MMBT2907A-AU

PNP GENERAL PURPOSE SWITCHING TRANSISTOR

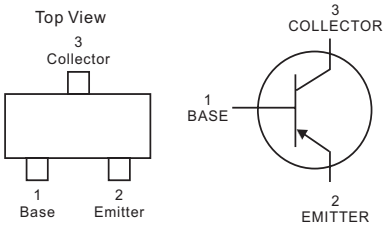
VOLTAGE 60 Volt **POWER** 225 mWatt

FEATURES

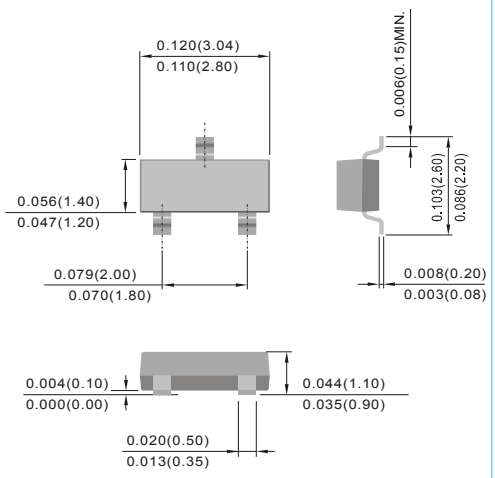
- PNP epitaxial silicon, planar design
- Collector-emitter voltage VCE = -60V
- Collector current IC = -600mA
- AEC-Q101 qualified
- Lead free in compliance with EU RoHS 2.0
- Green molding compound as per IEC 61249 standard

MECHANICAL DATA

Case: SOT-23
Terminals: Solderable per MIL-STD-750,Method 2026
Approx. Weight: 0.0003 ounces, 0.0084 grams
Device Marking: M7A



SOT-23 Unit : inch(mm)



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 CHATACTERISTICS

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

Note 1 : Transistor mouted on FR-4 board 70 x 60 x 1 mm.

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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 I_C=-1.0mA,V_{CE}=-10V I_C=-10mA,V_{CE}=-10V I_C=-150mA,V_{CE}=-10V I_C=-500mA,V_{CE}=-10V	75 100 100 100 50	- - - - -	- - - 300 -	-
Collector-Emitter Saturation Voltage	$V_{CE(SAT)}$	I_C=-150mA,I_B=-15mA I_C=-500mA,I_B=-50mA	- -	- -	-0.4 -1.6	V
Base-Emitter Saturation Voltage	$V_{BE(SAT)}$	I_C=-150mA,I_B=-15mA I_C=-500mA,I_B=-50mA	- -	- -	-1.3 -2.6	V
Collector-Base Capacitance	C_{CBO}	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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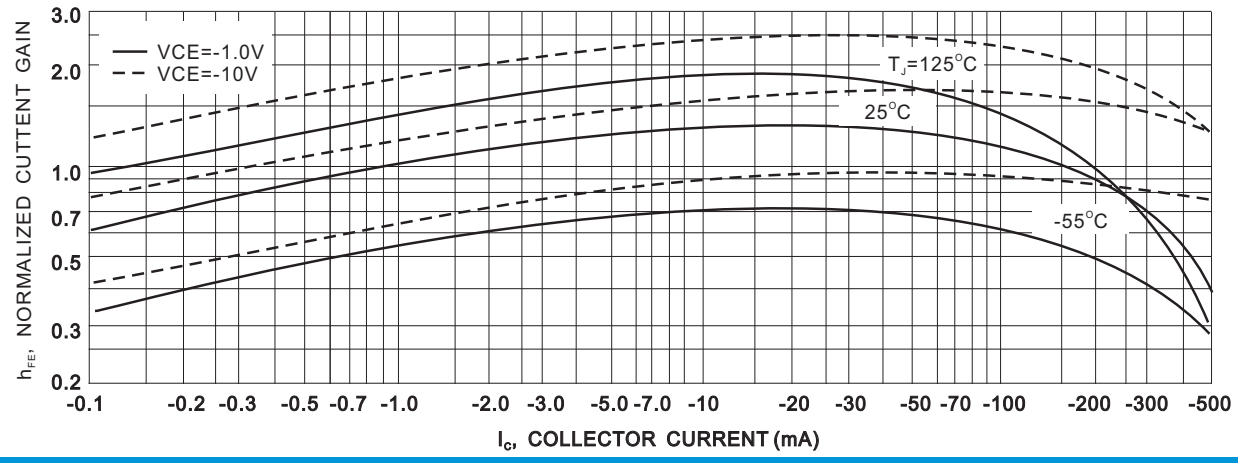


Fig.1-DC Cuttent Gain

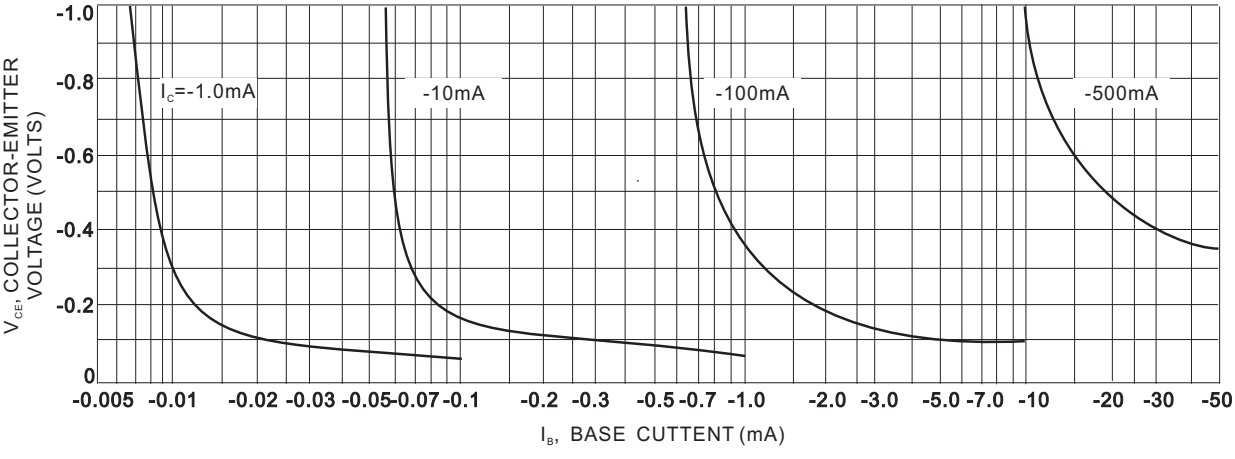


Fig.2-Collector Saturation Region

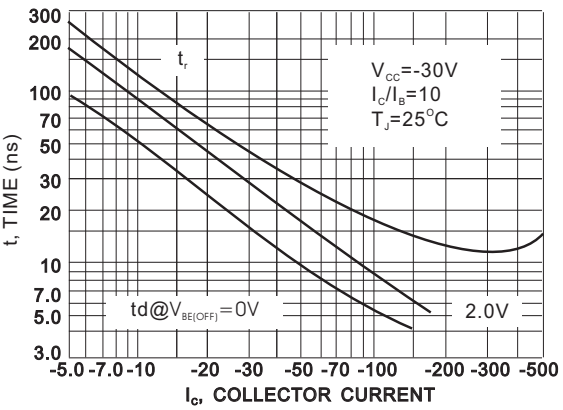


Fig.3-Turn-On Time

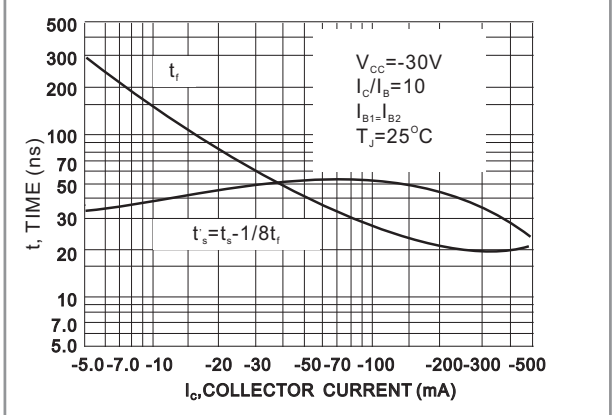


Fig.4-Turn-Off Time

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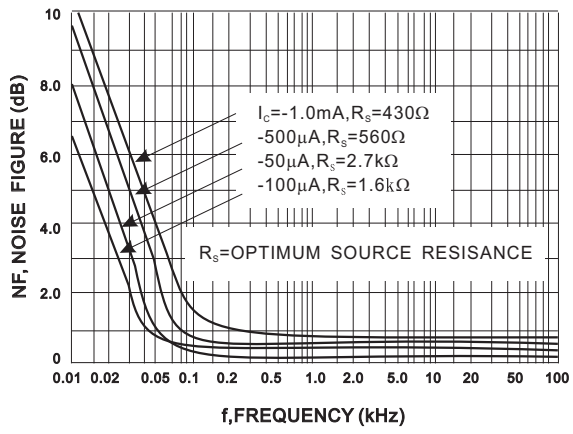


Fig.5-Frequency Effects

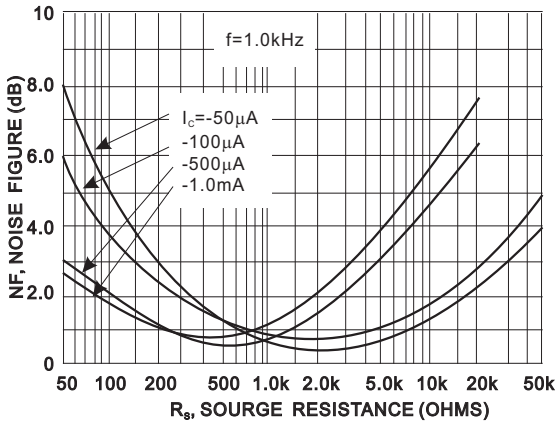


Fig.6-Source Resistance Effects

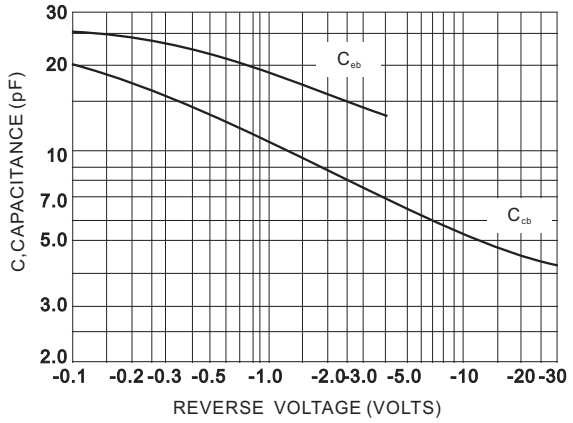


Fig.7-Capacitances

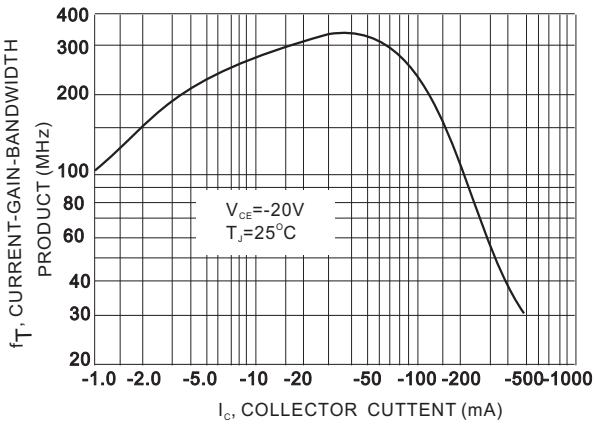


Fig.8-Current-Gain-Bandwidth Product

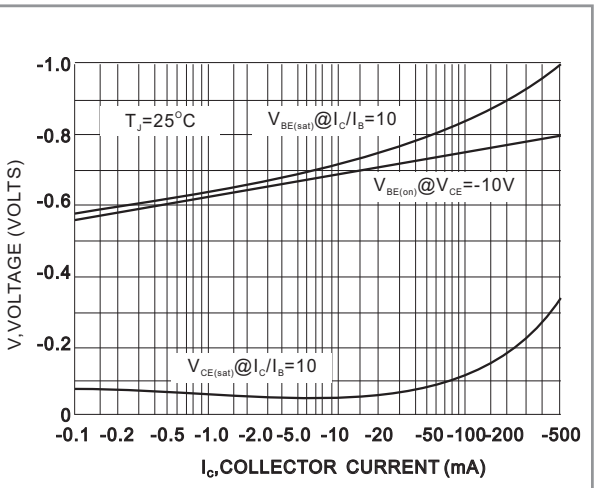


Fig.9-On Voltage

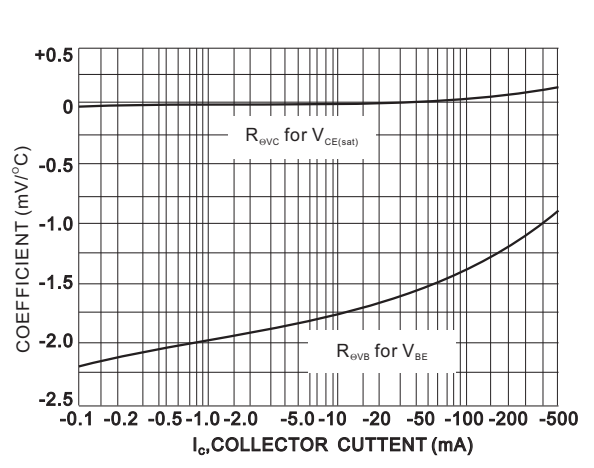
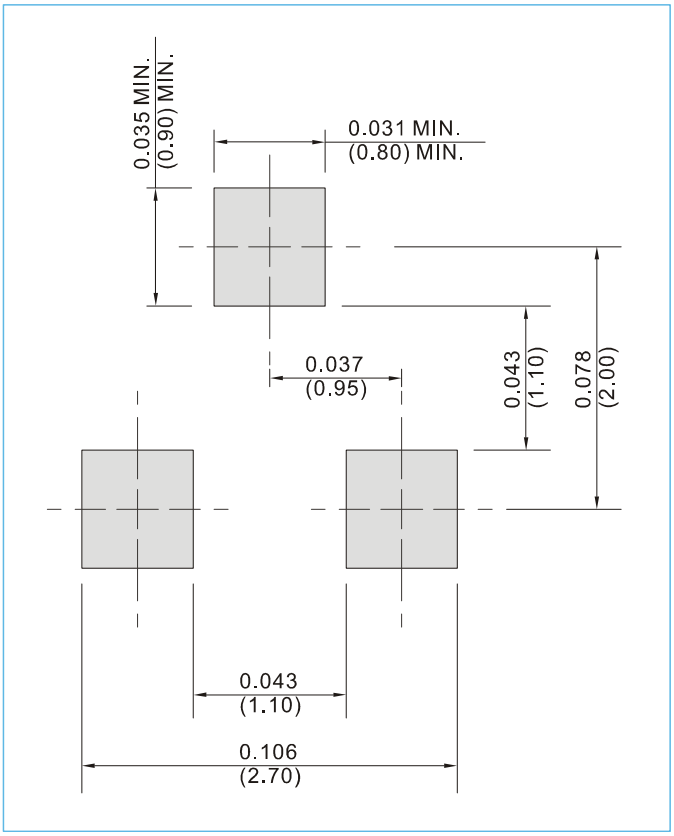


Fig.10-Temperature Coefficients

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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

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Part No._packing code_Version

MMBT2907A-AU_R1_000A2

MMBT2907A-AU_R2_000A2

For example :

RB500V-40_R2_00001

- Part No.
- Packing type means T/R
- Packing size code means 13"
- Version code means HF
- Serial number

Packing Code XX				Version Code XXXXX		
Packing type	1st Code	Packing size code	2nd Code	HF or RoHS	1st Code	2nd~5th Code
Tape and Ammunition Box (T/B)	A	N/A	0	HF	0	serial number
Tape and Reel (T/R)	R	7"	1	RoHS	1	serial number
Bulk Packing (B/P)	B	13"	2			
Tube Packing (T/P)	T	26mm	X			
Tape and Reel (Right Oriented) (TRR)	S	52mm	Y			
Tape and Reel (Left Oriented) (TRL)	L	PANASERT T/B CATHODE UP (PBCU)	U			
FORMING	F	PANASERT T/B CATHODE DOWN (PBCD)	D			

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