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

FEATURES

Power dissipation

P_{CM} : 0.2W (Tamb=25°C)

Collector current

I_{CM} : 0.1A

Collector-base Voltage

$V_{(BR)CBO}$: 60 V

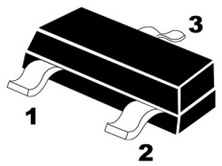
Operating and storage junction temperature range

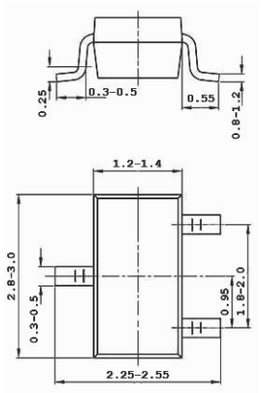
T_J, T_{stg} : -55°C to +150°C

MARKING : ZQ , ZR , ZS

SOT-23

1. BASE
2. EMITTER
3. COLLECTOR





Unit:mm

MAXIMUM RATINGS AND ELECTRICAL CHARACTERISTICS

Ratings at 25℃ ambient temperature unless otherwise specified.

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	7			V
Collector Cut-Off Current	I_{CBO}	V_{CB}=20V, I_E=0			0.1	μA
Collector Cut-Off Current	I_{CEO}	V_{EB}=10V, I_C=0			100	μA
DC Current Gain	$h_{FE(1)}$ $h_{FE(2)}$	V_{CE}=10V, I_C=2mA V_{CE}=2V, I_C=100mA	160 90		460	
Collector-Emitter Saturation Voltage	$V_{CE(sat)}$	I_C=100mA, I_B=10mA			0.3	V
Transition Frequency	f_T	V_{CE}=10V, I_C=2mA, f=100MHz		150		MHz
Collector Output Capacitance	C_{ob}	V_{CB}=10V, I_E=0, f=1MHz		3.5		pF

CLASSIFICATION OF $h_{FE(1)}$

Rank	Q	R	S
Range	160-260	210-340	290-460

RoHS Pb-free TIP Semiconductor