

GENERAL PURPOSE APPLICATION.
HIGH VOLTAGE APPLICATION.

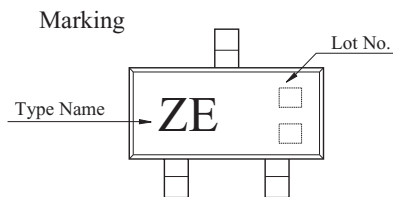
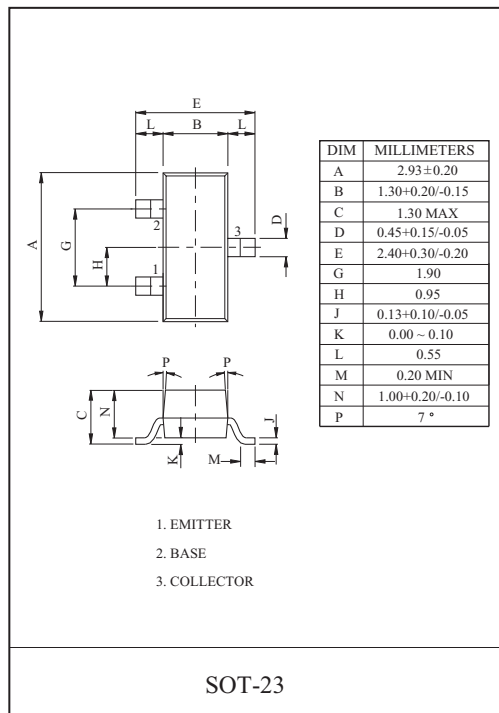
FEATURES

- High Collector Breakdown Voltage
: $V_{CB0} = -160V$, $V_{CE0} = -150V$
- Low Leakage Current.
: $I_{CBO} = -50nA(\text{Max.}) @ V_{CB} = -120V$
- Low Saturation Voltage
: $V_{CE(\text{sat})} = -0.5V(\text{Max.}) @ I_C = -50mA, I_B = -5mA$
- Low Noise : $NF = 8dB(\text{Max.})$

MAXIMUM RATING (Ta=25 °C)

CHARACTERISTIC	SYMBOL	RATING	UNIT
Collector-Base Voltage	V_{CB0}	-160	V
Collector-Emitter Voltage	V_{CE0}	-150	V
Emitter-Base Voltage	V_{EBO}	-5	V
Collector Current	I_C	-600	mA
Base Current	I_B	-100	mA
Collector Power Dissipation	P_C^*	350	mW
Junction Temperature	T_j	150	°C
Storage Temperature Range	T_{stg}	-55 ~ 150	°C

Note : * Package Mounted On 99.5% Alumina $10 \times 8 \times 0.6mm$)



2N5401S

ELECTRICAL CHARACTERISTICS (Ta=25 °C)

CHARACTERISTIC	SYMBOL	TEST CONDITION	MIN.	TYP.	MAX.	UNIT
Collector Cut-off Current	I_{CBO}	$V_{CB}=-120V, I_E=0$	-	-	-50	nA
		$V_{CB}=-120V, I_E=0, T_a=100\text{ }^\circ\text{C}$	-	-	-50	μA
Emitter Cut-off Current	I_{EBO}	$V_{EB}=-3V, I_C=0$	-	-	-50	nA
Collector-Base Breakdown Voltage	$V_{(BR)CBO}$	$I_C=-0.1\text{mA}, I_E=0$	-160	-	-	V
Collector-Emitter Breakdown Voltage *	$V_{(BR)CEO}$	$I_C=-1\text{mA}, I_B=0$	-150	-	-	V
Emitter-Base Breakdown Voltage	$V_{(BR)EBO}$	$I_E=-10\text{ }\mu\text{A}, I_C=0$	-5	-	-	V
DC Current Gain *	$h_{FE}(1)$	$V_{CE}=-5V, I_C=-1\text{mA}$	50	-	-	
	$h_{FE}(2)$	$V_{CE}=-5V, I_C=-10\text{mA}$	60	-	240	
	$h_{FE}(3)$	$V_{CE}=-5V, I_C=-50\text{mA}$	50	-	-	
Collector-Emitter Saturation Voltage *	$V_{CE(sat)1}$	$I_C=-10\text{mA}, I_B=-1\text{mA}$	-	-	-0.2	V
	$V_{CE(sat)2}$	$I_C=-50\text{mA}, I_B=-5\text{mA}$	-	-	-0.5	
Base-Emitter Saturation Voltage *	$V_{BE(sat)1}$	$I_C=-10\text{mA}, I_B=-1\text{mA}$	-	-	-1.0	V
	$V_{BE(sat)2}$	$I_C=-50\text{mA}, I_B=-5\text{mA}$	-	-	-1.0	
Transition Frequency	f_T	$V_{CE}=-10V, I_C=-10\text{mA}, f=100\text{MHz}$	100	-	300	MHz
Collector Output Capacitance	C_{ob}	$V_{CB}=-10V, I_E=0, f=1\text{MHz}$	-	-	6	pF
Small-Signal Current Gain	h_{fe}	$V_{CE}=-10V, I_C=-1\text{mA}, f=1\text{kHz}$	40	-	200	
Noise Figure	NF	$V_{CE}=-5V, I_C=-250\text{ }\mu\text{A}$ $R_g=1\text{k } \Omega, f=10\text{Hz} \sim 15.7\text{kHz}$	-	-	8	dB

* Pulse Test : Pulse Width $\leq 300\text{ }\mu\text{s}$, Duty Cycle $\leq 2\%$.