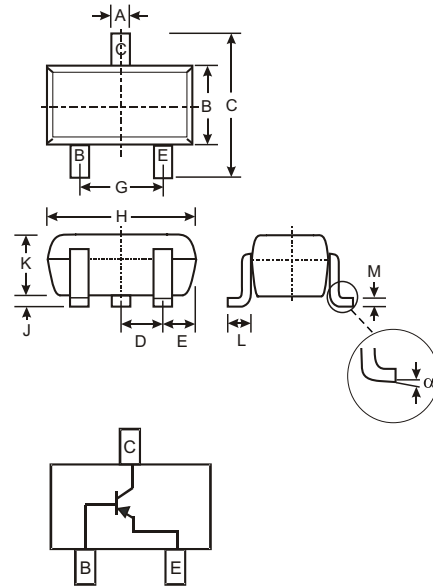


### Features

- Epitaxial Planar Die Construction
- Complementary NPN Type Available (MMSTA05/MMSTA06)
- Ideal for Medium Power Amplification and Switching
- Ultra-Small Surface Mount Package

### Mechanical Data

- Case: SOT-323, 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
- MMSTA55 Marking K2H, K2G (See Page 2)
- MMSTA56 Marking K2G (See Page 2)
- Ordering & Date Code Information: See Page 2
- Weight: 0.006 grams (approx.)



SOT-323		
Dim	Min	Max
A	0.25	0.40
B	1.15	1.35
C	2.00	2.20
D	0.65 Nominal	
E	0.30	0.40
G	1.20	1.40
H	1.80	2.20
J	0.0	0.10
K	0.90	1.00
L	0.25	0.40
M	0.10	0.18
$\alpha$	0°	8°
All Dimensions in mm		

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

Characteristic	Symbol	MMSTA55	MMSTA56	Unit
Collector-Base Voltage	$V_{CBO}$	-60	-80	V
Collector-Emitter Voltage	$V_{CEO}$	-60	-80	V
Emitter-Base Voltage	$V_{EBO}$	-4.0		V
Collector Current - Continuous (Note 1)	$I_C$	-500		mA
Power Dissipation (Note 1)	$P_d$	200		mW
Thermal Resistance, Junction to Ambient (Note 1)	$R_{\theta JA}$	625		K/W
Operating and Storage and Temperature Range	$T_j, T_{STG}$	-55 to +150		$^\circ\text{C}$

Note: 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>.

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

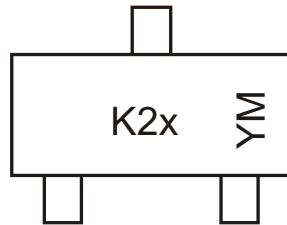
Characteristic		Symbol	Min	Max	Unit	Test Condition
<b>OFF CHARACTERISTICS (Note 2)</b>						
Collector-Base Breakdown Voltage	MMSTA55 MMSTA56	$V_{(BR)CBO}$	-60 -80	—	V	$I_C = -100\mu\text{A}, I_E = 0$
Collector-Emitter Breakdown Voltage	MMSTA55 MMSTA56	$V_{(BR)CEO}$	-60 -80	—	V	$I_C = -1.0\text{mA}, I_B = 0$
Emitter-Base Breakdown Voltage		$V_{(BR)EBO}$	-4.0	—	V	$I_E = -100\mu\text{A}, I_C = 0$
Collector Cutoff Current	MMSTA55 MMSTA56	$I_{CBO}$	—	-100	nA	$V_{CB} = -60\text{V}, I_E = 0$ $V_{CB} = -80\text{V}, I_E = 0$
Collector Cutoff Current	MMSTA55 MMSTA56	$I_{CEX}$	—	-100	nA	$V_{CE} = -60\text{V}, I_{BO} = 0\text{V}$ $V_{CE} = -80\text{V}, I_{BO} = 0\text{V}$
<b>ON CHARACTERISTICS (Note 2)</b>						
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	$I_C = -100\text{mA}, V_{CE} = -1.0\text{V}$
<b>SMALL SIGNAL CHARACTERISTICS</b>						
Current Gain-Bandwidth Product		$f_T$	50	—	MHz	$V_{CE} = -1.0\text{V}, I_C = -100\text{mA},$ $f = 100\text{MHz}$

## Ordering Information (Note 3)

Device	Packaging	Shipping
MMSTA55-7 MMSTA56-7	SOT-323	3000/Tape & Reel

- Notes: 2. Short duration test pulse used to minimize self-heating effect.  
3. For Packaging Details, go to our website at <http://www.diodes.com/datasheets/ap02007.pdf>.

## Marking Information



K2x = Product Type Marking Code, e.g. K2H = MMSTA55  
 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