MMBTH10

VHF/UHF NPN SILICON TRANSISTOR

VOLTAGE	25 Volts	POWER	225 mW

FEATURES

- NPN Silicon

Å Lead free in comply with EU RoHS 2002/95/EC directives.

Å Green molding compound as per IEC61249 Std. . (Halogen Free)

MECHANICAL DATA

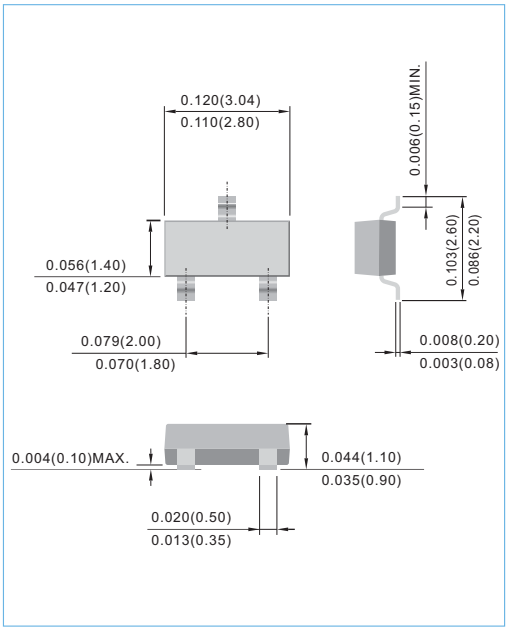
Case : SOT-23, Plastic

Terminals : Solderable per MIL-STD-750, Method 2026

Approx weight : 0.0003 ounces, 0.0084 grams

Marking:R1A

SOT-23 Unit : inch(mm)



MAXIMUM RATINGS

RATING	SYMBOL	VALUE	UNIT
Collector-Emitter Voltage	V_{CEO}	25	Vdc
Collector-Base Voltage	V_{CBO}	30	Vdc
Emitter-Base Voltage	V_{EBO}	3.0	Vdc

THERMAL CHARACTERISTICS

CHARACTERISTIC	SYMBOL	MAX.	UNITS
Total Device Dissipation FR-5 Board (Note 1) T_A=25°C Derate above 25°C	P_D	225 1.8	mW mW/°C
Thermal Resistance Junction to Ambient (Note 1)	$R_{\Theta JA}$	556	°C/W
Total Device Dissipation Alumina Substrate (Note 2) T_A=25°C Derate above 25°C	P_D	300 2.4	mW mW/°C
Thermal Resistance Junction to Ambient (Note 2)	$R_{\Theta JA}$	417	°C/W
Junction and Storage Temperature Range	T_J, T_{STG}	-55 to +150	°C

Note 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

MMBTH10

ELECTRICAL CHARACTERISTICS (T_A=25°C , unless otherwise noted)

CHARACTERISTIC	SYMBOL	MIN	TYP	MAX	UNIT
OFF CHARACTERISTICS					
Collector-Emitter Breakdown Voltage (I_C=1.0mAdc, I_B=0)	$V_{(BR)CEO}$	25	-	-	Vdc
Collector-Base Breakdown Voltage (I_C=100μAdc, I_E=0)	$V_{(BR)CBO}$	30	-	-	Vdc
Emitter-Base Breakdown Voltage (I_E=10μAdc, I_C=0)	$V_{(BR)EBO}$	3.0	-	-	Vdc
Collector Cutoff Current (V_{CB}=25Vdc, I_E=0)	I_{CBO}	-	-	100	nAdc
Emitter Cutoff Current (V_{EB}=2.0Vdc, I_C=0)	I_{EBO}	-	-	100	nAdc
ON CHARACTERISTICS					
DC Current Gain (I_C=4.0mAdc, V_{CE}=10Vdc)	hFE	60	-	-	-
Collector-Emitter Saturation Voltage (I_C=4.0mAdc, I_B=0.4mAdc)	V_{CE}(sat)	-	-	0.5	Vdc
Base-Emitter On Voltage (I_C=4.0mAdc, V_{CE}=10Vdc)	V_{BE}	-	-	0.95	Vdc
SMALL-SIGNAL CHARACTERISTICS					
Current-Gain-Bandwidth Product (I_C=4.0mAdc, V_{CE}=10Vdc, f=100MHz)	fT	650	-	-	MHz
Collector-Base Capacitance (V_{CB}=10Vdc, I_E=0, f=1.0MHz)	Ccb	-	-	0.7	pF
Common-Base Feedback Capacitance (V_{CB}=10Vdc, I_E=0, f=1.0MHz)	Crb	-	-	0.65	pF
Collector-Base Time Constant (I_C=4.0mAdc, V_{CB}=10Vdc, f=31.8MHz)	rb'C_C	-	-	9.0	ps

MMBTH10

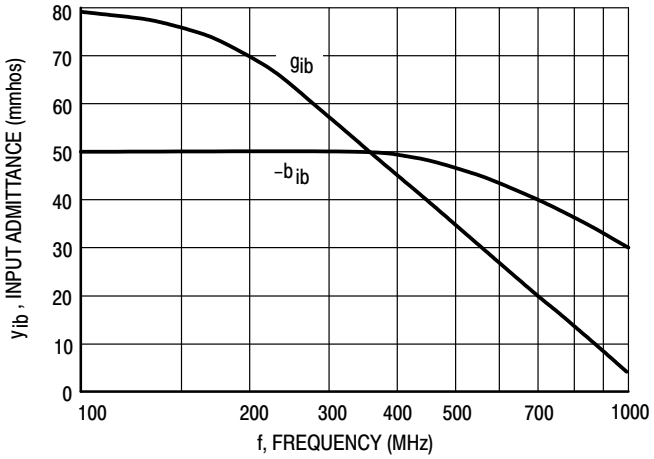


Figure 1. Rectangular Form

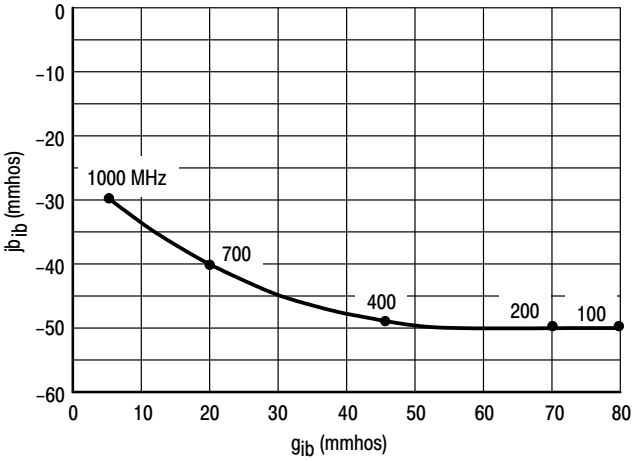


Figure 2. Polar Form

y_{fb}, FORWARD TRANSFER ADMITTANCE

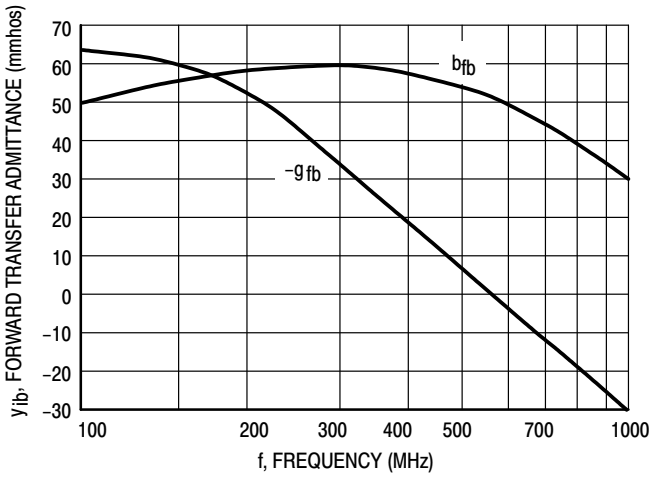


Figure 3. Rectangular Form

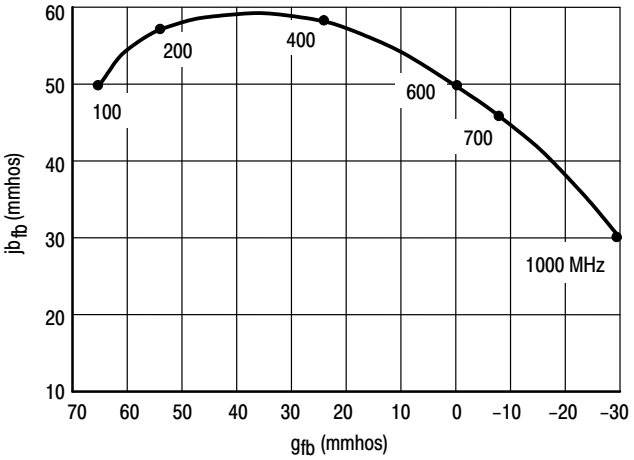


Figure 4. Polar Form

MMBTH10

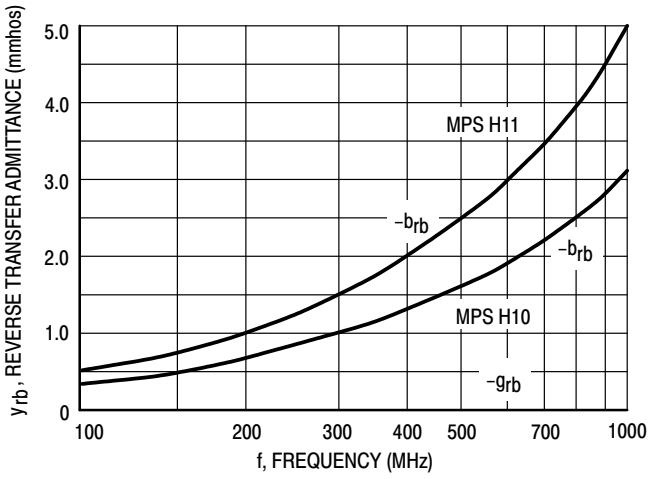


Figure 5. Rectangular Form

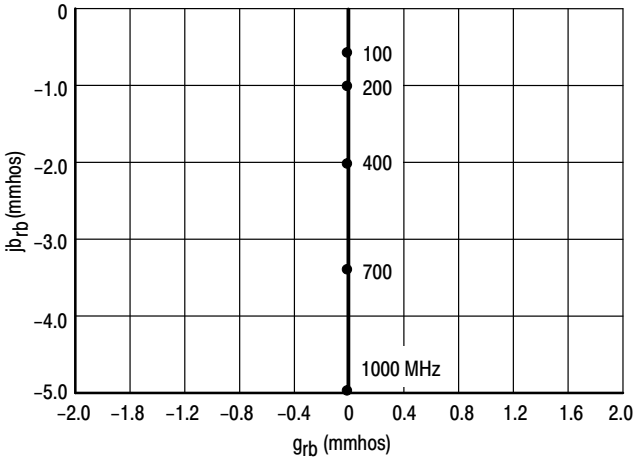


Figure 6. Polar Form

y_{ob}, OUTPUT ADMITTANCE

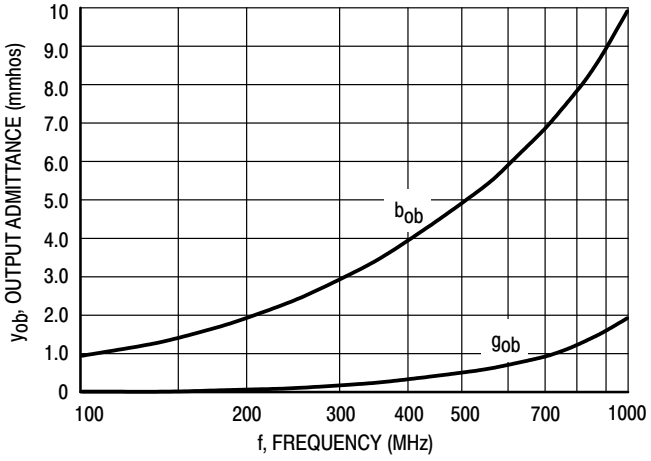


Figure 7. Rectangular Form

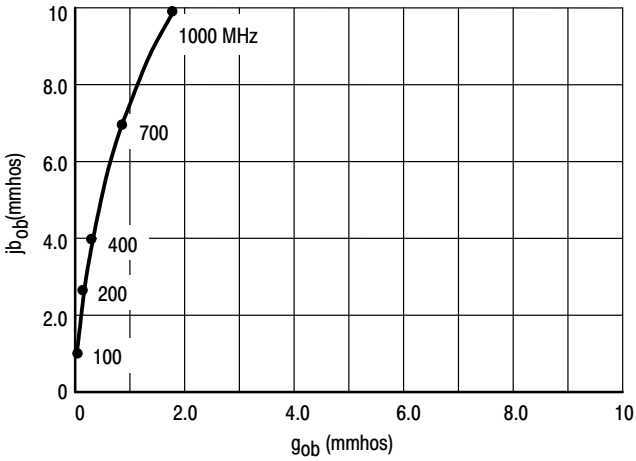
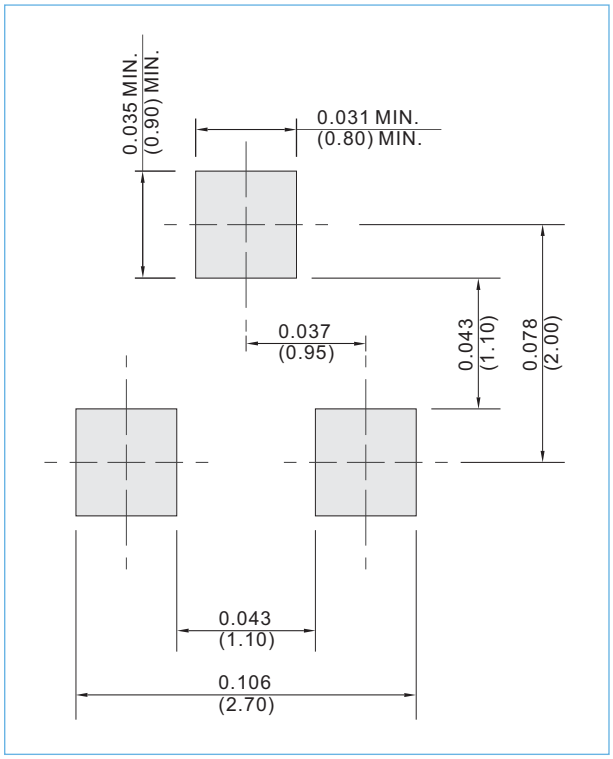


Figure 8. Polar Form

MMBTH10

MOUNTING PAD LAYOUT

SOT-23 Unit : inch(mm)



ORDER INFORMATION

- Packing information

  T/R - 12K per 13" plastic Reel

  T/R - 3K per 7” plastic Reel

LEGAL STATEMENT