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

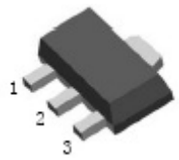
FEATURES

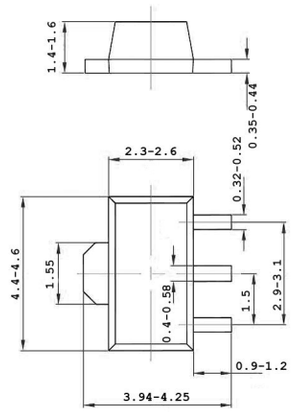
- Power dissipation

MARKING: TQ, TR

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}	40	V
Collector-Emitter Voltage	V_{CEO}	25	V
Emitter-Base Voltage	V_{EBO}	7	V
Collector Current - Continuous	I_C	3	A
Collector Dissipation	P_C	500	mW
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=100μA, I_E=0	40			V
Collector-Emitter Breakdown Voltage	$V_{(BR)CEO}$	I_C=1mA, I_B=0	25			V
Emitter-Base Breakdown Voltage	$V_{(BR)EBO}$	I_E=10μA, I_C=0	7			V
Collector Cut-Off Current	I_{CBO}	V_{CB}=10V, I_E=0			0.1	μA
Emitter Cut-Off Current	I_{EBO}	V_{EB}=6V, I_C=0			0.1	μA
DC Current Gain	$h_{FE(1)}$ $h_{FE(2)}$	V_{CE}=2V, I_C=500mA V_{CE}=2V, I_C=2A	230 150		600	
Collector-Emitter Saturation Voltage	$V_{CE(sat)}$	I_C=3A, I_B=0.1A			1	V
Transition Frequency	f_T	V_{CE}=6V, I_C=50mA, f=200MHz		150		MHz
Collector Output Capacitance	C_{ob}	V_{CB}=20V, f=1MHz			50	pF

CLASSIFICATION OF $h_{FE(1)}$

Rank	Q	R
Range	230-380	340-600