

isc Silicon NPN Transistor
PMBT3904
DESCRIPTION

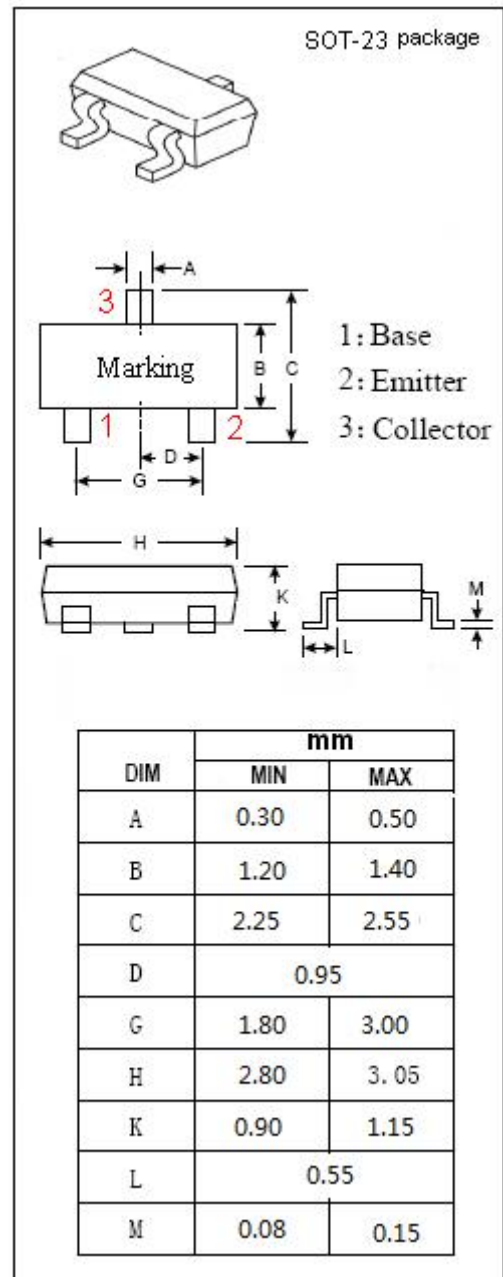
- NPN switching transistor in a SOT23 plastic package
- PNP complement: PMBT3906
- Minimum Lot-to-Lot variations for robust device performance and reliable operation

APPLICATIONS

- Designed for telephony and professional communication equipment

ABSOLUTE MAXIMUM RATINGS($T_a=25^\circ\text{C}$)

SYMBOL	PARAMETER	VALUE	UNIT
V_{CBO}	Collector-Base Voltage	60	V
V_{CEO}	Collector-Emitter Voltage	40	V
V_{EBO}	Emitter-Base Voltage	6	V
I_C	Collector Current-Continuous	100	mA
I_{CM}	Peak Collector Current	200	mA
P_C	Collector Power Dissipation @ $T_c=75^\circ\text{C}$	0.25	W
T_J	Junction Temperature	-65~150	$^\circ\text{C}$
T_{stg}	Storage Temperature Range	-65~150	$^\circ\text{C}$



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ELECTRICAL CHARACTERISTICS

T_c=25°C unless otherwise specified

SYMBOL	PARAMETER	CONDITIONS	MIN	TYP.	MAX	UNIT
I _{EBO}	Emitter Cutoff Current	V _{EB} = 6V; I _C = 0			50	nA
I _{CBO}	Collector Cutoff Current	V _{CB} = 30V; I _E = 0			50	nA
h _{FE-1}	DC Current Gain	I _C = 10mA ; V _{CE} =1 V	100		300	
h _{FE-2}	DC Current Gain	I _C = 50mA ; V _{CE} =1 V	60			
h _{FE-3}	DC Current Gain	I _C = 100mA ; V _{CE} =1 V	30			
V _{CE(sat)}	Collector-Emitter Saturation Voltage	I _C = 50mA; I _B = 5mA			0.3	V
V _{BE(sat)}	Base-Emitter Saturation Voltage	I _C = 50mA; I _B = 5mA			0.95	V
C _{OB}	Output Capacitance	I _E = 0 ; V _{CB} = 10V; f= 1MHz		0.35		pF
f _T	Current-Gain—Bandwidth Product	I _C = 10mA ; V _{CE} = 20V; f= 100MHz	300			MHz

Switching times

t _d	Delay Time	I _C = 10mA ; I _{B1} =1mA; V _{BE(off)} =-0.5V; V _{CC} = 3V			35	ns
t _r	Rise Time				35	ns
t _{stg}	Storage Time	I _C = 10mA ; I _{B1} =1mA; I _{B2} = -1mA V _{CC} = 3V			200	ns
t _f	Fall Time				50	ns

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