



MMBTA55 / MMBTA56

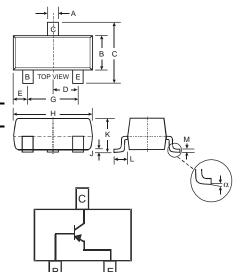
PNP SMALL SIGNAL SURFACE MOUNT TRANSISTOR

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

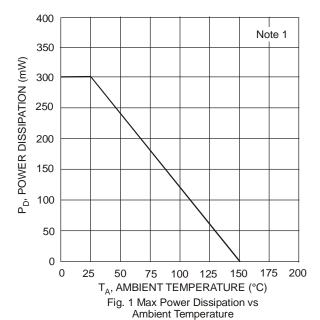
Characteristic	Symbol	MMBTA55	MMBTA56	Unit		
Collector-Base Voltage	V_{CBO}	-60	-80	V		
Collector-Emitter Voltage	V _{CEO}	-60	-80	V		
Emitter-Base Voltage	V _{EBO}	-4	-4.0			
Collector Current - Continuous (Note 1)	Ic	-5	mA			
Power Dissipation (Note 1)	P _d	300		mW		
Thermal Resistance, Junction to Ambient (Note 1)	$R_{ hetaJA}$	4′	17	°C/W		
Operating and Storage Temperature Range	T _j , T _{STG}	-55 to	+150	°C		

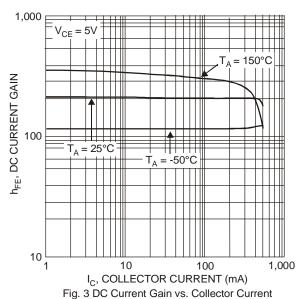
Electrical Characteristics @T_A = 25°C unless otherwise specified

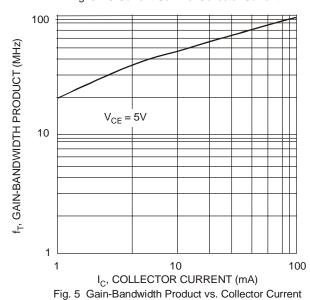
Characteristic		Symbol	Min	Max	Unit	Test Condition
OFF CHARACTERISTICS (Note 2)					_	
Collector-Base Breakdown Voltage	MMBTA55 MMBTA56	V _{(BR)CBO}	-60 -80	_	V	$I_C = -100 \mu A, I_E = 0$
Collector-Emitter Breakdown Voltage	MMBTA55 MMBTA56	V _{(BR)CEO}	-60 -80	_	V	$I_C = -1.0 \text{mA}, I_B = 0$
Emitter-Base 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	_	_	$I_{C} = -10$ mA, $V_{CE} = -1.0$ V $I_{C} = -100$ mA, $V_{CE} = -1.0$ 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

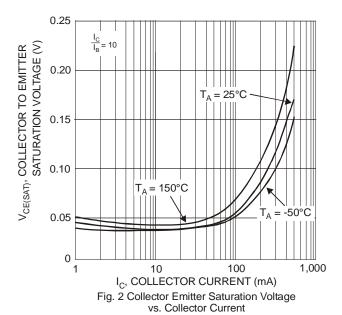
- Notes: 1. Device mounted on FR-4 PCB, 1 inch x 0.85 inch x 0.062 inch; pad layout as shown on Diodes Inc. suggested pad layout document AP02001, which can be found on our website at http://www.diodes.com/datasheets/ap02001.pdf.
 - 2. Short duration pulse test used to minimize self-heating effect.
 - 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.











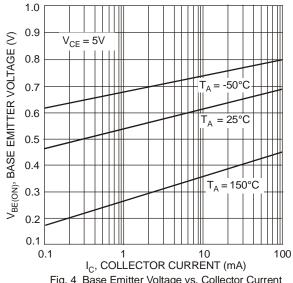


Fig. 4 Base Emitter Voltage vs. Collector Current

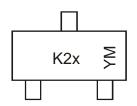


Ordering Information (Note 5)

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 = 2002 M = 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

IMPORTANT NOTICE

Diodes Incorporated and its subsidiaries reserve the right to make modifications, enhancements, improvements, corrections or other changes without further notice to any product herein. Diodes Incorporated does not assume any liability arising out of the application or use of any product described herein; neither does it convey any license under its patent rights, nor the rights of others. The user of products in such applications shall assume all risks of such use and will agree to hold Diodes Incorporated and all the companies whose products are represented on our website, harmless against all damages.

LIFE SUPPORT

Diodes Incorporated products are not authorized for use as critical components in life support devices or systems without the expressed written approval of the President of Diodes Incorporated.