



MMBT2907A

PNP GENERAL PURPOSE SWITCHING TRANSISTOR

VOLTAGE 60 Volts **POWER** 225 mW

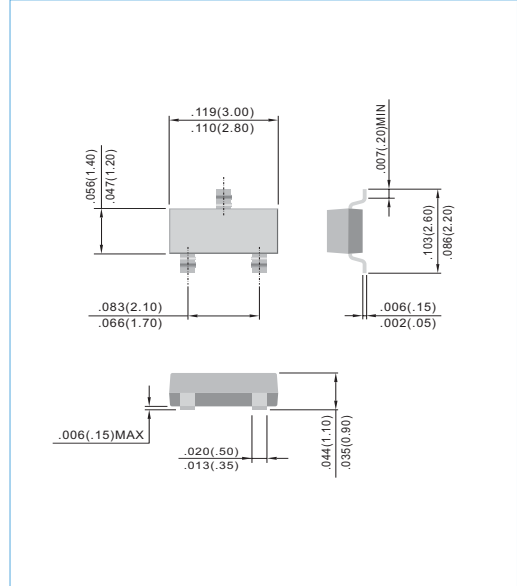
SOT-23 Unit: inch (mm)

FEATURES

PNP epitaxial silicon, planar design
 Collector-emitter voltage $V_{CE} = -60V$
 Collector current $I_C = -600mA$
 Pb free product are available : 99% Sn above can meet RoHS
 environment substance directive request

MECHANICAL DATA

Case: SOT-23
 Terminals : Solderable per MIL-STD-750,Method 2026
 Approx Weight: 0.008 grams
 Device Marking : M7A



ABSOLUTE MAXIMUM RATINGS

Parameter	Symbol	Value	Units
Collector-Emitter Voltage	V_{CEO}	-60	V
Collector-Base Voltage	V_{CBO}	-60	V
Emitter-Base Voltage	V_{EBO}	-5.0	V
Collector Current-Continuous	I_C	-600	mA

THERMAL CHARACTERISTICS

Parameter	Symbol	Value	Units
Max Power Dissipation (Note 1)	P_{TOT}	225	mW
Storage Temperature	T_{STG}	-55 to 150	$^{\circ}C$
Junction Temperature	T_J	-55 to 150	$^{\circ}C$
Thermal Resistance, Junction to Ambient	$R_{\theta JA}$	556	$^{\circ}C / W$

Note 1 : Transistor mounted on FR-5 board 1.0 x 0.75 x 0.062 in.



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

Parameter	Symbol	Test Condition	Min.	Typ.	Max.	Units
Collector-Emitter Breakdown Voltage	V _(BR) CEO	I _C =-10mA, I _B =0	-60	-	-	V
Collector-Base Breakdown Voltage	V _(BR) CBO	I _C =-10μA, I _E =0	-60	-	-	V
Emitter-Base Breakdown Voltage	V _(BR) EBO	I _E =-10μA, I _C =0	-5.0	-	-	V
Base Cutoff Current	I _{BL}	V _{CE} =-30V, V _{EB} =-0.5V	-	-	-50	nA
Collector Cutoff Current	I _{CEX}	V _{CE} =-30V, V _{EB} =-0.5V	-	-	-50	nA
	I _{CBO}	V _{CE} =-50V, I _E =0	-	-	-10	nA
		V _{CE} =-50V, I _E =0 T _J =125°C	-	-	-10	μA
DC Current Gain	h _{FE}	I _C =-0.1mA, V _{CE} =-10V	75	-	-	-
		I _C =-1.0mA, V _{CE} =-10V	100	-	-	-
		I _C =-10mA, V _{CE} =-10V	100	-	-	-
		I _C =-150mA, V _{CE} =-10V	100	-	-	300
		I _C =-500mA, V _{CE} =-10V	50	-	-	-
Collector-Emitter Saturation Voltage	V _{CE(SAT)}	I _C =-150mA, I _B =-15mA	-	-	-0.4	V
		I _C =-500mA, I _B =-50mA	-	-	-1.6	V
Base-Emitter Saturation Voltage	V _{BE(SAT)}	I _C =-150mA, I _B =-15mA	-	-	-1.3	V
		I _C =-500mA, I _B =-50mA	-	-	-2.6	V
Collector-Base Capacitance	C _{CB0}	V _{CB} =-10V, I _E =0, f=1MHz	-	-	8.0	pF
Emitter-Base Capacitance	C _{EBO}	V _{CB} =-2V, I _C =0, f=1MHz	-	-	30	pF
Current Gain-Bandwidth Product	F _T	I _C =-50mA, V _{CE} =-20V, f=100MHz	200	-	-	MHz
Turn-On Time	t _{on}	V _{CC} =-30V, V _{BE} =-0.5V, I _C =-150mA, I _B =-15mA	-	-	45	ns
Delay Time	t _d	V _{CC} =-30V, V _{BE} =-0.5V, I _C =-150mA, I _B =-15mA	-	-	10	ns
Rise Time	t _r	V _{CC} =-30V, V _{BE} =-0.5V, I _C =-150mA, I _{B1} =-15mA	-	-	40	ns
Turn-Off Time	t _{off}	V _{CC} =-6V, I _C =-150mA, I _{B1} =I _{B2} =-15mA	-	-	100	ns
Storage Time	t _s	V _{CC} =-6V, I _C =-150mA, I _{B1} =I _{B2} =-15mA	-	-	80	ns
Fall Time	t _f	V _{CC} =-6V, I _C =-150mA, I _{B1} =I _{B2} =-15mA	-	-	30	ns



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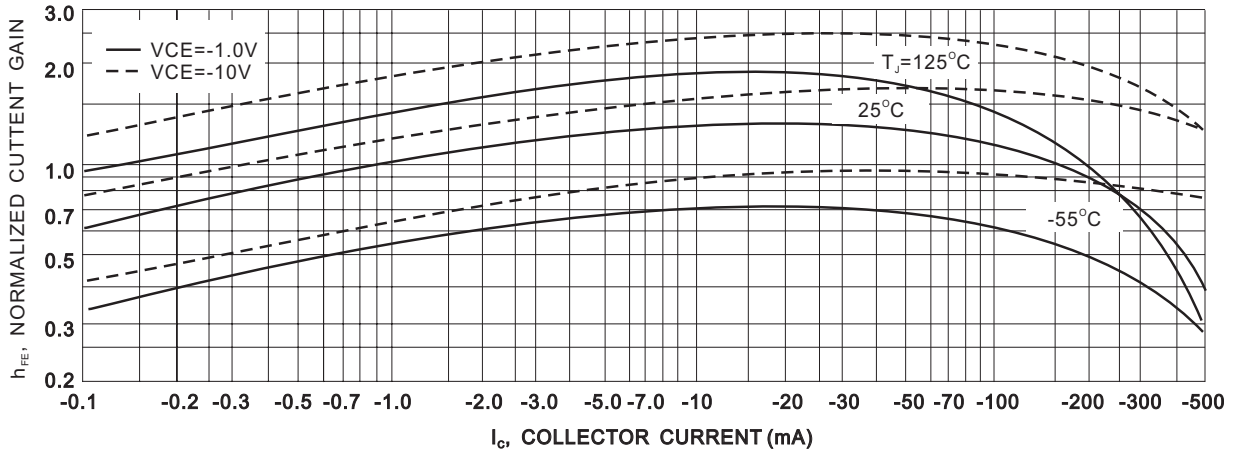


Fig.1-DC Current Gain

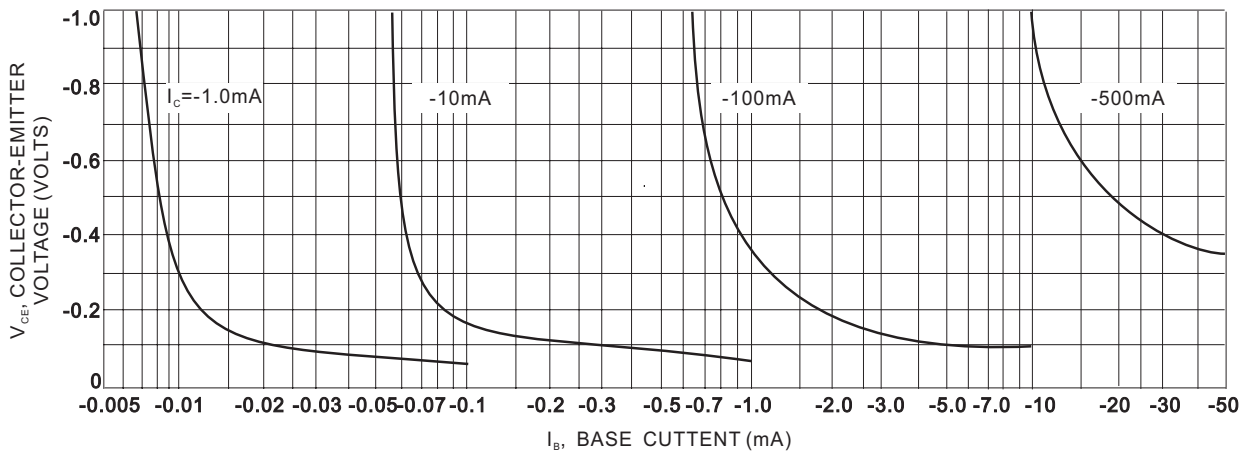


Fig.2-Collector Saturation Region

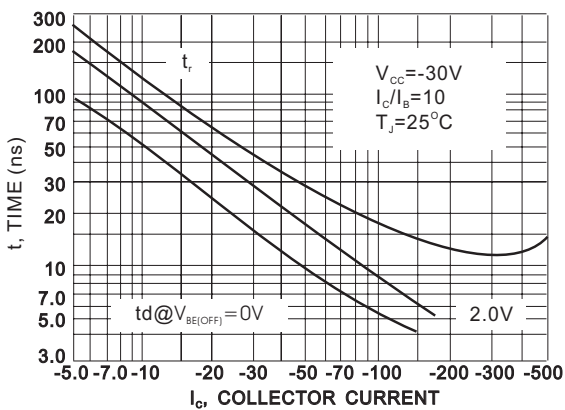


Fig.3-Turn-On Time

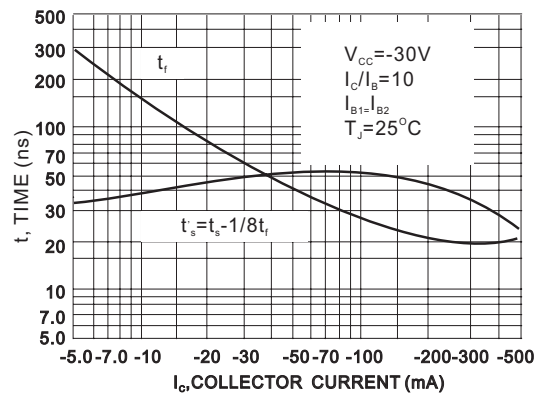


Fig.4-Turn-Off Time



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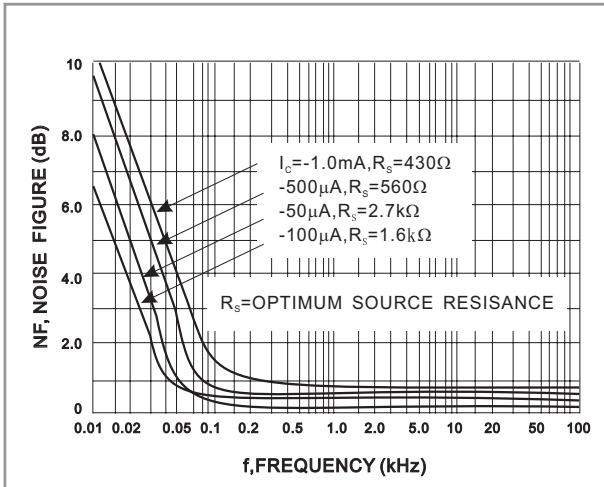


Fig.5-Frequency Effects

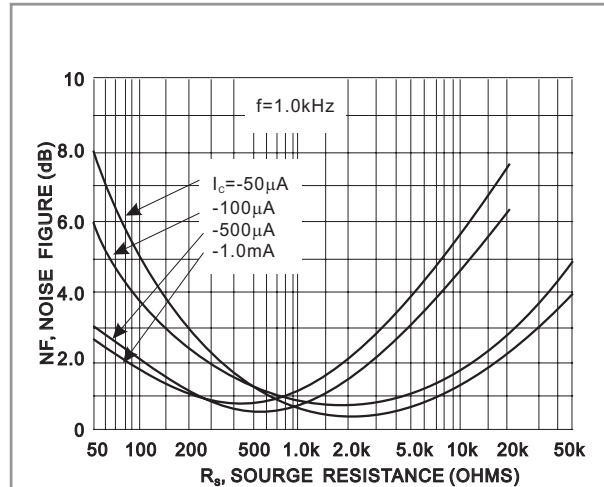


Fig.6-Source Resistance Effects

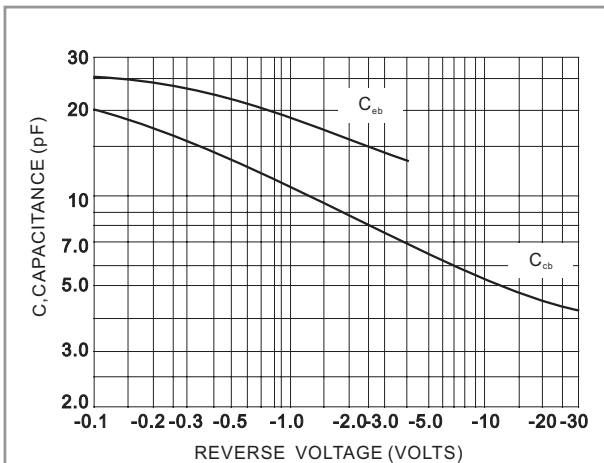


Fig.7-Capacitances

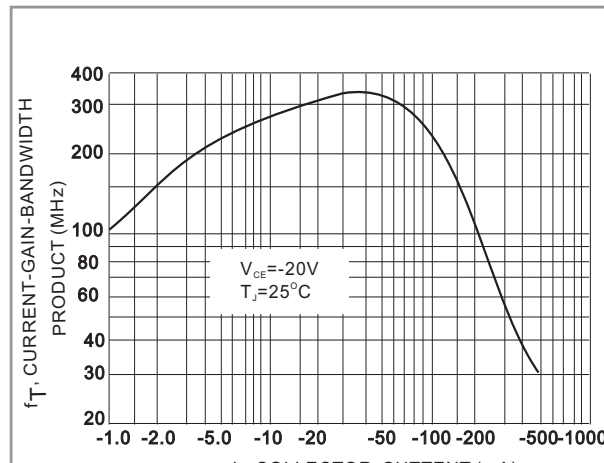


Fig.8-Current-Gain-Bandwidth Product

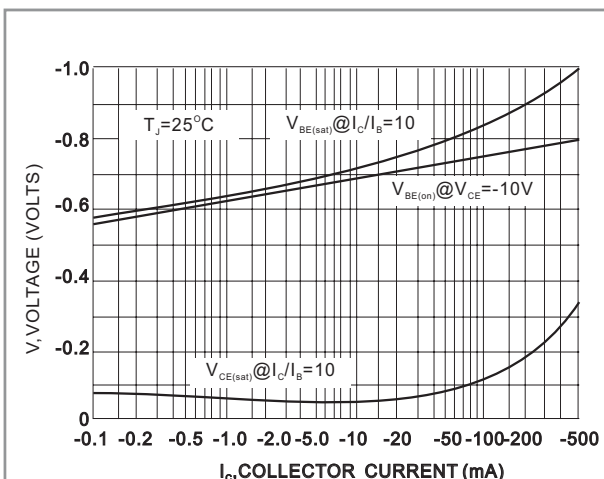


Fig.9-On Voltage

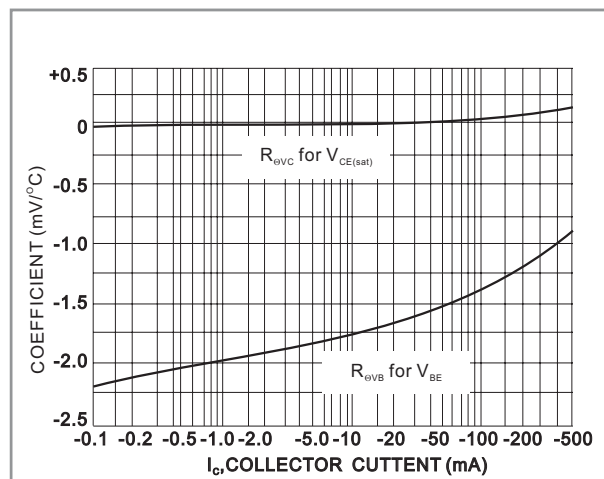
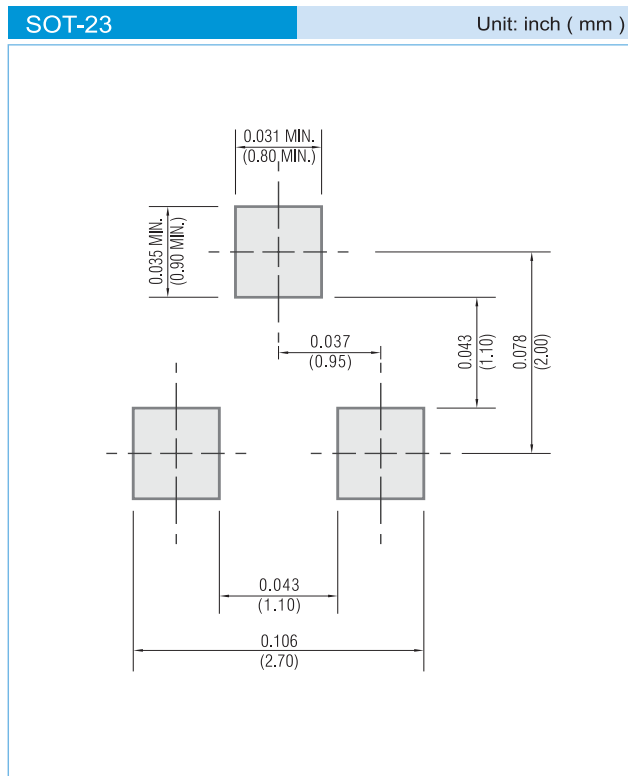


Fig.10-Temperature Coefficients



MOUNTING PAD LAYOUT



ORDER INFORMATION

- Packing information
 - T/R - 10K per 13" plastic Reel
 - T/R - 3K per 7" plastic Reel

LEGAL STATEMENT

IMPORTANT NOTICE

This information is intended to unambiguously characterize the product in order to facilitate the customer's evaluation of the device in the application. The information will help the customer's technical experts determine that the device is compatible and interchangeable with similar devices made by other vendors. The information in this data sheet is believed to be reliable and accurate. The specifications and information herein are subject to change without notice. New products and improvements in products and product characterization are constantly in process. Therefore, the factory should be consulted for the most recent information and for any special characteristics not described or specified.

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