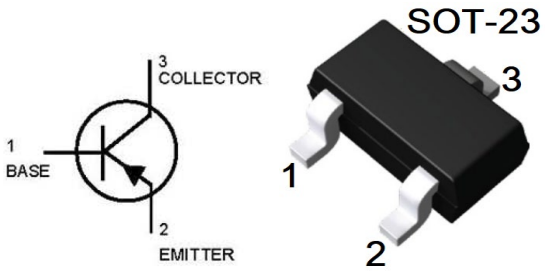
DESCRIPTION

The 2SA1036K is available in SOT-23 packages.

PIN DESCRIPTION



Pin	PIN DESCRIPTION
1	Base
2	Emitter
3	Collector

ORDERING INFORMATION

Package Type	Part Number
SOT-23	2SA1036K
Note	SPQ: 3,000pcs/Tube
AiT provides all RoHS products	

ABSOLUTE MAXIMUM RATINGS

V_{CBO}, Collector-Base Voltage	-40V
V_{CEO}, Collector-Emitter Voltage	-25V
V_{EBO}, Emitter-Base Voltage	-5.0V
I_C, Collector Current -Continuous	-500mA

Stresses above may cause permanent damage to the device. These are stress ratings only and functional operation of the device at these or any other conditions beyond those indicated in the Electrical Characteristics are not implied. Exposure to absolute maximum rating conditions for extended periods may affect device reliability.

THERMAL CHARACTERISTICS

P_D, Total Dissipation FR-5 Board (1) T_A=25℃	225mW
Derate above 25℃	1.8mW/℃
$R_{\theta JA}$, Thermal Resistance, Junction to Ambient	556℃/W
P_D, Alumina Substrate(2) T_A=25℃	300mW
Derate above 25℃	1.8 mW/℃
$R_{\theta JA}$, Thermal Resistance, Junction to Ambient	417℃/W
T_J, Junction Temperature	150℃
T_{STG}, Storage Temperature	-55℃~+150℃

ELECTRICAL CHARACTERISTICS

T_A = 25°C, unless otherwise noted.

Parameter	Symbol	Conditions	Min.	Typ.	Max.	Unit
Off Characteristics						
Collector-Emitter Breakdown Voltage	V_{CEO}	I_C= -1.0mA, I_B=0	-25	-	-	V
Collector-Base Breakdown Voltage	V_{CBO}	I_C= -0.1mA, I_E=0	-40	-	-	V
Emitter-Base Breakdown Voltage	V_{EBO}	I_E= -0.1mA, I_C=0	-5.0	-	-	V
Base Cutoff Current	I_{BEV}	V_{CE}= -35V, V_{EB}= -0.4V	-	-	-0.1	μA
Collector Cutoff Current	I_{CEX}	V_{CE}= -35V,V_{EB}= -0.4V	-	-	-0.1	μA
On Characteristics						
DC Current Gain	h_{FE}	I_C= -0.1 mA, V_{CE}= -1.0V	30	-	-	-
		I_C= -1.0 mA, V_{CE}= -1.0V	60	-	-	
		I_C= -10 mA, V_{CE}= -1.0V	100	-	-	
		I_C= -150 mA, V_{CE}= -2.0V(3)	180	-	390	
		I_C= -500 mA, V_{CE}= -2.0V(3)	20	-	-	
Collector-Emitter Saturation Voltage	$V_{CE(sat)}$	I_C= -150mA, I_B= -15mA	-	-	-0.4	V
		I_C= -500mA, I_B= -50mA	-	-	-0.75	
Base-Emitter Saturation Voltage	$V_{BE(sat)}$	I_C= -150mA, I_B= -15mA	-0.75	-	-0.95	V
		I_C= -500mA, I_B= -50mA	-	-	-1.3	
Small-Signal Characteristics						
Current-Gain-Bandwidth Product	f_T	I_C= -20mA V_{CE}= -10V, f=100MHz	200	-	-	MHz
Collector-Base Capacitance	C_{CB}	V_{CB}= -10V, I_E=0, f=1.0MHz	-	-	8.5	pF
Emitter-Base Capacitance	C_{EB}	V_{CB}= -0.5V, I_c=0, f=1.0MHz	-	-	30	pF
Input Impedance	H_{IE}	V_{CE}= -10V, I_c=-1.0 mA, f=1.0MHz	1.5	-	15	kΩ
Voltage Feedback Ratio	H_{RE}		0.1	-	8.0	$X10^{-4}$
Small-Signal Current Gain	H_{FE}		60	-	500	-
Switching Characteristics						
Delay Time	t_d	V_{CC}= -30V, V_{EB}= -2.0V, I_C= -150mA, I_{B1}= -15mA	-	-	15	-
Rise Time	t_d		-	-	20	ns
Storage Time	t_s	V_{CC}= -30V, I_C= -150mA, I_{B1}=I_{B2}= -15mA	-	-	225	ns
Fall Time	t_f		-	-	30	-

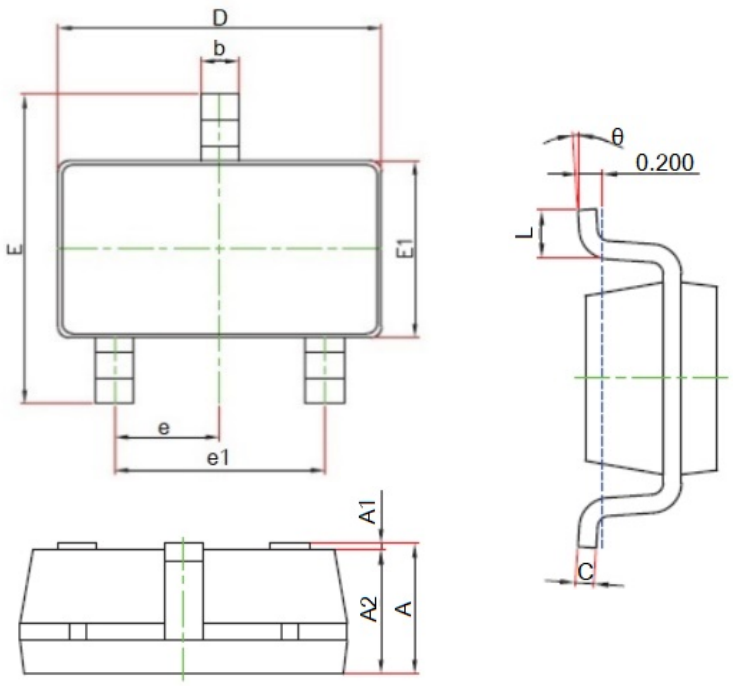
(1) FR-5 =1.0 x 0.75 x 0.062 in.

(2) Alumina = 0.4 x 0.3 x 0.024 in. 99.5% alumina.

(3) Pulse Test Pulse Width ≤300us; Duty Cycle ≤2.0%.

PACKAGE INFORMATION

Dimension in SOT-23 (Unit: mm)



Symbol	MILLIMETERS	
	Min.	Max.
A	1.050	1.250
A1	0.000	0.100
A2	1.050	1.150
b	0.300	0.500
c	0.100	0.200
D	2.820	3.020
E1	1.500	1.700
E	2.650	2.950
e	0.950(BSC)	
e1	1.800	2.000
L	0.300	0.600
θ	0°	8°

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