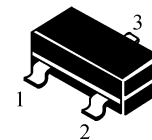


PNP Switching Transistor

SOT-23

- 1. BASE
- 2. EMITTER
- 3. COLLECTOR



■ MAXIMUM RATINGS

Characteristic	Symbol	Rating	Unit
Collector-Emitter Voltage	V_{CEO}	-40	Vdc
Collector-Base Voltage	V_{CBO}	-40	Vdc
Emitter-Base Voltage	V_{EBO}	-6.0	Vdc
Collector Current-Continuous	I_c	-200	mAdc

■ THERMAL CHARACTERISTICS

Characteristic	Symbol	Max	Unit
Total Device Dissipation FR-5 Board(1) $T_A=25^\circ\text{C}$ Derate above 25°C	P_D	225 1.8	mW mW/ $^\circ\text{C}$
Total Device Dissipation Alumina Substrate, $T_A=25^\circ\text{C}$ Derate above 25°C	P_D	300 2.4	mW mW/ $^\circ\text{C}$
Thermal Resistance Junction to Ambient	$R_{\theta JA}$	417	$^\circ\text{C}/\text{W}$
Junction and Storage Temperature	T_J, T_{stg}	150 $^\circ\text{C}$, -55to+150 $^\circ\text{C}$	

■ ELECTRICAL CHARACTERISTICS
($T_A=25^{\circ}\text{C}$ unless otherwise noted)
■ OFF CHARACTERISTICS

Characteristic	Symbol	Min	Max	Unit
Collector-Emitter Breakdown Voltage(3) ($I_C=-1.0\text{mA}_{dc}, I_B=0$)	$V_{(BR)CEO}$	-40	—	Vdc
Collector-Base Breakdown Voltage ($I_C=-10\mu\text{A}_{dc}, I_E=0$)	$V_{(BR)CBO}$	-40	—	Vdc
Emitter-Base Breakdown Voltage ($I_E=-10\mu\text{A}_{dc}, I_C=0$)	$V_{(BR)EBO}$	-6.0	—	Vdc
Base Cutoff Current ($V_{CE}=-30\text{V}_{dc}, V_{EB}=-3.0\text{V}_{dc}$)	I_{BEX}	—	-50	nAdc
Collector Cutoff Current ($V_{CE}=-30\text{V}_{dc}, V_{EB}=-3.0\text{V}_{dc}$)	I_{CEX}	—	-50	nAdc

■ ON CHARCTERISTICS(2)

Characteristic	Symbol	Min	Max	Unit
DC Current Gain	h_{PE}			—
($I_C=-0.1\text{mA}_{dc}, V_{CE}=-1.0\text{V}_{dc}$)		40	—	
($I_C=-1.0\text{mA}_{dc}, V_{CE}=-1.0\text{V}_{dc}$)		70	—	
($I_C=-10\text{mA}_{dc}, V_{CE}=-1.0\text{V}_{dc}$)		100	300	
($I_C=-50\text{mA}_{dc}, V_{CE}=-1.0\text{V}_{dc}$)		60	—	
($I_C=-100\text{mA}_{dc}, V_{CE}=-1.0\text{V}_{dc}$)		30	—	
Collector-Emitter Saturation Voltage ($I_C=-10\text{mA}_{dc}, I_B=-1.0\text{mA}_{dc}$) ($I_C=-50\text{mA}_{dc}, I_B=-5.0\text{mA}_{dc}$)	$V_{CE(sat)}$	— —	-0.25 -0.4	Vdc
Base-Emitter Saturation Voltage ($I_C=-10\text{mA}_{dc}, I_B=-1.0\text{mA}_{dc}$) ($I_C=-50\text{mA}_{dc}, I_B=-5.0\text{mA}_{dc}$)	$V_{BE(sat)}$	-0.65 —	-0.85 -0.95	Vdc

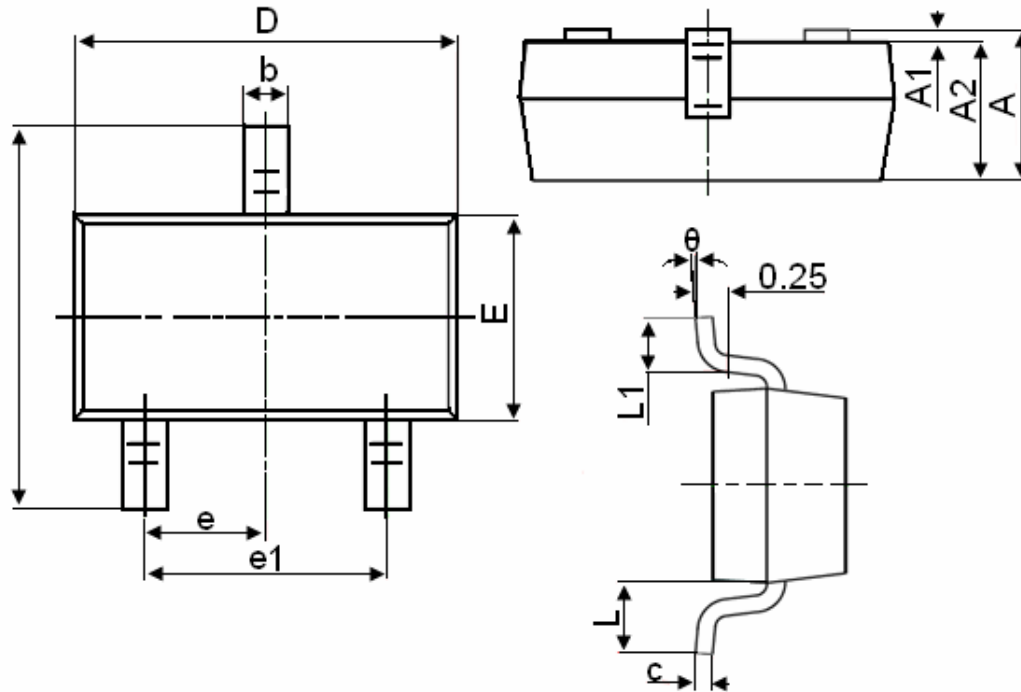
■ SMALL-SIGNAL CHARACTERISTICS

Characteristic	Symbol	Min	Max	Unit
Current-Gain-Bandwidth Product ($I_C=-10\text{mA dc}$, $V_{CE}=-20\text{V dc}$, $f=100\text{MHz}$)	f_T	300	—	MHz
Output Capacitance ($V_{CB}=-5.0\text{V dc}$, $I_E=0$, $f=1.0\text{MHz}$)	C_{obo}	—	4.0	pF
Input Capacitance ($V_{EB}=-0.5\text{V dc}$, $I_C=0$, $f=1.0\text{MHz}$)	C_{ibo}	—	8.0	pF
Input Impedance ($V_{CE}=-10\text{V dc}$, $I_C=-1.0\text{mA dc}$, $f=1.0\text{KHz}$)	h_{ie}	1.0	10	$k\Omega$
Voltage Feedback Ratio ($V_{CE}=-10\text{V dc}$, $I_C=-1.0\text{mA dc}$, $f=1.0\text{KHz}$)	h_{re}	0.5	8.0	$\times 10^{-4}$
Small-Signal Current Gain ($V_{CE}=-10\text{V dc}$, $I_C=-1.0\text{mA dc}$, $f=1.0\text{KHz}$)	h_{fe}	100	400	—
Output Admittance ($V_{CE}=-10\text{V dc}$, $I_C=-1.0\text{mA dc}$, $f=1.0\text{KHz}$)	h_{oe}	1.0	40	$\mu\text{ mhos}$
Noise Figure ($V_{CE}=-5.0\text{V dc}$, $I_C=-100\mu\text{A dc}$, $R_s=1.0\text{ k}\Omega$, $f=1.0\text{KHz}$)	NF	—	5.0	dB

■ SWITCHING CHARACTERISTICS

Characteristic	Symbol	Min	Max	Unit
Delay Time	t_d ($V_{CC}=-3.0\text{V dc}$, $V_{BE}=-0.5\text{V dc}$, $I_C=-10\text{mA dc}$, $I_{B1}=-1.0\text{mA dc}$)	—	35	ns
Rise Time		t_r	—	
Storage Time	t_s ($V_{CC}=-3.0\text{V dc}$, $I_C=-10\text{mA dc}$, $I_{B1}=I_{B2}=-1.0\text{mA dc}$)	—	225	ns
Fall Time		t_f	—	

1. FR-5=1.0×0.75×0.062in.
2. Alumina=0.4×0.3×0.024in.99.5%alumina.
3. Pulse Width≤300us;Duty Cycle≤2.0%.
4. Pulse Test: Pulse Width≤300us;Duty Cycle≤2.0%.

SOT-23 Package Information


Symbol	Dimensions in Millimeters	
	MIN.	MAX.
A	0.900	1.150
A1	0.000	0.100
A2	0.900	1.050
b	0.300	0.500
c	0.080	0.150
D	2.800	3.000
E	1.200	1.400
E1	2.250	2.550
e	0.950TYP	
e1	1.800	2.000
L	0.550REF	
L1	0.300	0.500
θ	0°	8°

X-ON Electronics

Largest Supplier of Electrical and Electronic Components

Click to view similar products for [Bipolar Transistors - BJT category](#):

Click to view products by [SLKORMICRO manufacturer](#):

Other Similar products are found below :

[619691C](#) [MCH4017-TL-H](#) [MMBT-2369-TR](#) [BC546/116](#) [BC557/116](#) [BSW67A](#) [NJVMJD148T4G](#) [NTE123AP-10](#) [NTE153MCP](#) [NTE16](#)
[NTE195A](#) [NTE92](#) [C4460](#) [2N4401-A](#) [2N6728](#) [2SA1419T-TD-H](#) [2SA2126-E](#) [2SB1204S-TL-E](#) [2SC2712S-GR,LF](#) [2SC4731T-AY](#)
[2SC5488A-TL-H](#) [2SD2150T100R](#) [SP000011176](#) [FJPF5304DTU](#) [2N2907A](#) [2N3904-NS](#) [2N5769](#) [2SC2412KT146S](#) [2SD1816S-TL-E](#)
[CPH6501-TL-E](#) [MCH4021-TL-E](#) [MJE340](#) [US6T6TR](#) [NJL0281DG](#) [732314D](#) [CPH3121-TL-E](#) [CPH6021-TL-H](#) [873787E](#) [IMZ2AT108](#)
[UMX21NTR](#) [MCH6102-TL-E](#) [NJL0302DG](#) [2N3583](#) [30A02MH-TL-E](#) [NSV40301MZ4T1G](#) [NTE13](#) [NTE26](#) [NTE282](#) [NTE323](#) [NTE350](#)