

# TRANSISTOR (NPN)

## FEATURES

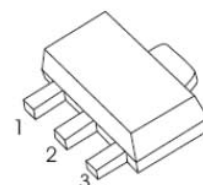
Power dissipation

### MAXIMUM RATINGS ( $T_a=25^{\circ}\text{C}$ unless otherwise noted)

Symbol	Parameter	Value	Unit
$V_{CBO}$	Collector-Base Voltage	40	V
$V_{CEO}$	Collector-Emitter Voltage	30	V
$V_{EBO}$	Emitter-Base Voltage	6	V
$I_C$	Collector Current -Continuous	3	A
$P_C$	Collector Power Dissipation	0.5	W
$T_J$	Junction Temperature	150	$^{\circ}\text{C}$
$T_{stg}$	Storage Temperature	-55~150	$^{\circ}\text{C}$

### SOT-89

1. BASE
2. COLLECTOR
3. EMITTER



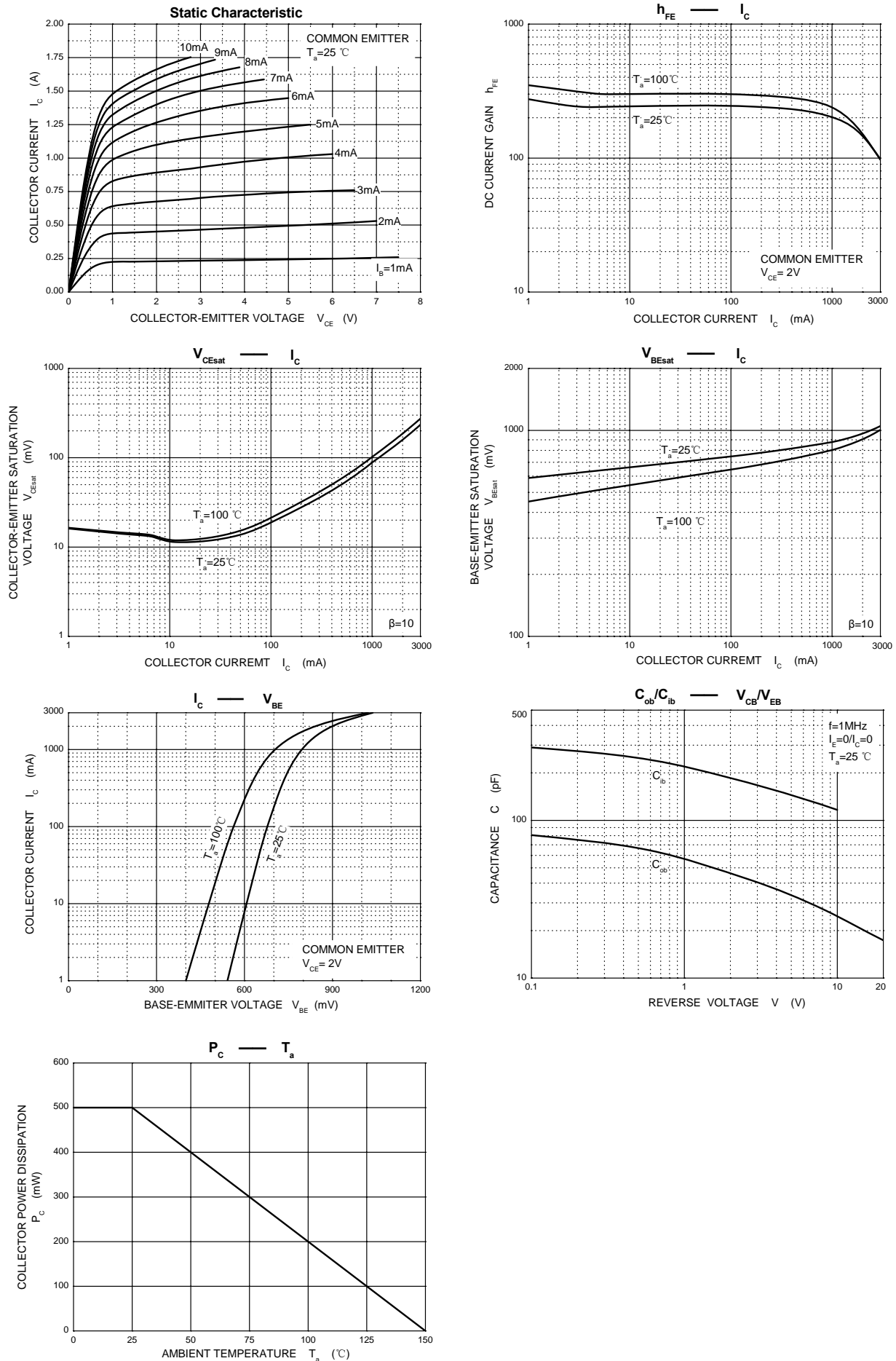
### ELECTRICAL CHARACTERISTICS ( $T_{amb}=25^{\circ}\text{C}$ unless otherwise specified)

Parameter	Symbol	Test conditions	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	$V(BR)_{EBO}$	$I_E=100\text{mA}, I_C=0$	6			V
Collector cut-off current	$I_{CBO}$	$V_{CB}=40\text{V}, I_E=0$			1	$\mu\text{A}$
Collector cut-off current	$I_{CEO}$	$V_{CE}=30\text{V}, I_B=0$			10	$\mu\text{A}$
Emitter cut-off current	$I_{EBO}$	$V_{EB}=6\text{V}, I_C=0$			1	$\mu\text{A}$
DC current gain	$h_{FE(1)}$	$V_{CE}=2\text{V}, I_C=1\text{A}$	60		400	
	$h_{FE(2)}$	$V_{CE}=2\text{V}, I_C=100\text{mA}$	32			
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	$V_{BE(sat)}$	$I_C=2\text{A}, I_B=0.2\text{A}$			1.5	V
Transition frequency	$f_T$	$V_{CE}=5\text{V}, I_C=0.1\text{mA}$ $f=10\text{MHz}$	50			MHz

### CLASSIFICATION OF $h_{FE(1)}$

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

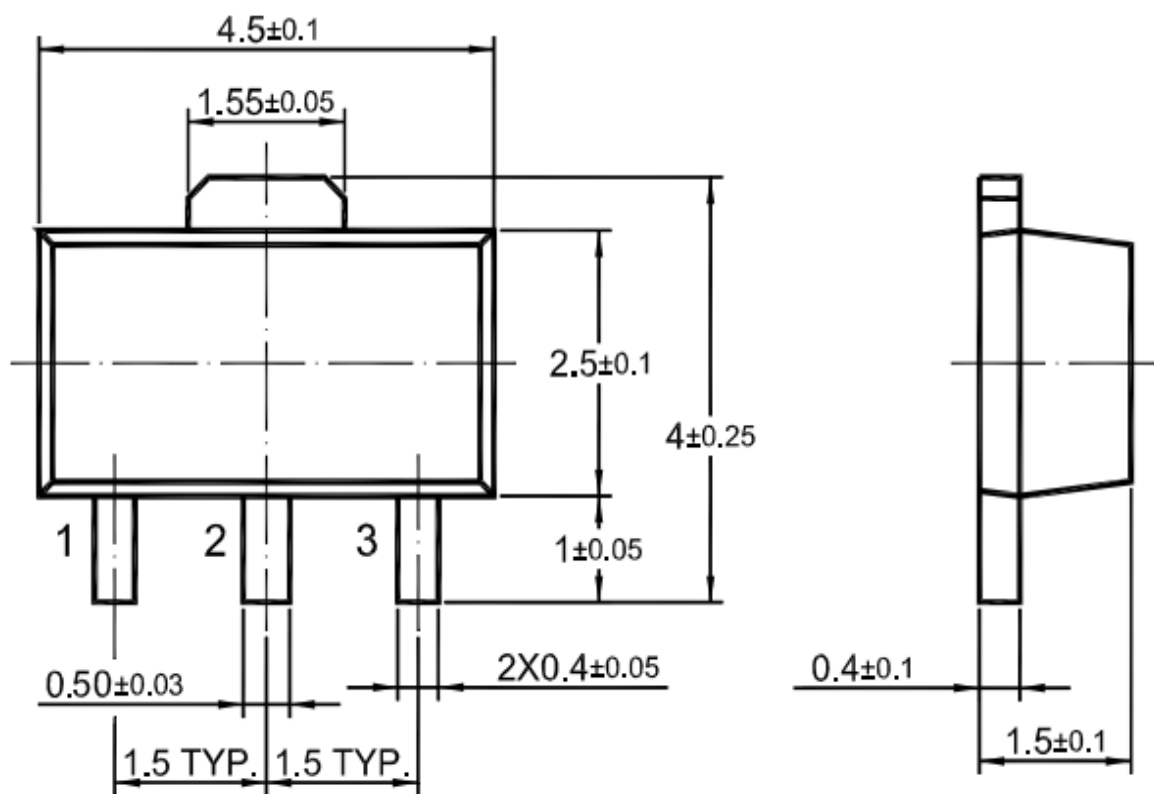
# Typical Characteristics



**Package Outline**

SOT-89

Dimensions in mm



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