



MMSTA92

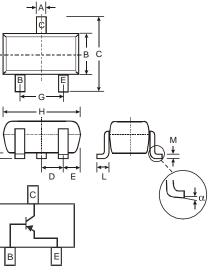
PNP SMALL SIGNAL SURFACE MOUNT TRANSISTOR

Features

- Epitaxial Planar Die Construction
- Complementary NPN Type Available (MMSTA42)
- Ideal for Low Power Amplification and Switching
- Lead Free/RoHS Compliant (Note 2)
- "Green" Device (Notes 3 and 4)

Mechanical Data

- Case: SOT-323
- Case Material: Molded Plastic, "Green" Molding Compound, Note 4. UL Flammability Classification Rating 94V-0
- Moisture Sensitivity: Level 1 per J-STD-020C
- Terminal Connections: See Diagram
- Terminals: Solderable per MIL-STD-202, Method 208
- Lead Free Plating (Matte Tin Finish annealed over Alloy 42 leadframe).
- Marking Information: See Page 3
- Ordering Information: See Page 3
- Weight: 0.006 grams (approximate)



SOT-323									
Dim	Min	Max							
Α	0.25	0.40							
В	1.15	1.35							
С	2.00	2.20							
D	0.65 N	ominal							
Е	0.30	0.40							
G	1.20	1.40 2.20							
Н	1.80								
J	J 0.0 0.10								
Κ	0.90	1.00							
L	0.25	0.40							
М	0.10	0.18							
α	0°	8°							
All Din	All Dimensions in mm								

Maximum Ratings @T_A = 25°C unless otherwise specified

Characteristic	Symbol	Value	Unit		
Collector-Base Voltage	V _{CBO}	-300	V		
Collector-Emitter Voltage	V _{CEO}	-300	V		
Emitter-Base Voltage	V _{EBO}	-5.0	V		
Collector Current (Note 1)	Ic	-100	mA		
Power Dissipation (Note 1)	Pd	200	mW		
Thermal Resistance, Junction to Ambient (Note 1)	R _{0JA}	625	°C/W		
Operating and Storage Temperature Range	Tj, T _{STG}	-55 to +150	٥C		

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

Characteristic	Symbol	Min	Max	Unit	Test Condition
OFF CHARACTERISTICS (Note 5)		,			<u>-</u>
Collector-Base Breakdown Voltage	V _{(BR)CBO}	-300	_	V	$I_{\rm C} = -100 \mu A, I_{\rm E} = 0$
Collector-Emitter Breakdown Voltage	V _{(BR)CEO}	-300		V	$I_{\rm C} = -1.0 {\rm mA}, I_{\rm B} = 0$
Emitter-Base Breakdown Voltage	V _{(BR)EBO}	-5.0		V	$I_{E} = -100 \mu A, I_{C} = 0$
Collector Cutoff Current	I _{CBO}	—	-250	nA	$V_{CB} = -200V, I_E = 0$
Collector Cutoff Current	I _{EBO}	—	-100	nA	$V_{CE} = -3.0V, I_{C} = 0$
ON CHARACTERISTICS (Note 5)					· ·
DC Current Gain	h _{FE}	25 40 25	_	_	$I_{C} = -1.0mA, V_{CE} = -10V$ $I_{C} = -10mA, V_{CE} = -10V$ $I_{C} = -30mA, V_{CE} = -10V$
Collector-Emitter Saturation Voltage	V _{CE(SAT)}		-0.5	V	$I_{\rm C} = -20$ mA, $I_{\rm B} = -2.0$ mA
Base-Emitter Saturation Voltage	V _{BE(SAT)}	_	-0.9	V	$I_{\rm C} = -20$ mA, $I_{\rm B} = -2.0$ mA
SMALL SIGNAL CHARACTERISTICS					↓ [−]
Output Capacitance	C _{cb}	_	6.0	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.

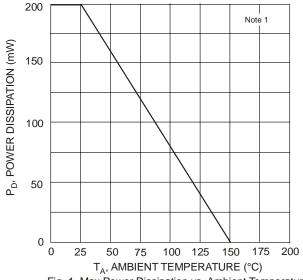
2. No purposefully added lead.

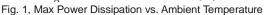
3. Diodes Inc.'s "Green" policy can be found on our website at http://www.diodes.com/products/lead_free/index.php.

 Product manufactured with Date Code 0627 (week 27, 2006) and newer are built with Green Molding Compound. Product manufactured prior to Date Code 0627 are built with Non-Green Molding Compound and may contain Halogens or Sb2O3 Fire Retardants.

5. Short duration pulse test used to minimize self-heating effect.







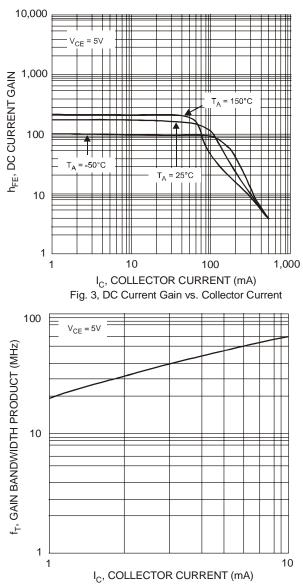
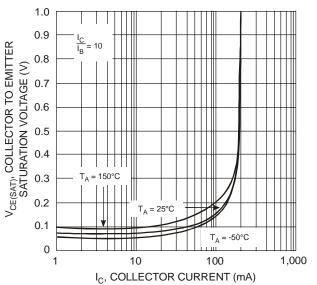
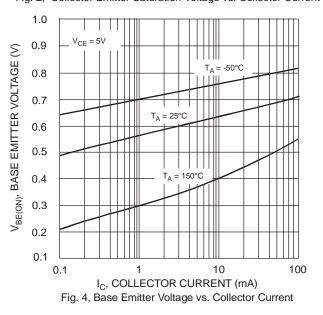


Fig. 5, Gain Bandwidth Product vs. Collector Current







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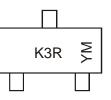


Ordering Information (Note 4 and 6)

Device	Packaging	Shipping				
MMSTA92-7-F	SOT-323	3000/Tape & Reel				

Notes: 6. For packaging details, go to our website at http://www.diodes.com/datasheets/ap02007.pdf.

Marking Information



 $\begin{array}{l} \mathsf{K3R} = \mathsf{Product Type Marking Code} \\ \mathsf{YM} = \mathsf{Date Code Marking} \\ \mathsf{Y} = \mathsf{Year ex: N} = 2002 \\ \mathsf{M} = \mathsf{Month ex: 9} = \mathsf{September} \end{array}$

Date Code Key

Year	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012
Code	J	К	L	М	N	Р	R	S	Т	U	V	W	Х	Y	Z
Month	Jan	Fe	b I	Mar	Apr	May	Ju	n	Jul	Aug	Sep	Oc	t N	lov	Dec
Code	1	2		3	4	5	6		7	8	9	0		Ν	D

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