

# TRANSISTOR (NPN)

## FEATURES

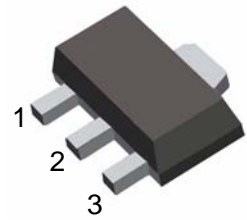
- Low collector-emitter saturation voltage  $V_{CE(sat)}$
- Satisfactory operation performances at high efficiency with the low voltage power supply.

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

Symbol	Parameter	Value	Units
$V_{CBO}$	Collector- Base Voltage	40	V
$V_{CEO}$	Collector-Emitter Voltage	25	V
$V_{EBO}$	Emitter-Base Voltage	7	V
$I_C$	Collector Current -Continuous	3	A
$P_C$	Collector Dissipation	500	mW
$T_J$	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	$V_{(BR)CEO}$	$I_C = 1\text{mA}, I_B = 0$	25			V
Emitter-base breakdown voltage	$V_{(BR)EBO}$	$I_E = 10\mu\text{A}, I_C = 0$	7			V
Collector cut-off current	$I_{CBO}$	$V_{CB} = 10\text{V}, I_E = 0$			0.1	$\mu\text{A}$
Emitter cut-off current	$I_{EBO}$	$V_{EB} = 6\text{V}, I_C = 0$			0.1	$\mu\text{A}$
DC current gain	$h_{FE(1)}$	$V_{CE} = 2\text{V}, I_C = 500\text{mA}$	230		600	
	$h_{FE(2)}$	$V_{CE} = 2\text{V}, I_C = 2\text{A}$	150			
Collector-emitter saturation voltage	$V_{CE(sat)}$	$I_C = 3\text{A}, I_B = 0.1\text{A}$			1	V
Transition frequency	$f_T$	$V_{CE} = 6\text{V}, I_C = 50\text{mA}, f = 200\text{MHz}$		150		MHz
Collector output capacitance	$C_{ob}$	$V_{CB} = 20\text{V}, f = 1\text{MHz}$			50	pF

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

Rank	Q	R
Range	230-380	340-600
Marking	TQ	TR

