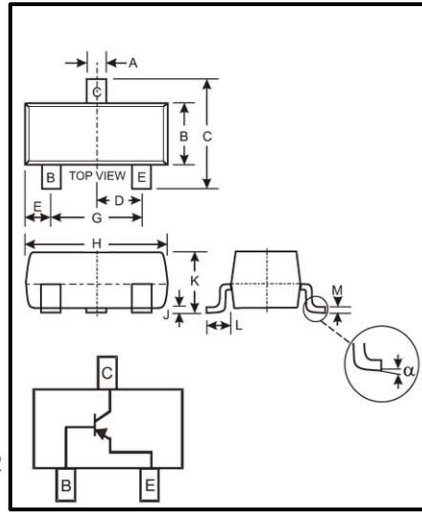


● Features

Epitaxial Planar Die Construction
Complementary NPN Type Available (MMBTA42)
Ideal for Medium Power Amplification and Switching

● Mechanical Data

Case: SOT-23, Molded Plastic
Case material - UL Flammability Rating Classification 94V-0
Moisture sensitivity: Level 1 per J-STD-020A
Terminals: Solderable per MIL-STD-202, Method 208
Terminal Connections: See Diagram
Marking (See Page 2): K3R
Ordering & Date Code Information: See Page 2
Weight: 0.008 grams (approx.)



SOT-23		
Dim	Min	Max
A	0.37	0.51
B	1.20	1.40
C	2.30	2.50
D	0.89	1.03
E	0.45	0.60
G	1.78	2.05
H	2.80	3.00
J	0.013	0.10
K	0.903	1.10
L	0.45	0.61
M	0.085	0.180
α	0°	8°
All Dimensions in mm		

● Maximum Ratings @ $T_A = 25^\circ\text{C}$ unless otherwise specified

Characteristic	Symbol	MMBTA92	Unit
Collector-Base Voltage	V_{CB0}	-300	V
Collector-Emitter Voltage	V_{CE0}	-300	V
Emitter-Base Voltage	V_{EB0}	-5.0	V
Collector Current (Note 1) (Note 3)	I_C	-500	mA
Power Dissipation (Note 1)	P_d	300	mW
Thermal Resistance, Junction to Ambient (Note 1)	$R_{\theta JA}$	417	$^\circ\text{C}/\text{W}$
Operating and Storage and Temperature Range	T_j, T_{STG}	-55 to +150	$^\circ\text{C}$

● Electrical Characteristics @ $T_A = 25^\circ\text{C}$ unless otherwise specified

Characteristic	Symbol	Min	Max	Unit	Test Condition
OFF CHARACTERISTICS (Note 2)					
Collector-Base Breakdown Voltage	$V_{(BR)CBO}$	-300	—	V	$I_C = -100\mu\text{A}, I_E = 0$
Collector-Emitter Breakdown Voltage	$V_{(BR)CEO}$	-300	—	V	$I_C = -1.0\text{mA}, I_B = 0$
Emitter-Base Breakdown Voltage	$V_{(BR)EBO}$	-5.0	—	V	$I_E = -100\mu\text{A}, I_C = 0$
Collector Cutoff Current	I_{CBO}	—	-250	nA	$V_{CB} = -200\text{V}, I_E = 0$
Collector Cutoff Current	I_{EBO}	—	-100	nA	$V_{CE} = -3.0\text{V}, I_C = 0$
ON CHARACTERISTICS (Note 2)					
DC Current Gain	h_{FE}	25 40 25	—	—	$I_C = -1.0\text{mA}, V_{CE} = -10\text{V}$ $I_C = -10\text{mA}, V_{CE} = -10\text{V}$ $I_C = -30\text{mA}, V_{CE} = -10\text{V}$
Collector-Emitter Saturation Voltage	$V_{CE(SAT)}$	—	-0.5	V	$I_C = -20\text{mA}, I_B = -2.0\text{mA}$
Base- Emitter Saturation Voltage	$V_{BE(SAT)}$	—	-0.9	V	$I_C = -20\text{mA}, I_B = -2.0\text{mA}$
SMALL SIGNAL CHARACTERISTICS					
Output Capacitance	C_{cb}	—	6.0	pF	$V_{CB} = -20\text{V}, f = 1.0\text{MHz}, I_E = 0$
Current Gain-Bandwidth Product	f_T	50	—	MHz	$V_{CE} = -20\text{V}, I_C = -10\text{mA}, f = 100\text{MHz}$

- Notes:
- Device mounted on FR-4 PCB, 1 inch x 0.85 inch x 0.062 inch; pad layout as shown on Diodes Inc. suggested pad layout document AP02001, which can be found on our website at <http://www.diodes.com/datasheets/ap02001.pdf>.
 - Short duration test pulse used to minimize self-heating effect.
 - When operated under collector-emitter saturation conditions within the safe operating area defined by the thermal resistance rating ($R_{\theta JA}$), power dissipation rating (P_d) and power derating curve (figure 1).

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