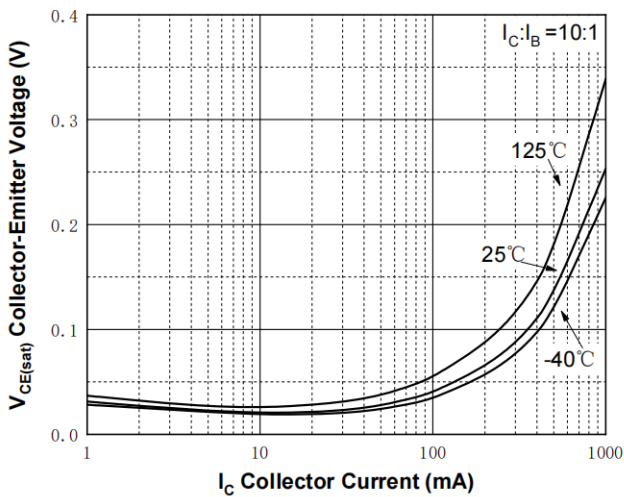


Fig.4 - Base-Emitter Saturation Voltage vs. Collector Current

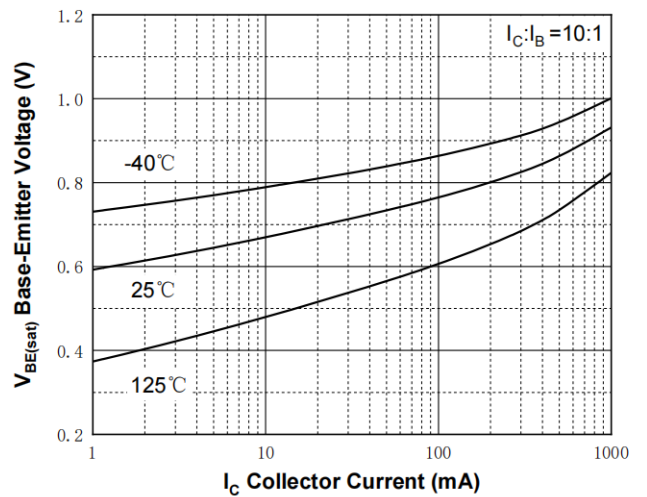


Fig.5 - Capacitance

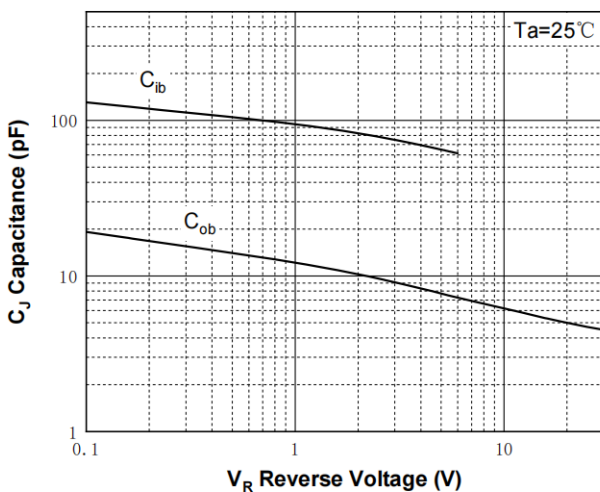
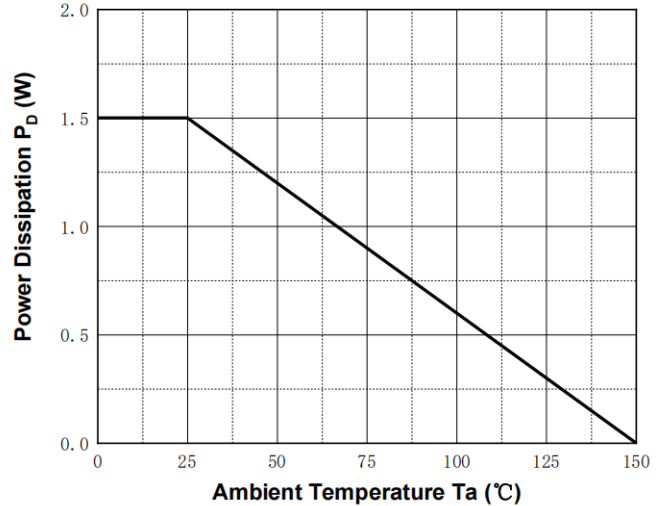
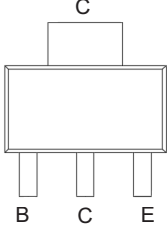
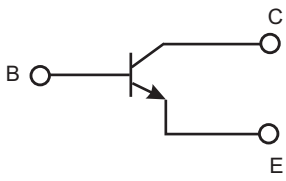


Fig.6 - Power Derating Curve



### Pinning information

Pin	Simplified outline	Symbol
PinB Base PinC Collector PinE Emitter		

### Marking

Type number	Marking code
BCP56-16-Q1	BCP56-16

### Suggested solder pad layout

