



MMBTA55 / MMBTA56

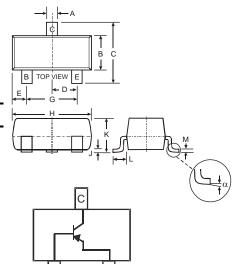
PNP SMALL SIGNAL SURFACE MOUNT TRANSISTOR

Features

- Epitaxial Planar Die Construction
- Complementary NPN Types Available (MMBTA05 / MMBTA06)
- Ideal for Low Power Amplification and Switching
- Lead, Halogen and Antimony Free, RoHS Compliant "Green" Device (Notes 3 and 4)
- Qualified to AEC-Q101 Standards for High Reliability

Mechanical Data

- Case: SOT-23
- Case Material: Molded Plastic. UL Flammability Classification Rating 94V-0
- Moisture Sensitivity: Level 1 per J-STD-020d
- Terminal Connections: See Diagram
- Terminals: Solderable per MIL-STD-202, Method 208
- Lead Free Plating (Matte Tin Finish annealed over Alloy 42 leadframe).
- MMBTA55 Marking (See Page 3): K2H, K2G
- MMBTA56 Marking (See Page 3): K2G
- Ordering Information: See Page 3
- Weight: 0.008 grams (approximate)



	SOT-23										
Dim	Min	Max									
Α	0.37	0.51									
В	1.20	1.40									
С	2.30	2.50									
D	0.89	1.03									
E	0.45	0.60									
G	1.78	2.05									
Н	2.80	3.00									
J	0.013	0.10									
K	0.903	1.10									
L	0.45	0.61									
М	0.085	0.180									
α	0°	8°									
All Din	nensions	in mm									

Maximum Ratings @T_A = 25°C unless otherwise specified

Characteristic	Symbol	MMBTA55	MMBTA56	Unit	
Collector-Base Voltage	V _{CBO}	-60	-80	V	
Collector-Emitter Voltage	V _{CEO}	-60	-80	V	
Emitter-Base Voltage	V _{EBO}	-4	-4.0		
Collector Current - Continuous (Note 1)	Ic	-5	-500		
Power Dissipation (Note 1)	P _d	30	mW		
Thermal Resistance, Junction to Ambient (Note 1)	$R_{ heta JA}$	4	17	°C/W	
Operating and Storage Temperature Range	T_{j}, T_{STG}	-55 to	°C		

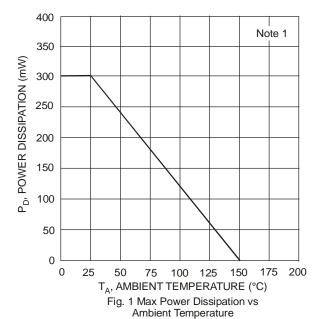
Electrical Characteristics @T_A = 25°C unless otherwise specified

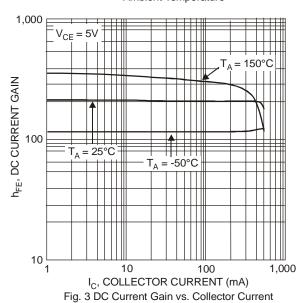
Characteristic		Symbol	Min	Max	Unit	Test Condition
OFF CHARACTERISTICS (Note 2)		-				
Collector-Base Breakdown Voltage MMBTA55 MMBTA56		V _{(BR)CBO}	-60 -80	_	V	I _C = -100μA, I _E = 0
Collector-Emitter Breakdown Voltage	MMBTA55 MMBTA56	V _{(BR)CEO}	-60 -80	_	V	$I_C = -1.0 \text{mA}, I_B = 0$
Emitter-Base Breakdown Voltage		$V_{(BR)EBO}$	-4.0	_	V	$I_E = -100 \mu A, I_C = 0$
Collector Cutoff Current	MMBTA55 MMBTA56	I _{CBO}	_	-100	nA	$V_{CB} = -60V, I_{E} = 0$ $V_{CB} = -80V, I_{E} = 0$
Collector Cutoff Current	MMBTA55 MMBTA56	I _{CEX}	_	-100	nA	$V_{CE} = -60V, I_{BO} = 0V$ $V_{CE} = -80V, I_{BO} = 0V$
ON CHARACTERISTICS (Note 2)	•		•	•	•	
DC Current Gain		h _{FE}	100	_	_	$I_C = -10 \text{mA}, V_{CE} = -1.0 \text{V}$ $I_C = -100 \text{mA}, V_{CE} = -1.0 \text{V}$
Collector-Emitter Saturation Voltage		V _{CE(SAT)}	_	-0.25	V	$I_C = -100 \text{mA}, I_B = -10 \text{mA}$
Base-Emitter Saturation Voltage		V _{BE(SAT)}	_	-1.2	V	$I_C = -100 \text{mA}, V_{CE} = -1.0 \text{V}$
SMALL SIGNAL CHARACTERISTICS						
Current Gain-Bandwidth Product		f⊤	50	_	MHz	$V_{CE} = -1.0V, I_{C} = -100mA,$ f = 100MHz

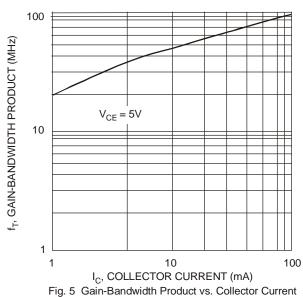
Notes: 1. Device mounted on FR-4 PCB, 1 inch x 0.85 inch x 0.062 inch; pad layout as shown on Diodes Inc. suggested pad layout document AP02001, which can be found on our website at http://www.diodes.com/datasheets/ap02001.pdf.

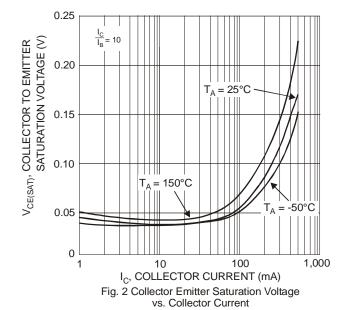
- 2. Short duration pulse test used to minimize self-heating effect.
- 3. No purposefully added lead. Halogen and Antimony Free.
- Product manufactured with Data Code V9 (week 33, 2008) and newer are built with Green Molding Compound. Product manufactured prior to Date Code V9 are built with Non-Green Molding Compound and may contain Halogens or Sb₂O₃ Fire Retardants.











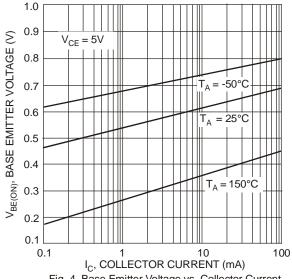


Fig. 4 Base Emitter Voltage vs. Collector Current

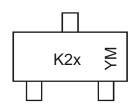


Ordering Information (Note 5)

Device	Packaging	Shipping
MMBTA55-7-F	SOT-23	3000/Tape & Reel
MMBTA56-7-F	SOT-23	3000/Tape & Reel

Notes: 5. For packaging details, go to our website at http://www.diodes.com/datasheets/ap02007.pdf.

Marking Information



K2x = Product Type Marking Code, ex: K2H = MMBTA55

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

Date Code Key

	Date Code Hoj															
ſ	Year	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012
ĺ	Code	J	K	L	М	Ν	Р	R	S	Т	U	V	W	Х	Υ	Z

Month	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Code	1	2	3	4	5	6	7	8	9	0	N	D

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