PANJIT SEMI CONDUCTOR

MMBTA42

NPN HIGH VOLTAGE TRANSISTOR

VOLTAGE 300 Volt **POWER** 250 mWatt

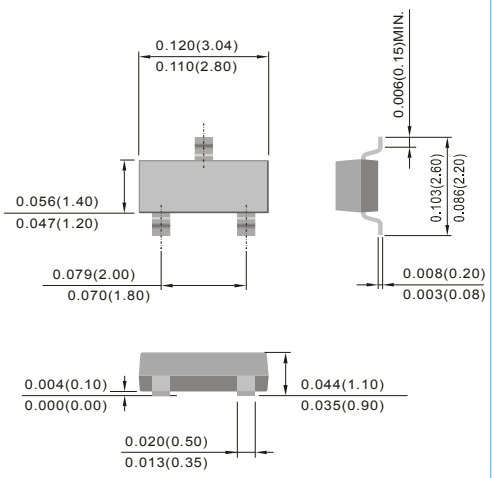
FEATURES

- NPN silicon, planar design
- Collector-emitter voltage V_{CE} = 300V
- Collector current I_C = 500mA
- Lead free in compliance with EU RoHS 2.0
- Green molding compound as per IEC 61249 standard

MECHANICAL DATA

- Case: SOT-23, Plastic
- Terminals: Solderable per MIL-STD-750, Method 2026
- Approx weight: 0.0003 ounces, 0.0084 grams
- Marking: A42

SOT-23 Unit : inch(mm)



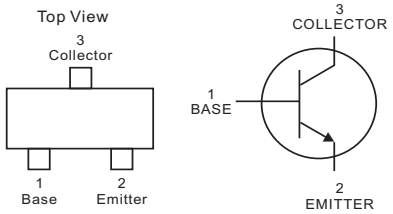
ABSOLUTE MAXIMUM RATINGS

PARAMETER	Symbol	Value	Units
Collector - Emitter Voltage	V_{CEO}	300	V
Collector - Base Voltage	V_{CBO}	300	V
Emitter - Base Voltage	V_{EBO}	6	V
Collector Current Continuous	I_C	500	mA

THERMAL CHARACTERISTICS

PARAMETER	Symbol	Value	Units
Max Power Dissipation (Note 1)	P_{TOT}	250	mW
Thermal Resistance,Junction to Ambient	$R_{\theta JA}$	500	°C/W
Junction Temperature	T_J	-55 to 150	°C
Storage Temperature	T_{STG}	-55 to 150	°C

Note 1 : Mounted on a FR4 PCB, single-sided copper, standard footprint



MMBTA42

ELECTRICAL CHARACTERISTICS

PARAMETER	Symbol	Test Condition	MIN.	TYP.	MAX.	Units
Collector - Emitter Breakdown Voltage	$V_{(BR)}CEO$	I_C=1mA,I_B=0	300	-	-	V
Collector - Base Breakdown Voltage	$V_{(BR)}CBO$	I_C=100μA,I_E=0	300	-	-	V
Emitter - Base Breakdown Voltage	$V_{(BR)}EBO$	I_E=100μA,I_C=0	6	-	-	V
Collector Cut-off Current	I_{CBO}	V_{CB}=200V,I_E=0V	-	-	100	nA
Emitter Cut-off Current	I_{EBO}	V_{EB}=6V,I_C=0	-	-	100	nA
DC Current Gain	h_{FE}	V_{CE}=10V,I_C=1.0mA V_{CE}=10V,I_C=10mA V_{CE}=10V,I_C=30mA	25 40 40	- - -	- - -	-
Collector - Emitter Saturation Voltage	$V_{CE(SAT)}$	I_C=20mA,I_B=2mA	-	-	0.5	V
Base - Emitter Satruation Voltage	$V_{BE(SAT)}$	I_C=20mA,I_B=2mA	-	-	0.9	V
Collector-Base Capacitance	C_{CBO}	V_{CB}=20V,I_E=0,f=1MHz	-	-	3	pF
Collector Gain - Bandwidth Product	F_T	I_C=10mA,V_{CE}=20V, f=100MH_Z	50	-	-	MH_Z

MMBTA42

ELECTRICAL CHARACTERISTICS CURVE

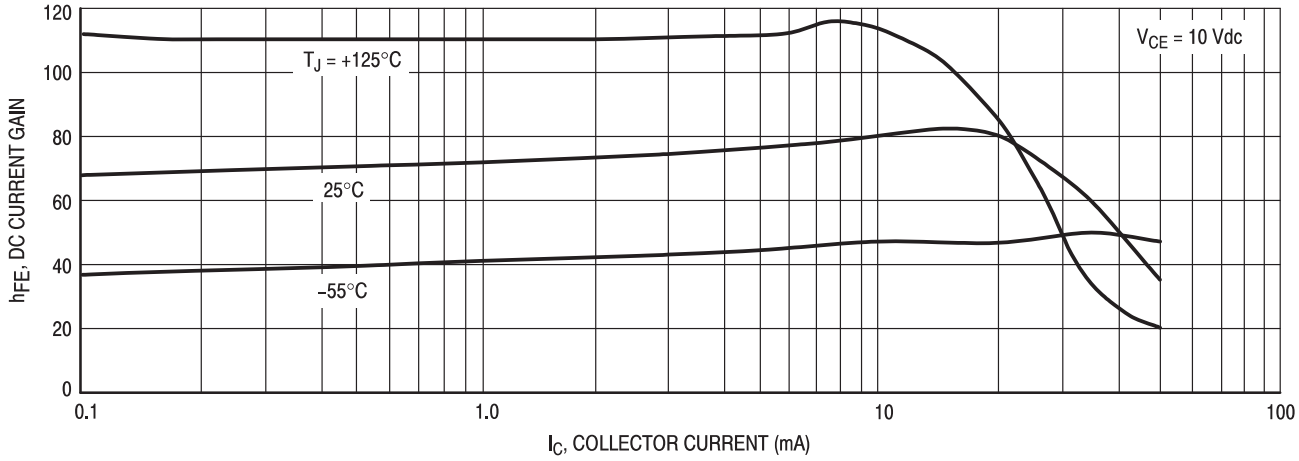


Figure 1. DC Current Gain

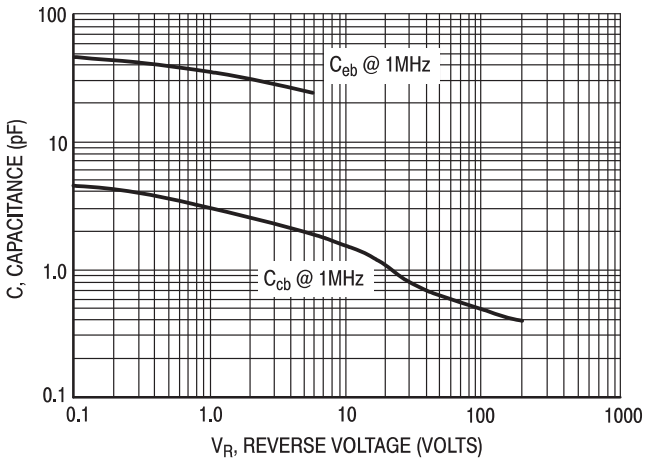


Figure 2. Capacitance

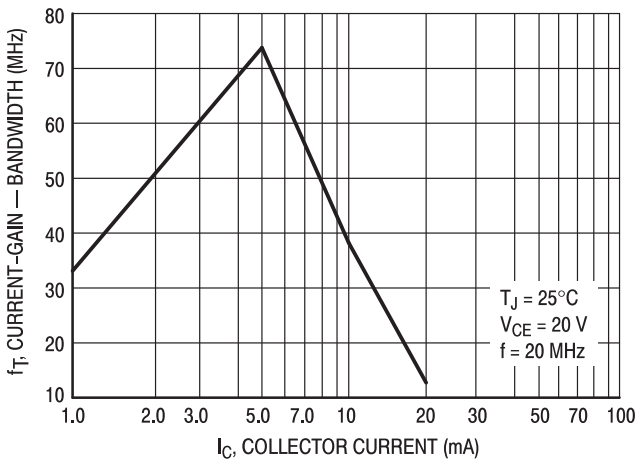
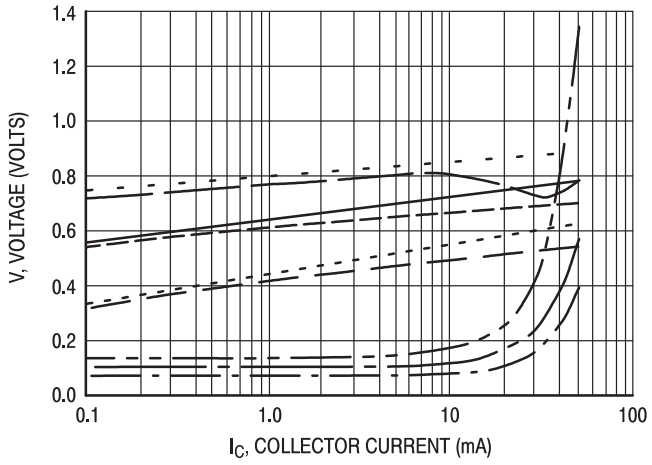


Figure 3. Current–Gain – Bandwidth



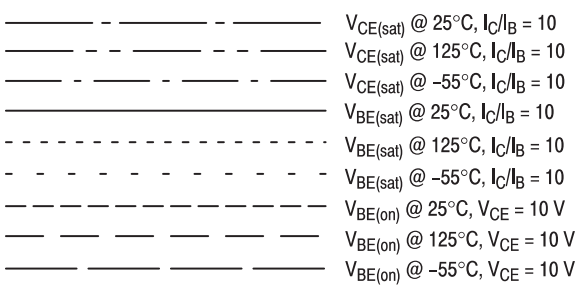


Figure 4. ON Voltages

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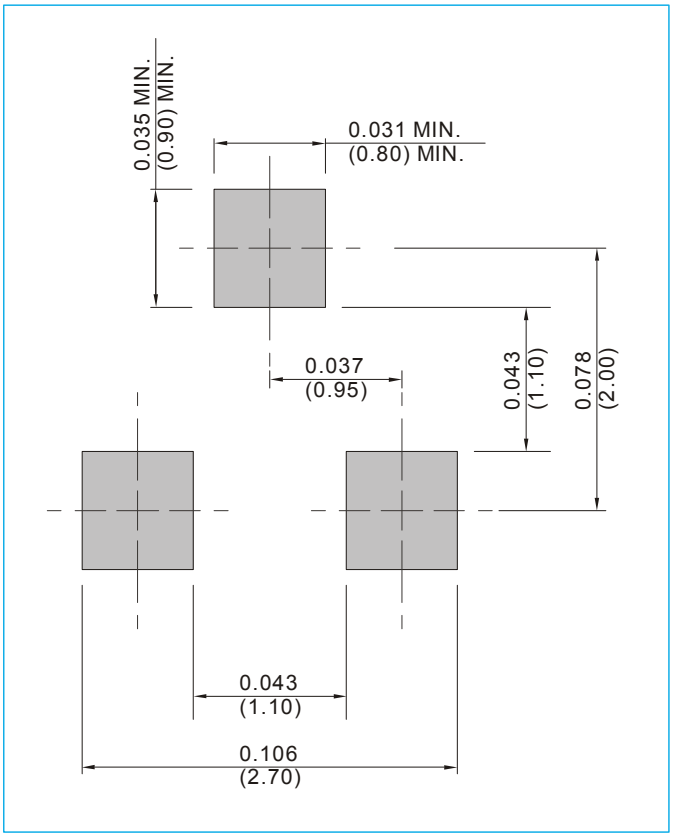
MOUNTING PAD LAYOUT

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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