TRANSISTOR (NPN) **Plastic-Encapsulate Transistor**

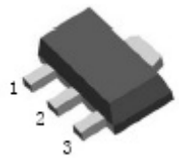
FEATURES

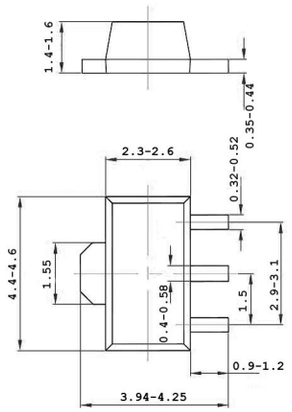
- Large collector power dissipation P_C
- Low collector-emitter saturation voltage $V_{CE(sat)}$
- Mini power type package, allowing downsizing of the equipment and automatic insertion through the tape packing and the magazine packing

MARKING: YQ, YR, YS

SOT-89

1. BASE
2. COLLECTOR
3. EMITTER





UNIT:mm

MAXIMUM RATINGS AND ELECTRICAL CHARACTERISTICS

Ratings at 25℃ ambient temperature unless otherwise specified.

MAXIMUM RATINGS

Parameters	Symbols	Value	UNITS
Collector-Base Voltage	V_{CBO}	60	V
Collector-Emitter Voltage	V_{CEO}	50	V
Emitter-Base Voltage	V_{EBO}	5	V
Collector Current - Continuous	I_C	1	A
Collector Dissipation	P_C	0.5	W
Junction and Storage Temperature	T_J, T_{stg}	-55-150	℃

ELECTRICAL CHARACTERISTICS

Parameters	Symbol	Test conditions	MIN	TYP	MAX	UNIT
Collector-Base Breakdown Voltage	$V_{(BR)CBO}$	I_C=10μA, I_E=0	60			V
Collector-Emitter Breakdown Voltage	$V_{(BR)CEO}$	I_C=2mA, I_B=0	50			V
Emitter-Base Breakdown Voltage	$V_{(BR)EBO}$	I_E=10μA, I_C=0	5			V
Collector Cut-Off Current	I_{CBO}	V_{CB}=20V, I_E=0			0.1	μA
Emitter Cut-Off Current	I_{EBO}	V_{EB}=4V, I_C=0			0.1	μA
DC Current Gain	$h_{FE(1)}$ $h_{FE(2)}$	V_{CE}=10V, I_C=500mA V_{CE}=5V, I_C=1A	85 50		340	
Collector-Emitter Saturation Voltage	$V_{CE(sat)}$	I_C=500mA, I_B=50mA			0.4	V
Base-Emitter Saturation Voltage	$V_{BE(sat)}$	I_C=500mA, I_B=50mA			1.2	V
Transition Frequency	f_T	V_{CE}=10V, I_C=50mA, f=200MHz		200		MHz
Collector Output Capacitance	C_{ob}	V_{CB}=10V, I_E=0, f=1MHz		20		pF

CLASSIFICATION OF $h_{FE(1)}$

Rank	Q	R	S
Range	85-170	120-240	170-340