RECTRON SEMICONDUCTOR
TECHNICAL SPECIFICATION

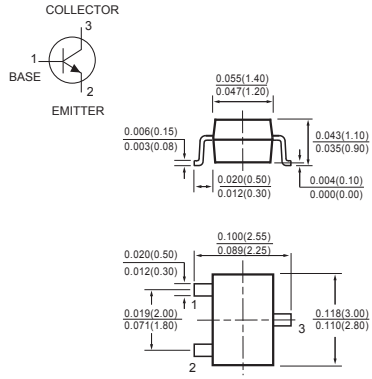
MMBTA42

SOT-23 BIPOLAR TRANSISTORS
TRANSISTOR(NPN)

FEATURES
* High breakdown voltage
* Low collector-emitter saturation voltage
* Complementary to MMBTA92 (NPN)

MECHANICAL DATA
* Case: Molded plastic
* Epoxy: UL 94V-O rate flame retardant
* Lead: MIL-STD-202E method 208C guaranteed
* Mounting position: Any
* Weight: 0.008 gram

SOT-23



Dimensions in inches and (millimeters)

MAXIMUM RATINGS AND ELECTRICAL CHARACTERISTICS
Ratings at 25 °C ambient temperature unless otherwise specified.
Single phase, half wave, 60 Hz, resistive or inductive load.
For capacitive load, derate current by 20%.

MAXIMUM RATINGS (@ T_A = 25°C unless otherwise noted)

RATINGS	SYMBOL	VALUE	UNITS
Collector Current-Continuous	I_C	0.3	A
Collector Power Dissipation	P_C	350	mW
Max. Operating Temperature Range	T_J	150	°C
Storage Temperature Range	T_{STG}	-55 to +150	°C

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

CHARACTERISTICS		SYMBOL	MIN.	TYP.	MAX.	UNITS
Collector-base breakdown voltage (I_C=100uA,I_E=0)		$V_{(BR)CBO}$	300	-	-	V
Collector-emitter breakdown voltage (I_C=1mA,I_B=0)		$V_{(BR)CEO}$	300	-	-	V
Emitter-Base breakdown voltage (I_E=100uA,I_C=0)		$V_{(BR)EBO}$	5	-	-	V
Collector cut-off current (V_{CB}=200V,I_E=0)		I_{CBO}	-	-	0.25	uA
Emitter cut-off current (V_{EB}=5V,I_C=0)		I_{EBO}	-	-	0.1	uA
DC current gain	(V_{CE}=10V,I_C=1mA)	$h_{FE(1)}$	60	-	-	-
	(V_{CE}=10V,I_C=10mA)	$h_{FE(2)}$	100	-	200	-
	(V_{CE}=10V,I_C=30mA)	$h_{FE(3)}$	60	-	-	-
Collector-emitter saturation voltage (I_C=20mA,I_B=2mA)		$V_{CE(sat)}$	-	-	0.2	V
Base-emitter saturation voltage (I_C=20mA,I_B=2mA)		$V_{BE(sat)}$	-	-	0.9	V
Transition frequency (V_{CE}=20V,I_C=10mA,f=30MHz)		f_T	50	-	-	MHz

Note: "Fully ROHS Complant", "100% Sn plating (Pb-free)".

RATING AND CHARACTERISTICS CURVES (MMBTA42)

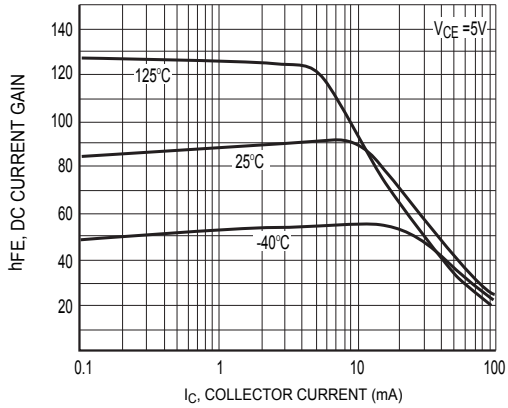


Figure 1 DC Current Gain vs. Collector Current

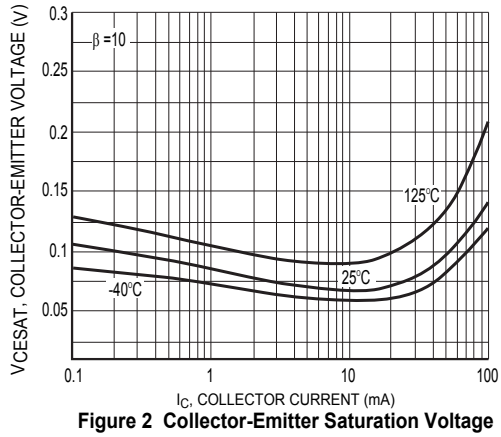


Figure 2 Collector-Emitter Saturation Voltage vs. Collector Current

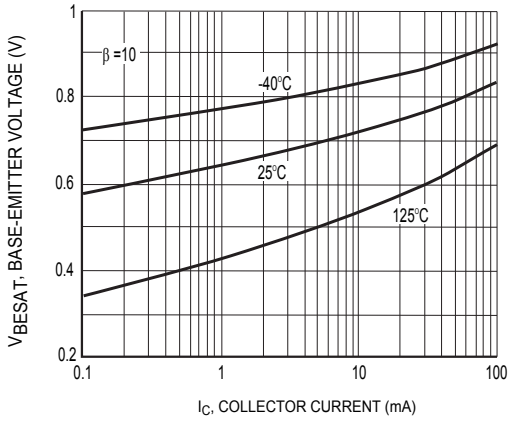


Figure 3. Base-Emitter Saturation Voltage vs. Collector Current

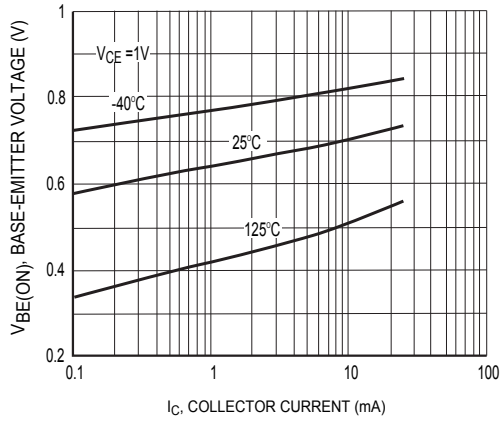


Figure 4 Base-Emitter ON Voltage vs. Collector Current

RATING AND CHARACTERISTICS CURVES (MMBTA42)

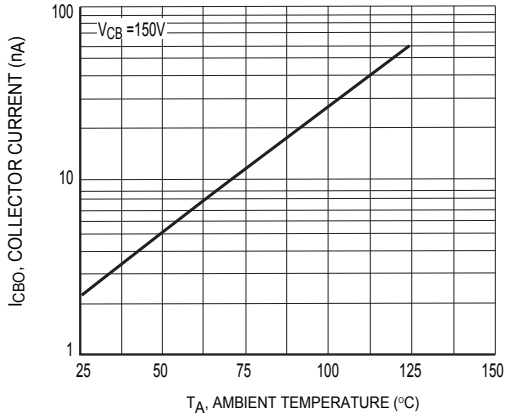


Figure 5 Collector-Cut off Current vs. Ambient Temperature

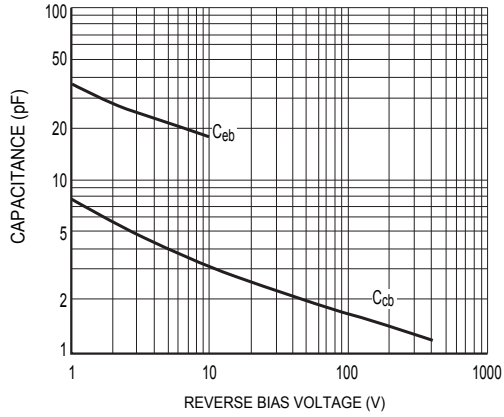


Figure 6 Collector-Base and Emitter-Base Capacitance vs. Reverse Bias Voltage

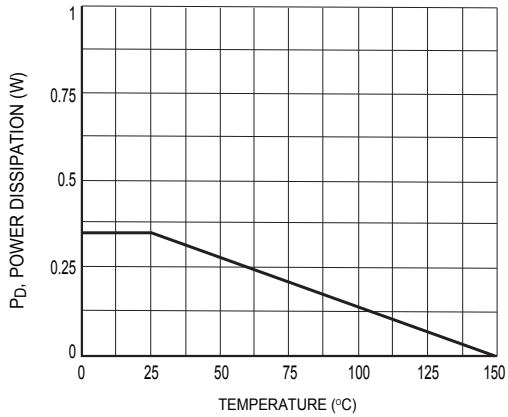


Figure 7 Power dissipation vs. Ambient Temperature

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