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

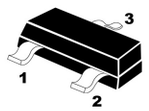
FEATURES

- Low current
- Low voltage

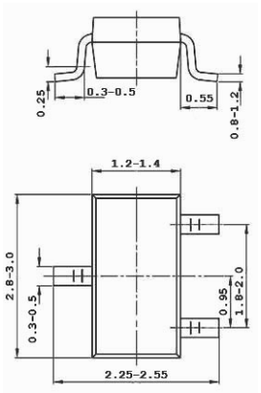
MARKING:AJ,AK

SOT-23

1. BASE
2. EMITTER
3. COLLECTOR



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}	45	V
Collector-Emitter Voltage	V_{CEO}	45	V
Emitter-Base Voltage	V_{EBO}	5	V
Collector Current – Continuous	I_C	0.2	A
Collector Dissipation	P_C	0.25	W
Thermal Resistance Junction Ambient Air	$R_{\theta JA}$	500	℃/W
Junction and Storage Temperature	T_J, T_{stg}	-65-150	℃

ELECTRICAL CHARACTERISTICS

Parameters	Symbol	Test conditions	MIN	TYP	MAX	UNIT
Collector-Base Breakdown Voltage	V_{CBO}	I_C=100μA, I_E=0	45			V
Collector-Emitter Breakdown Voltage	V_{CEO}	I_C=1mA, I_B=0	45			V
Emitter-Base Breakdown Voltage	V_{EBO}	I_E=100μA, I_C=0	5			V
Collector Cut-Off Current	I_{CBO}	V_{CB}=45V, I_E=0			0.02	μA
Emitter Cut-Off Current	I_{EBO}	V_{EB}=4V, I_C=0			0.02	μA
DC Current Gain BCX70J	$h_{FE(1)}$ $h_{FE(2)}$ $h_{FE(3)}$	V_{CE}=5V, I_C=10μA V_{CE}=5V, I_C=2mA V_{CE}=1V, I_C=50mA	40 250 90		460	
DC Current Gain BCX70K	$h_{FE(1)}$ $h_{FE(2)}$ $h_{FE(3)}$	V_{CE}=5V, I_C=10μA V_{CE}=5V, I_C=2mA V_{CE}=1V, I_C=50mA	100 380 100		630	
Collector-Emitter Saturation Voltage	$V_{CE(sat)1}$ $V_{CE(sat)2}$	I_C=10mA, I_B=0.25mA I_C=50mA, I_B=1.25mA	50 100		350 550	mV mV
Base-Emitter Saturation Voltage	$V_{BE(sat)1}$ $V_{BE(sat)2}$	I_C=10mA, I_B=0.25mA I_C=50mA, I_B=1.25mA	600 700		850 1050	mV mV
Base-Emitter Voltage	$V_{BE(ON)1}$ $V_{BE(ON)2}$ $V_{BE(ON)3}$	V_{CE}=5V, I_C=2mA V_{CE}=5V, I_C=10μA V_{CE}=1V, I_C=50mA	550	 520 780	750	mV mV mV
Collector-Base Capacitance	C_{CBO}	V_{CB}=10V, f=1MHz, I_E=0		2.5		pF
Emitter-Base Capacitance	C_{EBO}	V_{EB}=0.5V, f=1MHz, I_C=0		8		pF
Transition Frequency	f_T	V_{CE}=5V, I_C=10mA, f=100MHz	100			MHz
Noise Figure	NF	V_{CE}=5V, I_C=200μA, f=1KHz, B=200Hz, R_S=2KΩ			6	dB
Turn-On Time	t_{on}	V_{CC}=10V, I_C=10mA, $I_{B(on)}$=-$I_{B(off)}$=1mA			150	ns
Turn-Off Time	t_{off}				800	ns

RoHS Pb-free TIP Semiconductor