MMSTA56-7-F Datasheet

https://www.DiGi-Electronics.com

DiGi Electronics Part Number	MMSTA56-7-F-DG
Manufacturer	Diodes Incorporated
Manufacturer Product Number	MMSTA56-7-F
Description	TRANS PNP 80V 0.5A SOT323
Detailed Description	Bipolar (BJT) Transistor PNP 80 V 500 mA 50MHz 200 mW Surface Mount SOT-323

Tel: +00 852-30501935

RFQ Email: Info@DiGi-Electronics.com

Purchase and inquiry

Manufacturer Product Number:	Manufacturer:
MMSTA56-7-F	Diodes Incorporated
Series:	Product Status:
-	Active
Transistor Type:	Current - Collector (Ic) (Max):
PNP	500 mA
Voltage - Collector Emitter Breakdown (Max):	Vce Saturation (Max) @ Ib, Ic:
80 V	250mV @ 10mA, 100mA
Current - Collector Cutoff (Max):	DC Current Gain (hFE) (Min) @ Ic, Vce:
100nA (ICBO)	100 @ 100mA, 1V
Power - Max:	Frequency - Transition:
200 mW	50MHz
Operating Temperature:	Mounting Type:
-55°C ~ 150°C (TJ)	Surface Mount
Package / Case:	Supplier Device Package:
SC-70, SOT-323	SOT-323
Base Product Number:	
MMSTA56	

Environmental & Export classification

RoHS Status:	Moisture Sensitivity Level (MSL):
ROHS3 Compliant	1 (Unlimited)
REACH Status:	ECCN:
REACH Unaffected	EAR99
HTSUS:	
8541.21.0095	

MMSTA55/MMSTA56

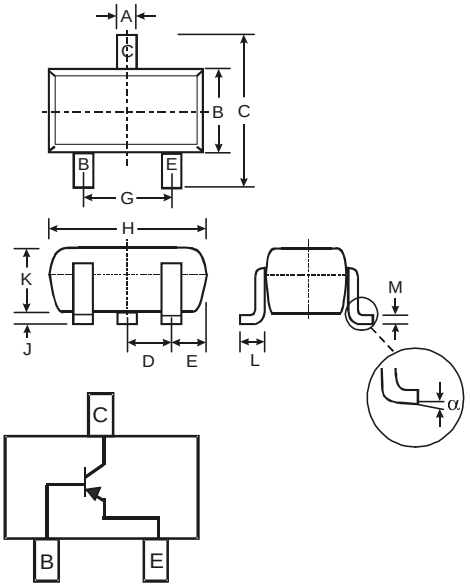
PNP SMALL SIGNAL SURFACE MOUNT TRANSISTOR

Features

- Epitaxial Planar Die Construction
- Complementary NPN Type Available (MMSTA05/MMSTA06)
- Ideal for Low Power Amplification and Switching
- Ultra-Small Surface Mount Package
- **Lead Free/RoHS Compliant (Note 2)**
- **"Green" Device (Note 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).
- MMSTA55 Marking K2H, K2G (See Page 3)
- MMSTA56 Marking K2G (See Page 3)
- Ordering & Date Code Information: See Page 3
- Weight: 0.006 grams (approximate)



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
α	0°	8°
All Dimensions in mm		

Maximum Ratings @T_A = 25°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		°C/W
Operating and Storage Temperature Range	T_j, T_{STG}	-55 to +150		°C

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.
4. 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.

Electrical Characteristics @T_A = 25°C unless otherwise specified

Characteristic		Symbol	Min	Max	Unit	Test Condition
OFF CHARACTERISTICS (Note 5)						
Collector-Base Breakdown Voltage	MMSTA55 MMSTA56	$V_{(BR)CBO}$	-60 -80	—	V	I_C = -100μA, I_E = 0
Collector-Emitter Breakdown Voltage	MMSTA55 MMSTA56	$V_{(BR)CEO}$	-60 -80	—	V	I_C = -1.0mA, I_B = 0
Emitter-Base Breakdown Voltage		$V_{(BR)EBO}$	-4.0	—	V	I_E = -100μA, I_C = 0
Collector Cutoff Current	MMSTA55 MMSTA56	I_{CBO}	—	-100	nA	V_{CB} = -60V, I_E = 0 V_{CB} = -80V, I_E = 0
Collector Cutoff Current	MMSTA55 MMSTA56	I_{CEX}	—	-100	nA	V_{CE} = -60V, I_{BO} = 0V V_{CE} = -80V, I_{BO} = 0V
ON CHARACTERISTICS (Note 5)						
DC Current Gain		h_{FE}	100	—	—	I_C = -10mA, V_{CE} = -1.0V I_C = -100mA, V_{CE} = -1.0V
Collector-Emitter Saturation Voltage		$V_{CE(SAT)}$	—	-0.25	V	I_C = -100mA, I_B = -10mA
Base-Emitter Saturation Voltage		$V_{BE(SAT)}$	—	-1.2	V	I_C = -100mA, V_{CE} = -1.0V
SMALL SIGNAL CHARACTERISTICS						
Current Gain-Bandwidth Product		f_T	50	—	MHz	V_{CE} = -1.0V, I_C = -100mA, f = 100MHz

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

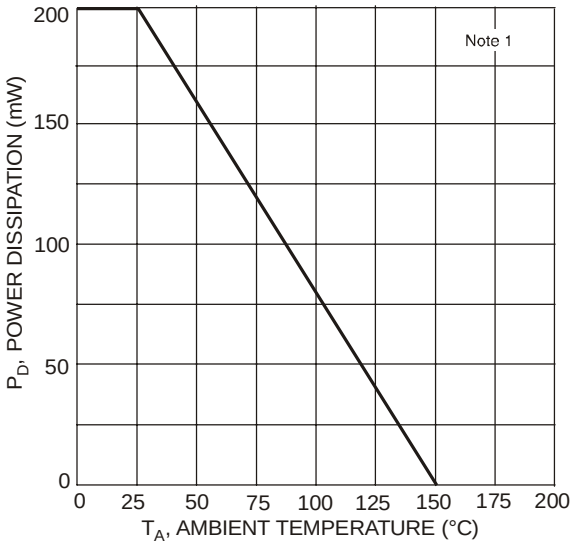


Fig. 1, Max Power Dissipation vs. Ambient Temperature

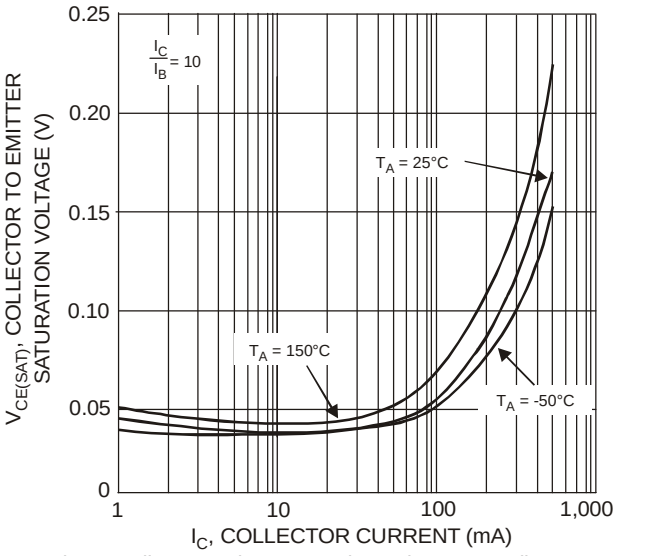


Fig. 2, Collector Emitter Saturation Voltage vs. Collector Current

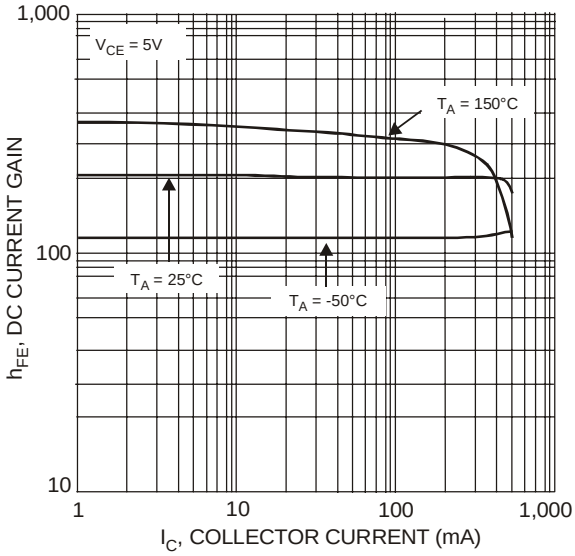


Fig. 3, DC Current Gain vs. Collector Current

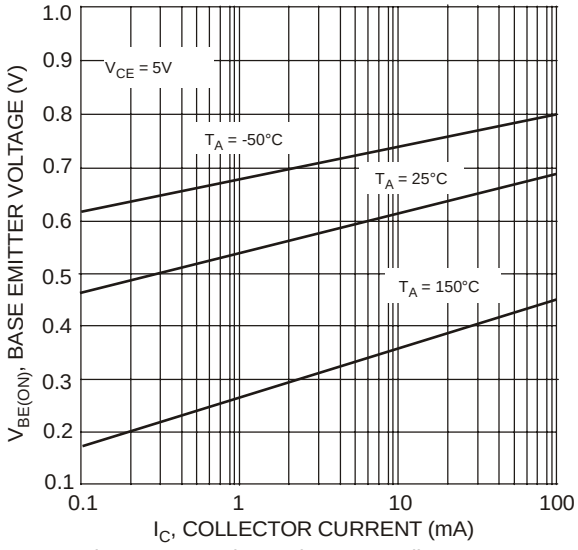


Fig. 4 Base Emitter Voltage vs. Collector Current

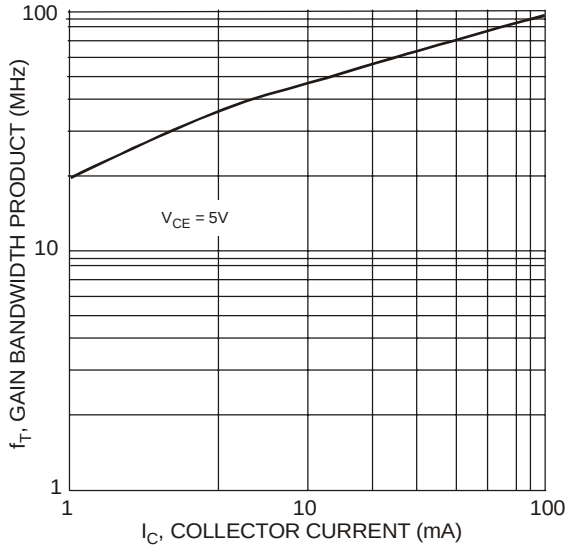


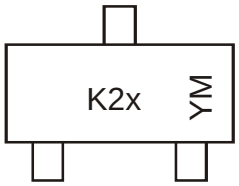
Fig. 5 Gain Bandwidth Product vs. Collector Current

Ordering Information (Notes 4 and 6)

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



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	2010	2011	2012
Code	J	K	L	M	N	P	R	S	T	U	V	W	X	Y	Z

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

OUR CERTIFICATE

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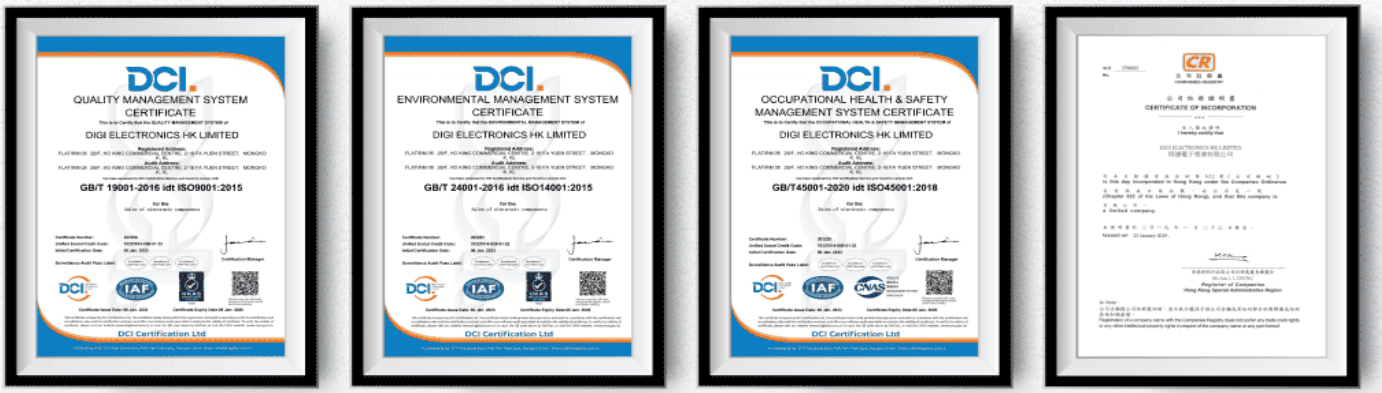

Tel: +00 852-30501935

RFQ Email: Info@DiGi-Electronics.com

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