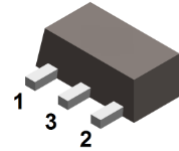
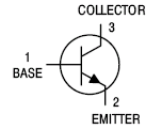


Features

- NPN Silicon Epitaxial Planar Transistor
- Low saturation voltages
- Compliant to Halogen-free
- Suffix "-Q1" for AEC-Q101



SOT-89

Mechanical Data

- Case: SOT-89
- Molding compound: UL flammability classification rating 94V-0
- Terminals: Tin-plated; solderability per MIL-STD-202, Method 208
- Marking Code : N95

Maximum Ratings (@ T_A = 25°C unless otherwise specified)

Parameter	Symbol	Value	Unit
Collector-Base Breakdown Voltage	V _{CBO}	170	V
Collector-Emitter Breakdown Voltage	V _{CEO}	150	V
Emitter-Base Breakdown Voltage	V _{EBO}	7	V
Collector Current (Continuous)	I _C	1	A
Peak Pulse Current	I _{CM}	2	A

Thermal Characteristics

Parameter	Symbol	Value	Unit
Power Dissipation ^{*1}	P _D	1	W
Thermal Resistance Junction-to-Air ^{*1}	R _{θJA}	250	°C/W
Junction Temperature	T _J	150	°C
Storage Temperature Range	T _{STG}	-55 ~ +150	°C

Note 1: For the device mounted on 15mm x 15mm x 1.6mm FR4 PCB with high coverage of single sided 1oz copper, in still air conditions

Electrical Characteristics (@ $T_A = 25^\circ\text{C}$ unless otherwise specified)

Parameter	Symbol	Test Condition	Min.	Typ.	Max.	Unit
Collector-Base Breakdown Voltage	$V_{(BR)CBO}$	$I_C = 100\mu\text{A}, I_E = 0$	170	-	-	V
Collector-Emitter Breakdown Voltage	$V_{(BR)CEO}$	$I_C = 10\text{mA}, I_B = 0$	150	-	-	V
Emitter-Base Breakdown Voltage	$V_{(BR)EBO}$	$I_E = 100\mu\text{A}, I_C = 0$	7	-	-	V
Collector Cut-off Current	I_{CBO}	$V_{CB} = 150\text{V}, I_E = 0$	-	-	0.1	μA
Collector Cut-off Current	I_{CES}	$V_{CE} = 150\text{V}$	-	-	0.1	μA
Emitter Cut-off Current	I_{EBO}	$V_{EB} = 5.6\text{V}, I_C = 0$	-	-	0.1	μA
DC Current Gain	h_{FE}	$V_{CE} = 10\text{V}, I_C = 1\text{mA}$	100	-	-	-
		$V_{CE} = 10\text{V}, I_C = 250\text{mA}$	100	-	300	-
		$V_{CE} = 10\text{V}, I_C = 500\text{mA}$	50	-	-	-
Collector-emitter Saturation Voltage	$V_{CE(sat)}$	$I_C = 250\text{mA}, I_B = 25\text{mA}$	-	-	0.2	V
		$I_C = 500\text{mA}, I_B = 50\text{mA}$	-	-	0.3	V
Base-emitter Saturation Voltage	$V_{BE(sat)}$	$I_C = 500\text{mA}, I_B = 50\text{mA}$	-	-	1.0	V
Base-emitter Voltage	$V_{BE(on)}$	$I_C = 500\text{mA}, V_{CE} = 10\text{V}$	-	-	1.0	V
Transition Frequency	f_T	$V_{CE} = 10\text{V}, I_C = 50\text{mA}$ $F = 100\text{MHz}$	100	-	-	MHz
Output Capacitance	C_{ob}	$V_{CB} = 10\text{V}, f = 1\text{MHz}$	-	-	10	pF

Ratings and Characteristic Curves (@ $T_A = 25^\circ\text{C}$ unless otherwise specified)

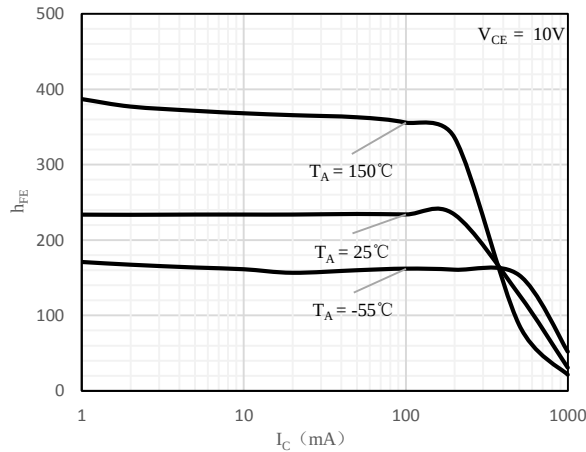


Fig 1 h_{FE} vs. I_C

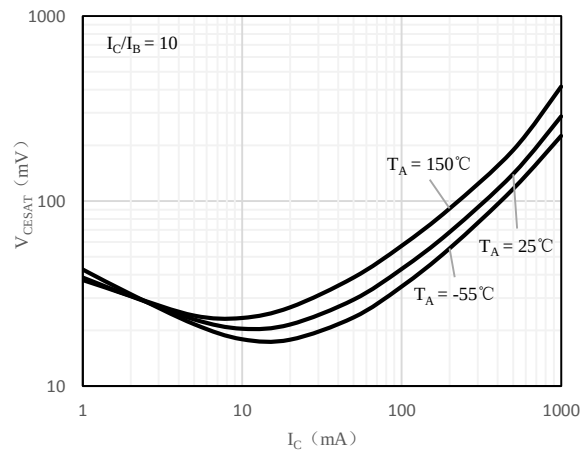


Fig 2 $V_{CE(sat)}$ vs. I_C

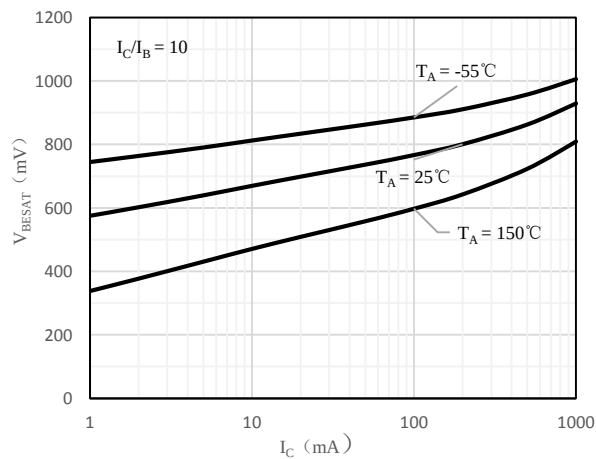


Fig 3 $V_{BE(sat)}$ vs. I_C

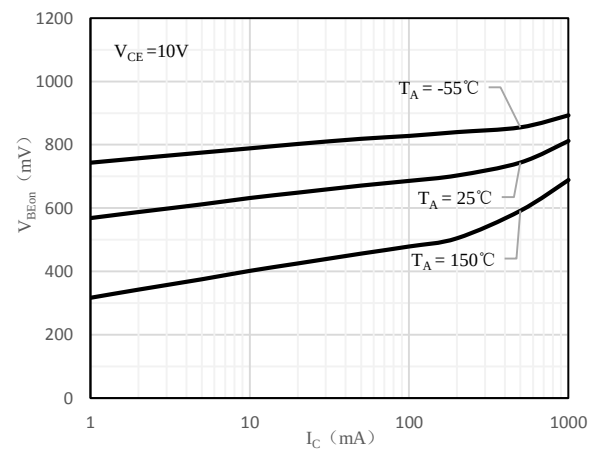


Fig 4 $V_{BE(on)}$ vs. I_C

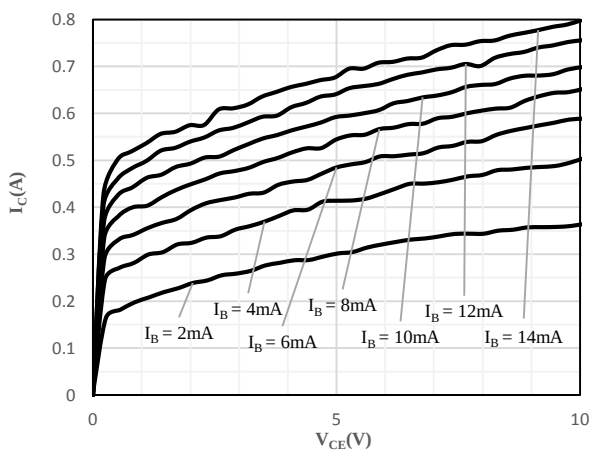


Fig 5 I_C vs. V_{CE}

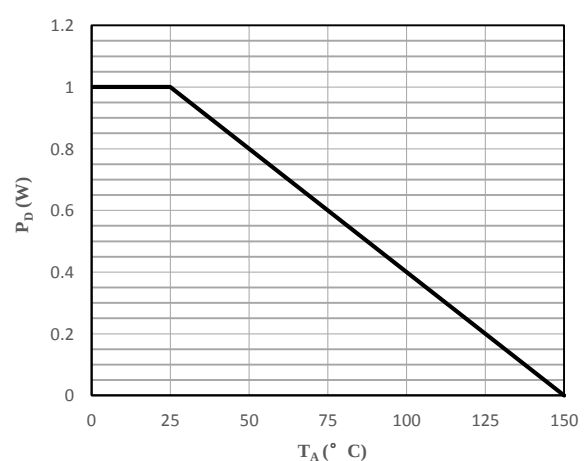


Fig 6 Steady State Power Derating

Ratings and Characteristic Curves (@ $T_A = 25^\circ\text{C}$ unless otherwise specified)

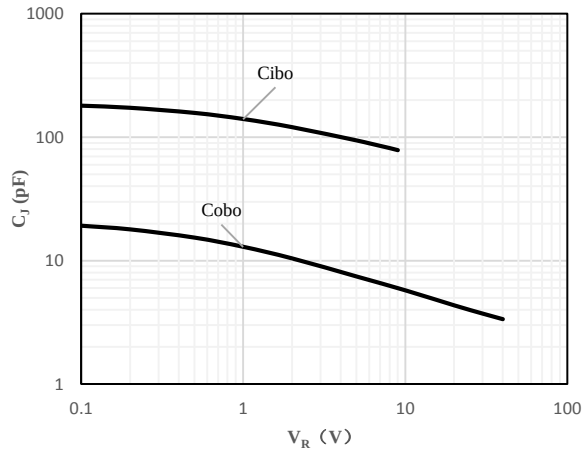
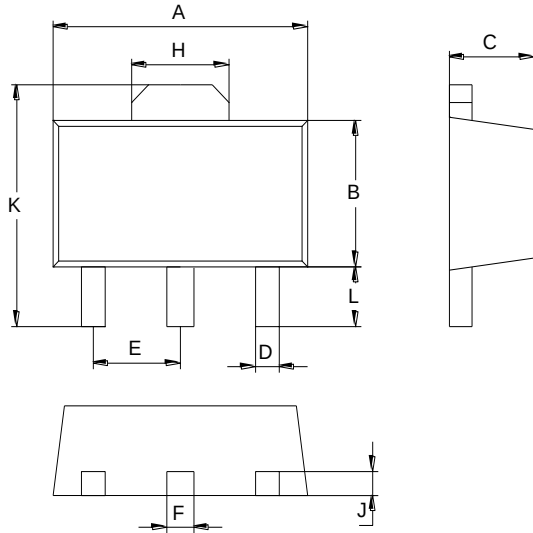


Fig 7 C_J vs. V_R

Package Outline Dimensions (Unit: mm)



SOT-89		
Dimension	Min.	Max.
A	4.30	4.70
B	2.25	2.65
C	1.30	1.70
D	0.30	0.50
E	1.40	1.60
F	0.38	0.58
H	1.60	1.80
J	0.30	0.50
L	0.90	1.10
K	3.75	4.35

Mounting Pad Layout (Unit: mm)

SOT-89

