



MMBT2907A-AU

PNP GENERAL PURPOSE SWITCHING TRANSISTOR

VOLTAGE 60 Volt **POWER** 225 mWatt

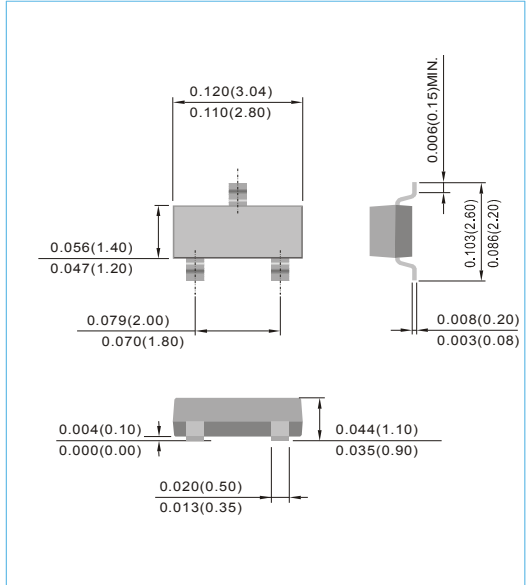
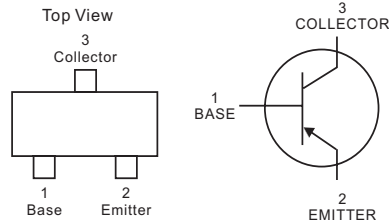
SOT-23 Unit : inch(mm)

FEATURES

- PNP epitaxial silicon, planar design
- Collector-emitter voltage $V_{CE} = -60V$
- Collector current $I_C = -600mA$
- 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



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-4 board 70 x 60 x 1 mm.



MMBT2907A-AU

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 _{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 _B =-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



MMBT2907A-AU

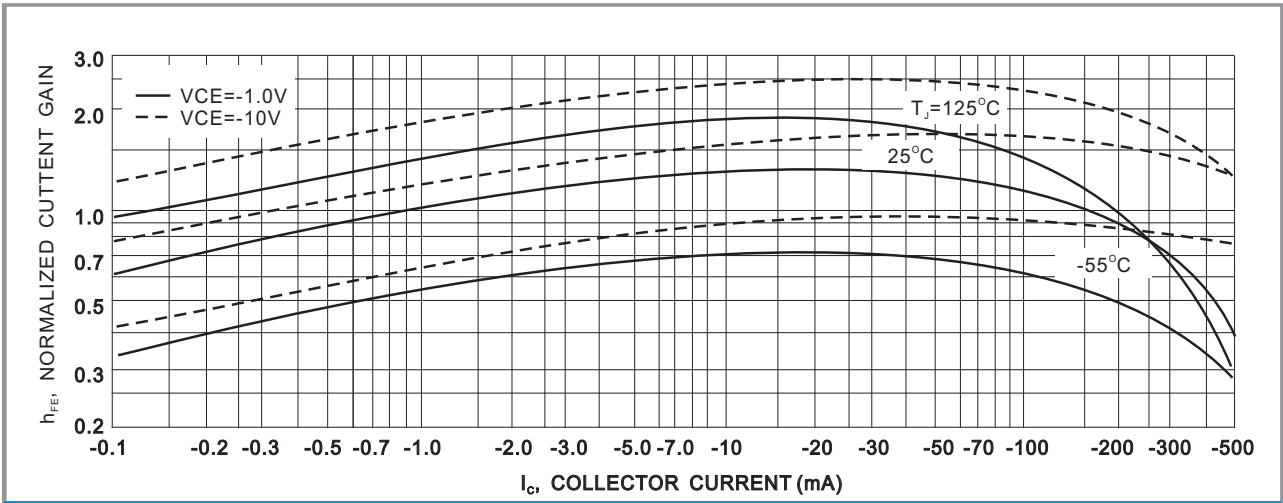


Fig.1-DC Current Gain

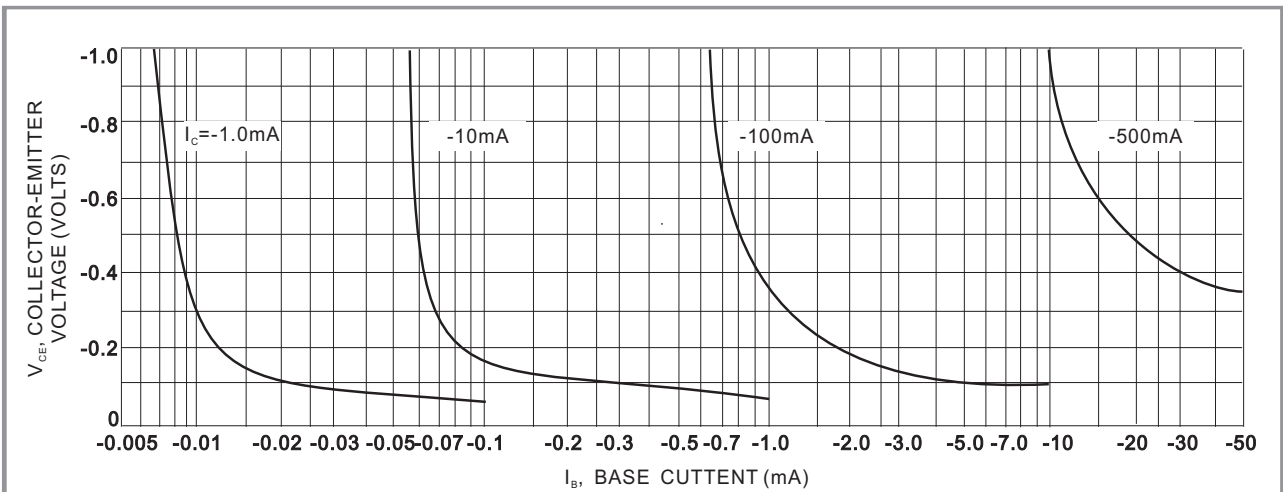


Fig.2-Collector Saturation Region

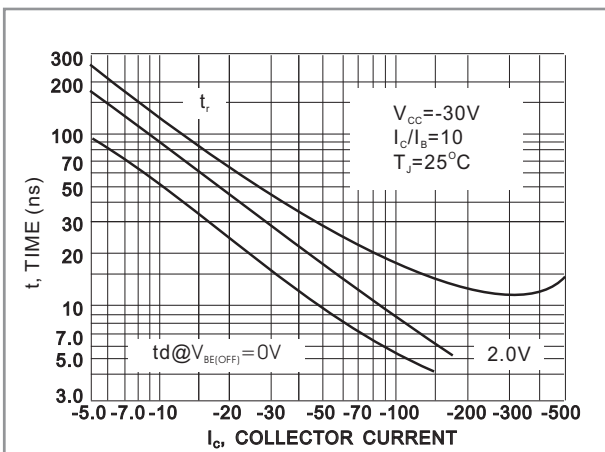


Fig.3-Turn-On Time

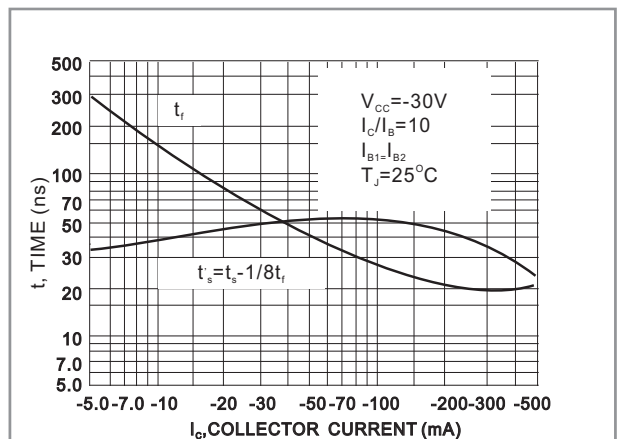


Fig.4-Turn-Off Time



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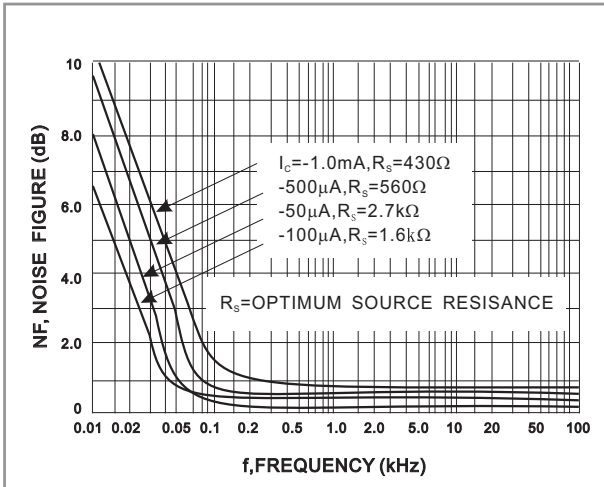


Fig.5-Frequency Effects

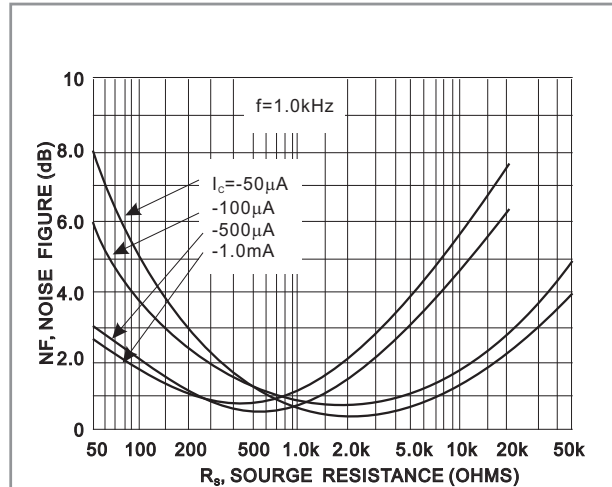


Fig.6-Source Resistance Effects

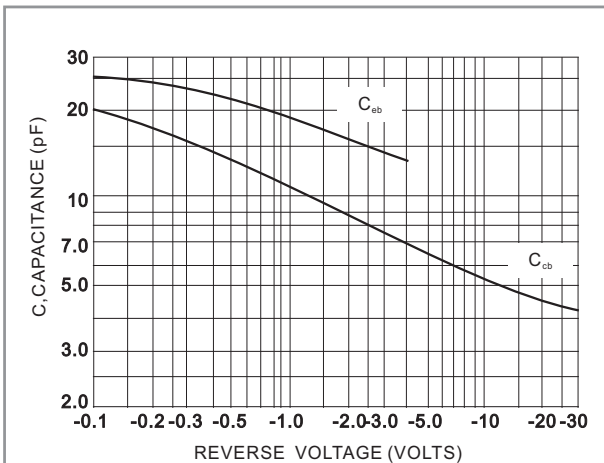


Fig.7-Capacitances

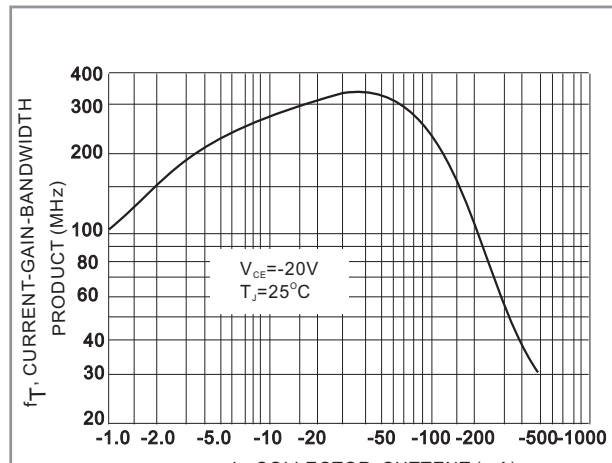


Fig.8-Current-Gain-Bandwidth Product

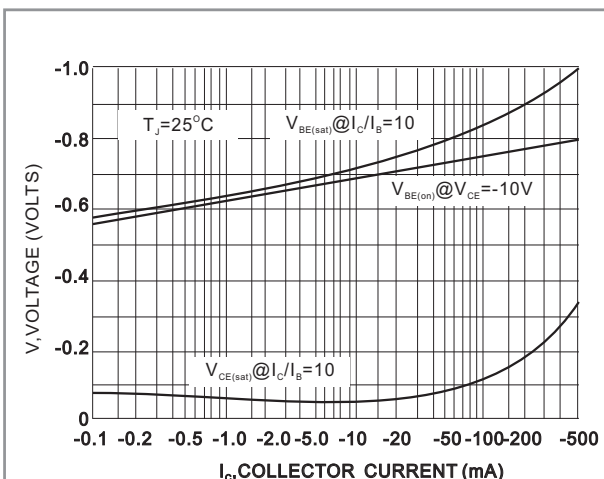


Fig.9-On Voltage

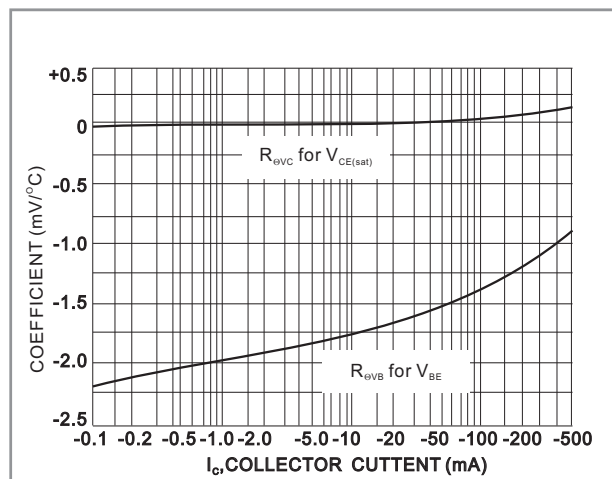
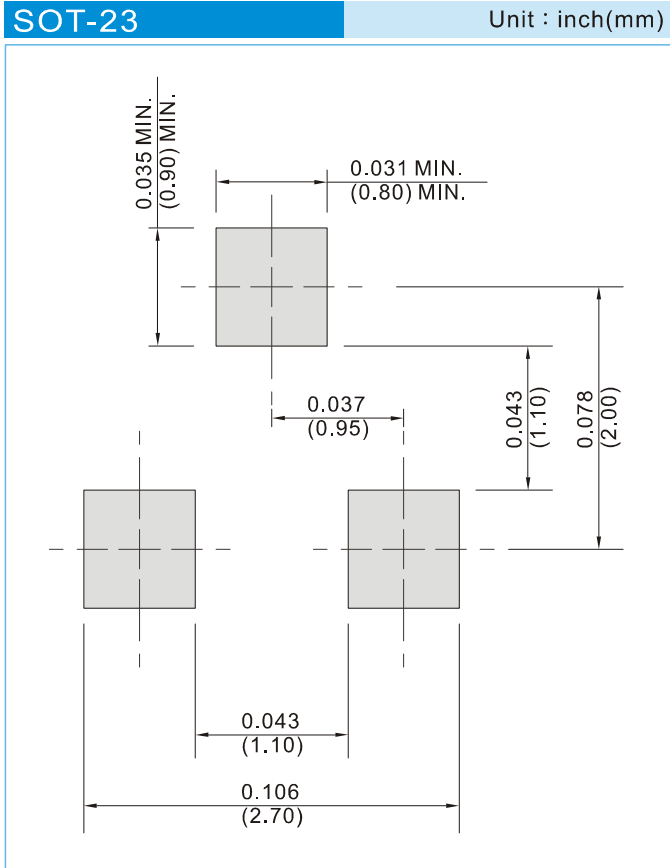


Fig.10-Temperature Coefficients



MMBT2907A-AU

MOUNTING PAD LAYOUT



ORDER INFORMATION

- Packing information
T/R - 12K per 13" plastic Reel
T/R - 3K per 7" plastic Reel



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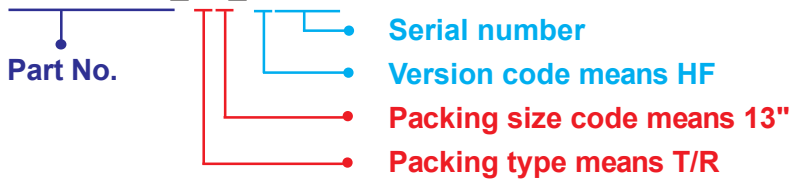
Part No._packing code_Version

MMBT2907A-AU_R1_000A2

MMBT2907A-AU_R2_000A2

For example :

RB500V-40_R2_00001



Packing Code XX				Version Code XXXXX		
Packing type	1 st Code	Packing size code	2 nd Code	HF or RoHS	1 st Code	2 nd ~5 th 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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