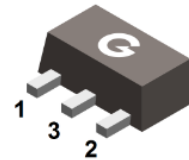
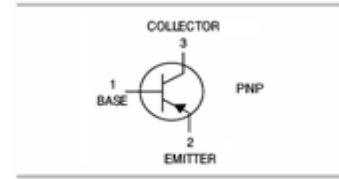


Features

- Low saturation voltage
- Low saturation voltage
- Excellent h_{FE} linearity and high h_{FE}
- Complementary to TD882
- RoHS compliant with Halogen-free
- Qualified to AEC-Q101 Standards

HF



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

Ordering Information

Part Number	Package	Shipping Quantity	Marking Code
TB772-R	SOT-89	1000 pcs / Tape & Reel	B772
TB772-O	SOT-89	1000 pcs / Tape & Reel	B772
TB772-Y	SOT-89	1000 pcs / Tape & Reel	B772
TB772-G	SOT-89	1000 pcs / Tape & Reel	B772

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

Parameter	Symbol	Value	Unit
Collector-Base Breakdown Voltage	V_{CBO}	-40	V
Collector-Emitter Breakdown Voltage	V_{CEO}	-30	V
Emitter-Base Breakdown Voltage	V_{EBO}	-6	V
Continuous Collector Current	I_C	-3	A
Peak Collector Current	I_{CM}	-5	A

Thermal Characteristics

Parameter	Symbol	Value	Unit
Power Dissipation ($T_A = 25^\circ\text{C}$)	P_D	0.5	W
Thermal Resistance Junction-to-Air	$R_{\theta JA}$	250	$^\circ\text{C/W}$
Thermal Resistance Junction-to-Air ^{*1}	$R_{\theta JA}$	70	$^\circ\text{C/W}$
Thermal Resistance Junction-to-Case ^{*1}	$R_{\theta JC}$	40	$^\circ\text{C/W}$
Thermal Resistance Junction-to-Lead ^{*1}	$R_{\theta JL}$	30	$^\circ\text{C/W}$
Operating junction Temperature	T_J	-55 ~ +150	$^\circ\text{C}$
Storage Temperature Range	T_{STG}	-55 ~ +150	$^\circ\text{C}$

Note 1: The data tested by surface mounted on a 1 inch² FR-4 board with 2OZ copper

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

Parameter	Symbol	Test Condition	Min.	Typ.	Max.	Unit
Collector-Base Breakdown Voltage	$V_{(BR)CBO}$	$I_C = -100\mu\text{A}, I_E = 0$	-40	-	-	V
Collector-Emitter Breakdown Voltage	$V_{(BR)CEO}$	$I_C = -10\text{mA}, I_B = 0$	-30	-	-	V
Emitter-Base Breakdown Voltage	$V_{(BR)EBO}$	$I_E = -100\mu\text{A}, I_C = 0$	-6	-	-	V
Collector Cut-off Current	I_{CBO}	$V_{CB} = -40\text{V}, I_E = 0$	-	-	-1	μA
Collector Cut-off Current	I_{CEO}	$V_{CE} = -30\text{V}, I_B = 0$	-	-	-1	μA
Emitter Cut-off Current	I_{EBO}	$V_{EB} = -6\text{V}, I_C = 0$	-	-	-1	μA
DC Current Gain	h_{FE}	$V_{CE} = -2\text{V}, I_C = -1\text{A}$	60	-	400	-
		$V_{CE} = -2\text{V}, I_C = -20\text{mA}$	30	-	-	-
Collector-emitter Saturation Voltage	$V_{CE(sat)}$	$I_C = -2\text{A}, I_B = -0.2\text{A}$	-	-	-0.5	V
Base-emitter Saturation Voltage	$V_{BE(sat)}$	$I_C = -2\text{A}, I_B = -0.2\text{A}$	-	-	-2	V
Transition Frequency	f_T	$I_C = -0.1\text{A}, V_{CE} = -5\text{V}$	-	80	-	MHz
Collector Output Capacitance	C_{OBO}	$V_{CB} = -10\text{V}, I_E = 0, f = 1\text{MHz}$	-	55	-	pF

Classification of h_{FE}

Rank	R	O	Y	G
Range	60-120	100-200	160-320	200-400

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

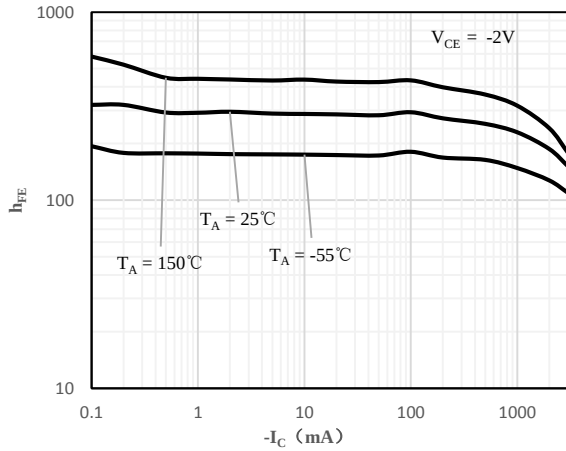


Fig 1 h_{FE} vs. I_C

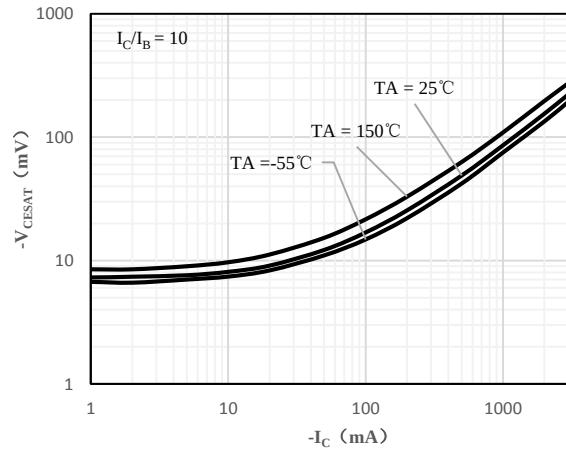


Fig 2 $V_{CE(sat)}$ vs. I_C

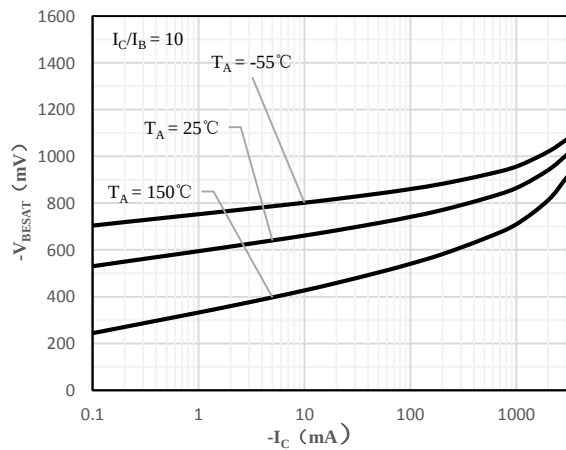


Fig 3 $V_{BE(sat)}$ vs. I_C

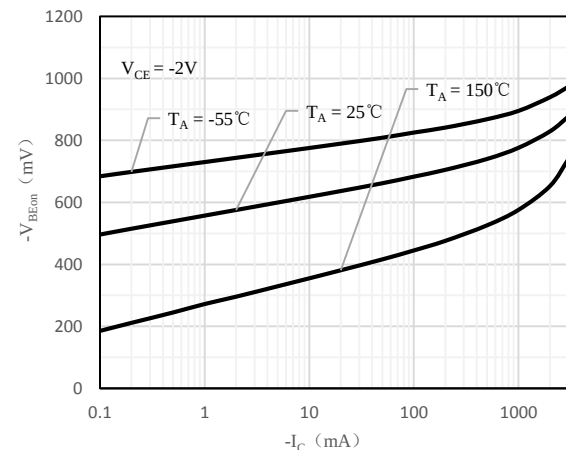


Fig 4 $V_{BE(on)}$ vs. I_C

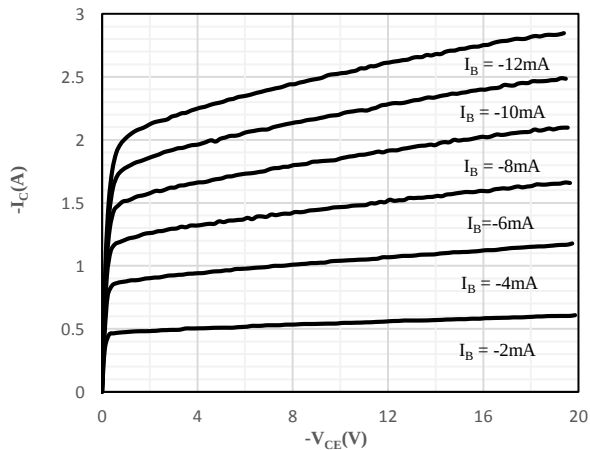


Fig 5 I_C vs. V_{CE}

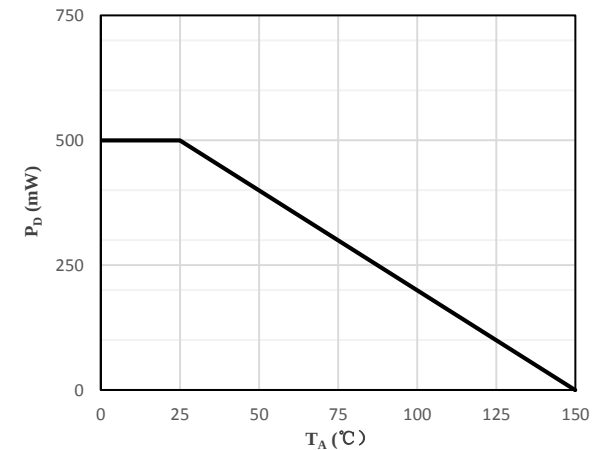


Fig 6 P_D vs. T_A

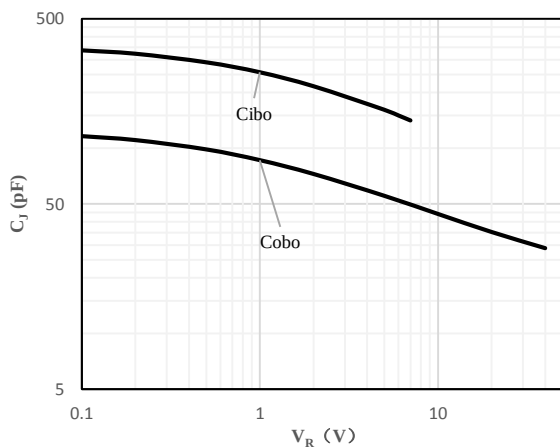
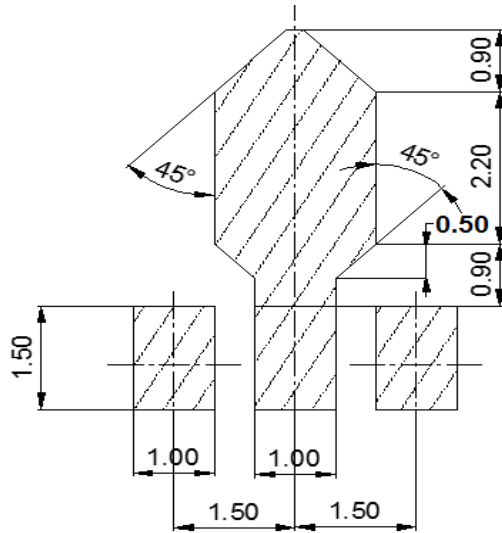


Fig 7 C_J vs. V_R

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
G	0.60	0.80
H	1.60	1.80
J	0.30	0.50
L	0.90	1.10
K	3.95	4.35

Mounting Pad Layout (Unit: mm)

SOT-89

