Features

- Epitaxial Planar Die Construction
- Ideal for Medium Power Amplification and Switching
- Halogen Free. "Green" Device (Note 1)
- Moisture Sensitivity Level 1
- Epoxy Meets UL 94 V-0 Flammability Rating
- Lead Free Finish/RoHS Compliant ("P" Suffix Designates RoHS Compliant. See Ordering Information)

NPN Small Signal General Purpose Amplifier Transistors

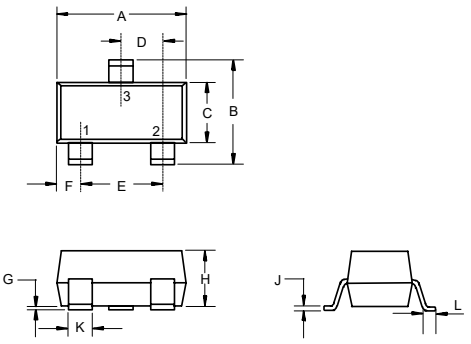
Maximum Ratings @ 25°C Unless Otherwise Specified

- Operating Junction Temperature Range: -55℃ to +150℃
- Storage Temperature Range: -55℃ to +150℃
- Thermal Resistance: 417℃/W Junction to Ambient

Parameter		Symbol	Rating	Unit
Collector-Base Voltage	MMBTA05	V_{CBO}	60	V
	MMBTA06		80	
Collector-Emitter Voltage	MMBTA05	V_{CEO}	60	V
	MMBTA06		80	
Emitter-Base Voltage		V_{EBO}	4	V
Continuous Collector Current		I_C	500	mA
Power Dissipation		P_D	300	mW

Note: 1. Halogen free "Green" products are defined as those which contain <900ppm bromine, <900ppm chlorine (<1500ppm total Br + Cl) and <1000ppm antimony compounds.

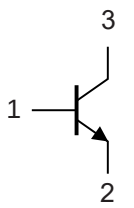
SOT-23



DIMENSIONS					
DIM	INCHES		MM		NOTE
	MIN	MAX	MIN	MAX	
A	0.110	0.120	2.80	3.04	
B	0.083	0.104	2.10	2.64	
C	0.047	0.055	1.20	1.40	
D	0.034	0.041	0.85	1.05	
E	0.067	0.083	1.70	2.10	
F	0.018	0.024	0.45	0.60	
G	0.0004	0.006	0.01	0.15	
H	0.035	0.043	0.90	1.10	
J	0.003	0.007	0.08	0.18	
K	0.012	0.020	0.30	0.51	
L	0.007	0.020	0.20	0.50	

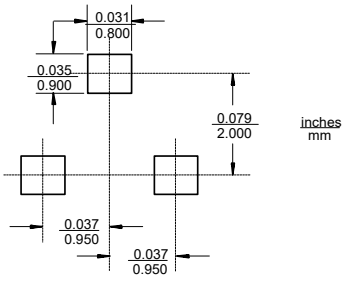
Marking:
MMBTA05: 1H
MMBTA06: 1GM

Internal Structure



1.BASE
2.EMITTER
3.COLLECTOR

Suggested Solder Pad Layout



Electrical Characteristics @ T_A=25°C Unless Otherwise Specified

Parameter		Symbol	Min	Typ	Max	Units	Conditions
Collector-Base Breakdown Voltage	MMBTA05	$V_{(BR)CBO}$	60			V	I_C=100μA, I_E=0
	MMBTA06		80			V	
Collector-Emitter Breakdown Voltage	MMBTA05	$V_{(BR)CEO}$	60			V	I_C=1mA, I_B=0
	MMBTA06		80				
Emitter-Base Breakdown Voltage		$V_{(BR)EBO}$	4			V	I_E=100μA, I_C=0
Collector Cutoff Current	MMBTA05	I_{CBO}			0.1	μA	V_{CB}=60V, I_E=0
	MMBTA06				0.1	μA	V_{CB}=80V, I_E=0
Collector Cutoff Current		I_{CEO}			1	μA	V_{CE}=60V, I_B=0
Emitter Cutoff Current		I_{EBO}			0.1	mA	V_{EB}=3V, I_C=0
DC Current Gain		$h_{FE(1)}$	100		400		V_{CE}=1V, I_C=10mA
		$h_{FE(2)}$	100				V_{CE}=1V, I_C=100mA
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, I_B=10mA
Transition Frequency		f_T	100			MHz	V_{CE}=2V, I_C=10mA, f=100MHz

Curve Characteristics

Fig. 1 - Static Characteristics

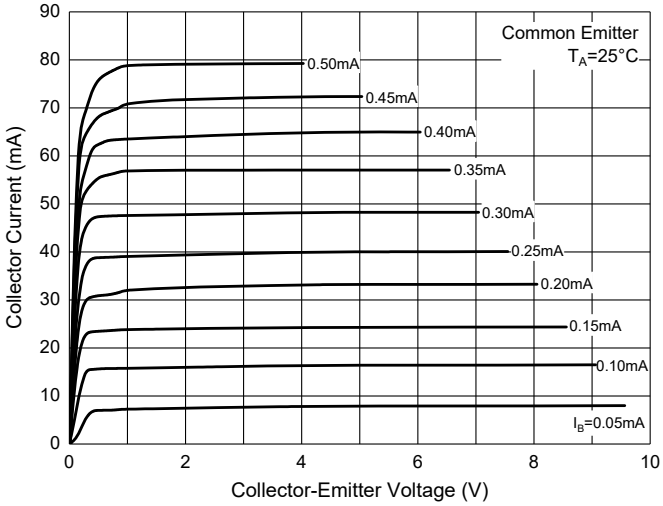


Fig. 2 - DC Current Gain Characteristics

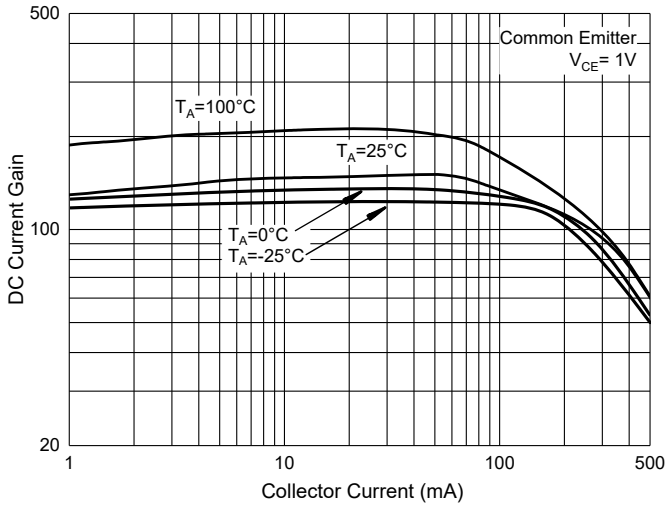


Fig. 3 - Base-Emitter Saturation Voltage Characteristics

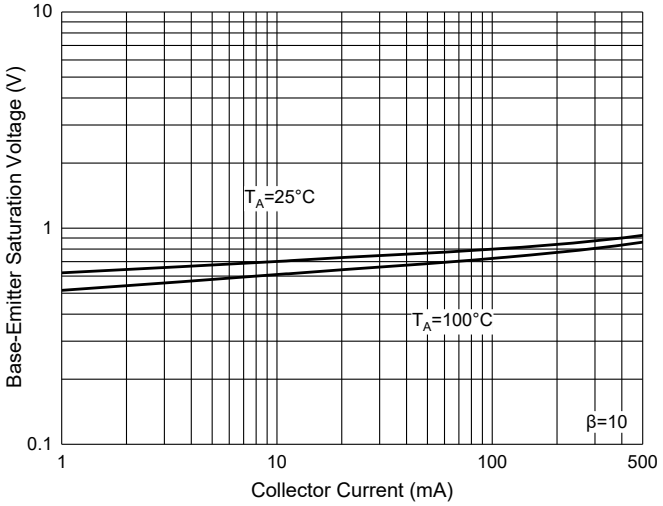


Fig. 4 - Collector-Emitter Saturation Voltage Characteristics

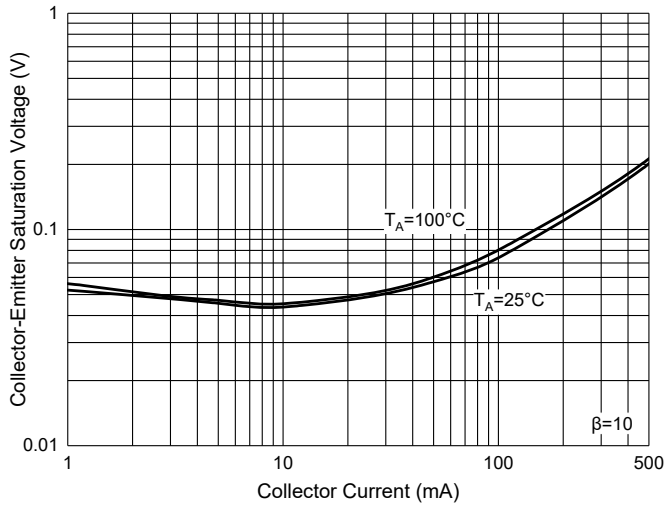


Fig. 5 - Base-Emitter Voltage Characteristics

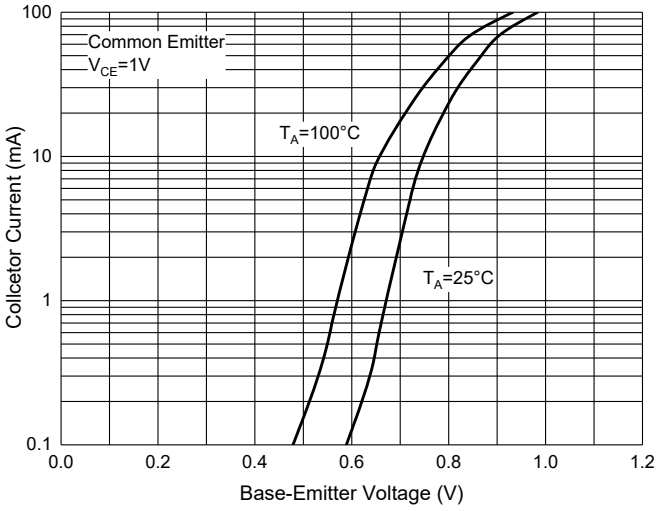


Fig. 6 - Collector Power Derating Curve