

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

**FEATURES**

- Low voltage
- High saturation current capability

**MARKING : AFQ , AFR**

**SOT-23**

1. BASE
2. EMITTER
3. COLLECTOR

UNIT:mm

**MAXIMUM RATINGS AND ELECTRICAL CHARACTERISTICS**  
 Ratings at 25°C ambient temperature unless otherwise specified.

**MAXIMUM RATINGS**

Parameters	Symbols	Value	UNITS
Collector-Base Voltage	$V_{CBO}$	40	V
Collector-Emitter Voltage	$V_{CEO}$	32	V
Emitter-Base Voltage	$V_{EBO}$	5	V
Collector Current - Continuous	$I_C$	0.8	A
Collector Dissipation	$P_C$	0.2	W
Junction and Storage Temperature	$T_J, T_{stg}$	-55-150	°C

**ELECTRICAL CHARACTERISTICS**

Parameters	Symbol	Test conditions	MIN	TYP	MAX	UNIT
Collector-Base Breakdown Voltage	$V_{(BR)CBO}$	$I_C=50\mu A, I_E=0$	40			V
Collector-Emitter Breakdown Voltage	$V_{(BR)CEO}$	$I_C=1mA, I_B=0$	32			V
Emitter-Base Breakdown Voltage	$V_{(BR)EBO}$	$I_E=50\mu A, I_C=0$	5			V
Collector Cut-Off Current	$I_{CBO}$	$V_{CB}=20V, I_E=0$			0.5	$\mu A$
Emitter Cut-Off Current	$I_{EBO}$	$V_{EB}=4V, I_C=0$			0.5	$\mu A$
DC Current Gain	$h_{FE(1)}$	$V_{CE}=3V, I_C=100mA$	120		390	
Collector-Emitter Saturation Voltage	$V_{CE(sat)}$	$I_C=500mA, I_B=50mA$			0.4	V
Transition Frequency	$f_T$	$V_{CE}=5V, I_C=50mA, f=100MHz$		150		MHz
Collector Output Capacitance	$C_{ob}$	$V_{CB}=10V, I_E=0, f=1MHz$		10		pF

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

Rank	Q	R
Range	120-270	180-390

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