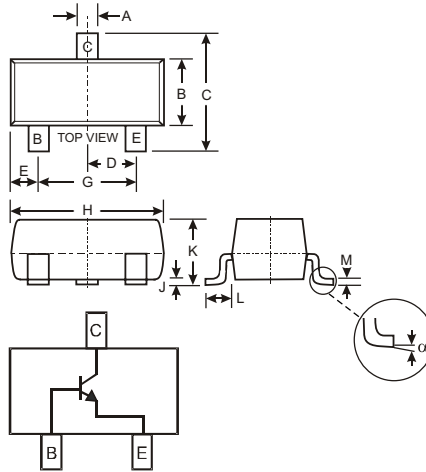


Features

- Epitaxial Planar Die Construction
- Complementary PNP Type Available (MMBTA92)
- Ideal for Medium Power Amplification and Switching

Mechanical Data

- Case: SOT-23, Molded Plastic
- Case Material - UL Flammability Rating 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): K3M
- 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°C unless otherwise specified

Characteristic	Symbol	MMBTA42	Unit
Collector-Base Voltage	V _{CB0}	300	V
Collector-Emitter Voltage	V _{CEO}	300	V
Emitter-Base Voltage	V _{EBO}	6.0	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 _{θJA}	417	K/W
Operating and Storage and Temperature Range	T _J , T _{STG}	-55 to +150	°C

Electrical Characteristics @ T_A = 25°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 = 100μA, I _E = 0
Collector-Emitter Breakdown Voltage	V _{(BR)CEO}	300	—	V	I _C = 1.0mA, I _B = 0
Emitter-Base Breakdown Voltage	V _{(BR)EBO}	6.0	—	V	I _E = 100μA, I _C = 0
Collector Cutoff Current	I _{CB0}	—	100	nA	V _{CB} = 200V, I _E = 0
Collector Cutoff Current	I _{EBO}	—	100	nA	V _{CE} = 6.0V, I _C = 0
ON CHARACTERISTICS (Note 2)					
DC Current Gain	h _{FE}	25 40 40	—	—	I _C = 1.0mA, V _{CE} = 10V I _C = 10mA, V _{CE} = 10V I _C = 30mA, V _{CE} = 10V
Collector-Emitter Saturation Voltage	V _{CE(SAT)}	—	0.5	V	I _C = 20mA, I _B = 2.0mA
Base-Emitter Saturation Voltage	V _{BE(SAT)}	—	0.9	V	I _C = 20mA, I _B = 2.0mA
SMALL SIGNAL CHARACTERISTICS					
Output Capacitance	C _{cb}	—	3.0	pF	V _{CB} = 20V, f = 1.0MHz, I _E = 0
Current Gain-Bandwidth Product	f _T	50	—	MHz	V _{CE} = 20V, I _C = 10mA, f = 100MHz

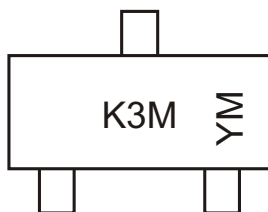
- Notes:
1. Device mounted on FR-4 PCB, 1 inch x 0.85 inch x 0.062 inch; pad layout as shown on Diodes Inc. suggested pad layout document AP02001, which can be found on our website at <http://www.diodes.com/datasheets/ap02001.pdf>.
 2. Short duration test pulse used to minimize self-heating effect.
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

Ordering Information (Note 4)

Device	Packaging	Shipping
MMBTA42-7	SOT-23	3000/Tape & Reel

Notes: 4. For Packaging Details, go to our website at <http://www.diodes.com/datasheets/ap02007.pdf>.

Marking Information

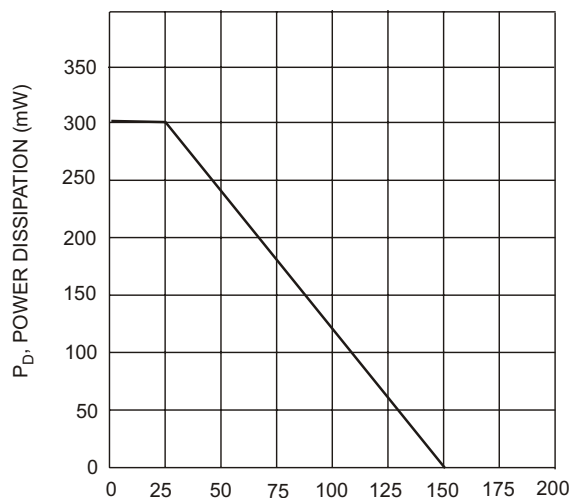


K3M = Product Type Marking Code
 YM = Date Code Marking
 Y = Year ex: N = 2002
 M = Month ex: 9 = September

Date Code Key

Year	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009
Code	J	K	L	M	N	P	R	S	T	U	V	W

Month	Jan	Feb	March	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Code	1	2	3	4	5	6	7	8	9	O	N	D



T_A , AMBIENT TEMPERATURE (°C)

Fig. 1, Max Power Dissipation vs Ambient Temperature