

DATA SHEET

MMBTA94

GENERAL PURPOSE TRANSISTOR PNP

VOLTAGE - 400 Volts **POWER** 350 mW

FEATURES

- EPITAXIAL PLANAR DIE CONSTRUCTION
- IDEAL FOR MEDIUM POWER AMPLIFICATION AND SWITCHING
- ALSO AVAILABLE IN LEAD FREE VERSION
- LEAD FREE AND HALOGEN-FREE

MECHANICAL DATA

- CASE : SOT-23
- TERMINAL : SOLDERABLE PER MIL-STD-220G, METHOD 208
- APPROX. WEIGHT:0.008 GRAMS



CASE : SOT-23

MAXIMUM RATINGS

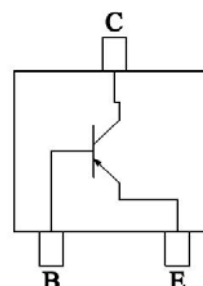
RATINGS AT 25°C AMBIENT TEMPERATURE UNLESS OTHERWISE SPECIFIED.

PARAMETER	SYMBOL	VALUE	UNITS
COLLECTOR-EMITTER VOLTAGE	V_{CEO}	-400	V
COLLECTOR-BASE VOLTAGE	V_{CBO}	-400	V
EMITTER-BASE VOLTAGE	V_{EBO}	-5.0	V
COLLECTOR CURRENT-CONTINUOUS	I_C	-100	mA
POWER DISSIPATION @ $T_A = 25^\circ\text{C}$	P_D	350	mW
Thermal Resistance, Junction-to-Ambient	$R_{\theta JA}$	357	$^\circ\text{C/W}$
OPERATING AND STORAGE JUNCTION TEMPERATURE RANGE	$T_J; T_{STG}$	-55 TO +150	$^\circ\text{C}$

NOTE:

1. INDICATES DATA IN ADDITION TO JEDEC REQUIREMENTS.

PNP



ORDERING INFORMATION

PART NUMBER	PACKAGE	SHIPPING
MMBTA94	SOT-23	Tape Reel

ELECTRICAL CHARACTERISTICS

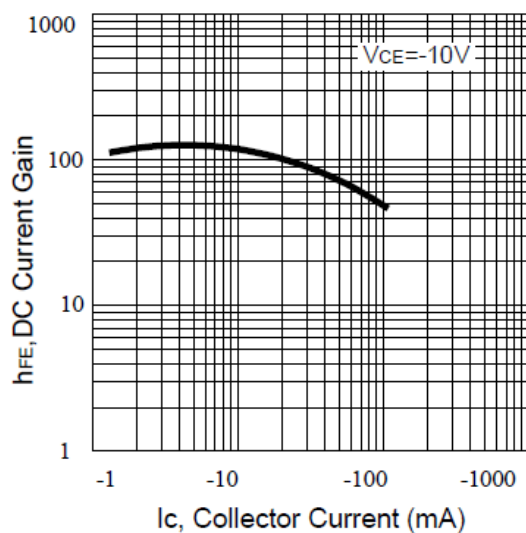
ELECTRICAL CHARACTERISTICS (AT $T_A = 25^\circ\text{C}$ UNLESS OTHERWISE NOTED)					
CHARACTERISTIC	TEST CONDITIONS	SYMBOL	MIN.	MAX.	UNITS
OFF CHARACTERISTICS					
COLLECTOR-EMITTER BREAKDOWN VOLTAGE (Note 2)	$I_C = -1\text{mA}, I_B = 0$	$V_{(BR)CEO}$	-400	-	V
COLLECTOR-BASE BREAKDOWN VOLTAGE	$I_C = -100\mu\text{A}, I_E = 0$	$V_{(BR)CBO}$	-400	-	V
EMITTER-BASE BREAKDOWN VOLTAGE	$I_E = -100\mu\text{A}, I_C = 0$	$V_{(BR)EBO}$	-5.0	-	V
COLLECTOR CUT-OFF CURRENT	$V_{CB} = -400\text{V}, I_E = 0$	I_{CBO}	-	-0.1	μA
EMITTER CUT-OFF CURRENT	$V_{EB} = -4\text{V}, I_C = 0$	I_{EBO}	-	-0.1	μA
ON CHARACTERISTICS(NOTE 1)					
DC CURRENT GAIN	$I_C = -1.0\text{mA}, V_{CE} = -10\text{V}$	h_{FE}	70	-	
	$I_C = -10\text{mA}, V_{CE} = -10\text{V}$		80	300	
	$I_C = -50\text{mA}, V_{CE} = -10\text{V}$		40	-	
	$I_C = -100\text{mA}, V_{CE} = -10\text{V}$		40	-	
COLLECTOR-EMITTER SATURATION VOLTAGE	$I_C = -10\text{mA}, I_B = -1.0\text{mA}$	$V_{CE(SAT)}$		-0.2	V
	$I_C = -50\text{mA}, I_B = -5.0\text{mA}$		-	-0.3	
BASE-EMITTER SATURATION VOLTAGE	$I_C = -10\text{mA}, I_B = -1.0\text{mA}$	$V_{BE(SAT)}$	-	-0.75	V
SMALL-SIGNAL CHARACTERISTICS					
CURRENT-GAIN-BANDWIDTH PRODUCT	$I_C = -10\text{mA}, V_{CE} = -20\text{V}$	f_T	50	-	MHz

NOTE:

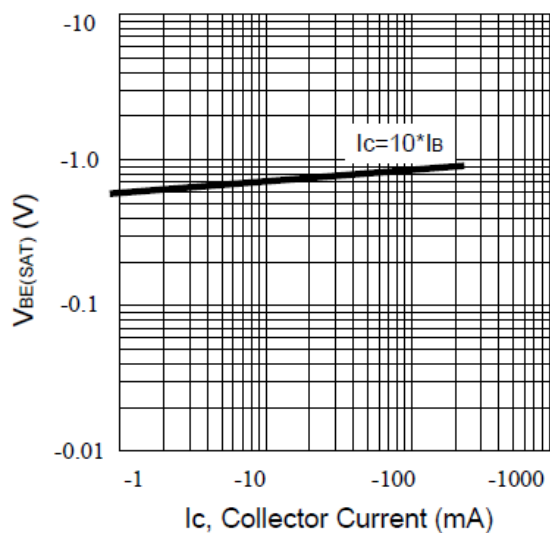
- PULSE TEST: PULSE WIDTH $\leq 300\mu\text{s}$; DUTY CYCLE $\leq 2\%$.

TYPICAL PERFORMANCE CHARACTERISTICS

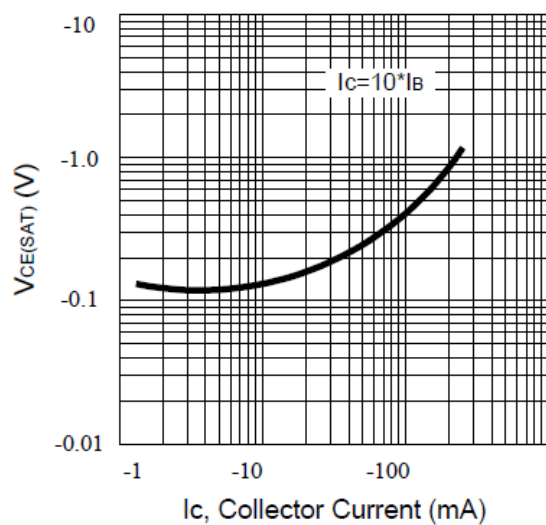
DC Current Gain



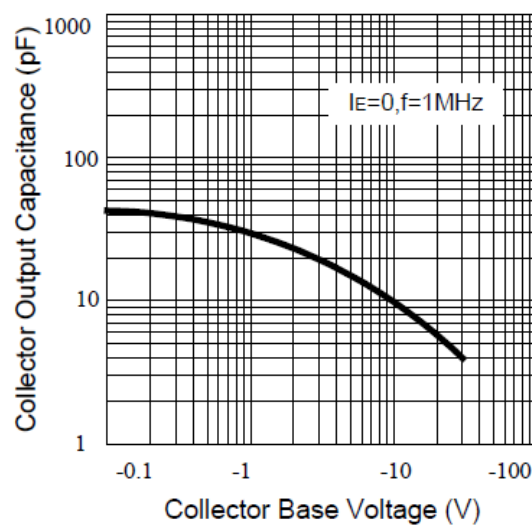
Base-Emitter Saturation Voltage



Collector-Emitter Saturation Voltage

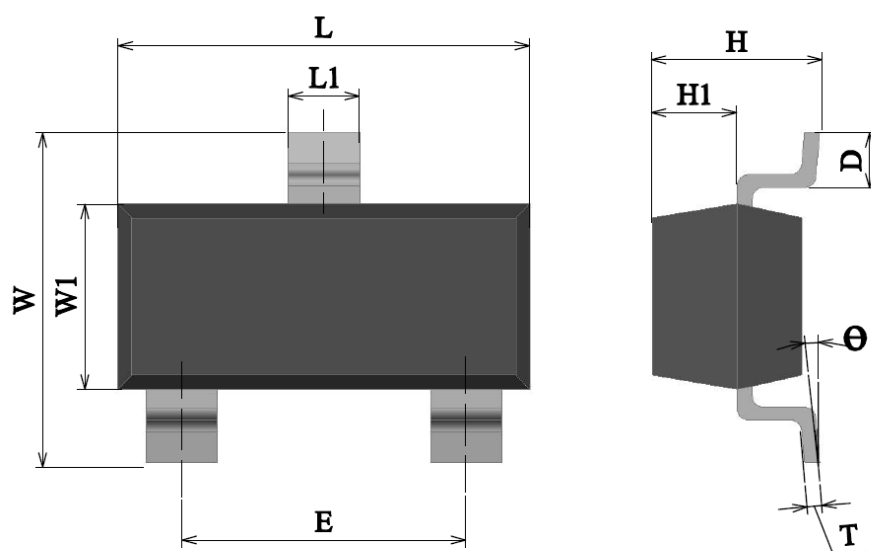


Collector Output capacitance



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SOT-23 DIMENSION



Symbol	Dimensions In Millimeters		Dimensions In Inches	
	Min	Max	Min	Max
L	2.80	3.10	0.110	0.122
L1	0.30	0.50	0.012	0.020
W	2.25	2.54	0.089	0.100
W1	1.20	1.40	0.047	0.055
E	1.80	2.00	0.071	0.079
H	0.90	1.15	0.035	0.045
H1	0.40	0.80	0.016	0.031
D	0.30	0.50	0.012	0.020
T	0.08	0.15	0.003	0.006
θ	0°	8°	0°	8°