



DESCRIPTION

The MBTA05L~MBTA06L are available in SOT-23 package.

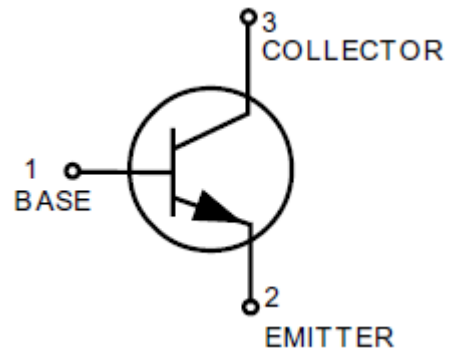
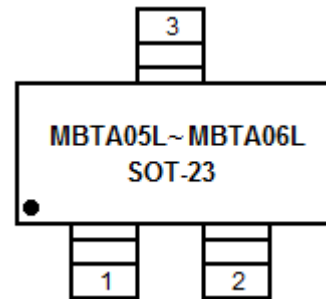
FEATURES

- Available in SOT-23 package

ORDERING INFORMATION

Package Type	Part Number
SOT-23	MBTA05L
	MBTA06L
Package	3,000pcs/Reel
AiT provides all RoHS Compliant Products	

PIN DESCRIPTION





ABSOLUTE MAXIMUM RATINGS

Parameter	Value		Unit
	MBTA05L	MBTA06L	
V _{CEO} , Collector-Emitter Voltage	60	80	Vdc
V _{CBO} , Collector-Base Voltage	60	80	Vdc
V _{EBO} , Emitter-Base Voltage	4.0		Vdc
I _C , Collector Current -Continuous	500		mAdc

Stresses above may cause permanent damage to the device. These are stress ratings only and functional operation of the device at these or any other conditions beyond those indicated in the Electrical Characteristics are not implied. Exposure to absolute maximum rating conditions for extended periods may affect device reliability.

THERMAL CHARACTERISTICS

Parameter	Symbol	Max	Unit
Total Device Dissipation FR-5 Board, ^{NOTE1} T _A = 25°C Derate above 25°C	P _D	225 1.8	mW mW/°C
Thermal Resistance, Junction to Ambient	R _{θJA}	556	°C/W
Total Device Dissipation Alumina Substrate, ^{NOTE2} T _A = 25°C Derate above 25°C	P _D	300 2.4	mW mW/°C
Thermal Resistance, Junction to Ambient	R _{θJA}	417	°C/W
Junction and Storage Temperature	T _J , T _{stg}	-55 to +150	°C

NOTE1: FR-5 = 1.0 x 0.75 x 0.062 in.

NOTE2: Alumina = 0.4 x 0.3 x 0.024 in. 99.5% alumina.



ELECTRICAL CHARACTERISTICS

T_A = 25°C unless otherwise noted

Parameter	Symbol	Characteristic	Min	Max	Unit	
OFF CHARACTERISTICS						
Collector-Emitter Breakdown Voltage ^{NOTE3}	V _{(BR)CEO}	I _C = 1.0mA, I _B = 0	MBTA05L	60	-	Vdc
			MBTA06L	80		
Emitter-Base Breakdown Voltage	V _{(BR)EBO}	I _E = 100μA, I _C = 0	4.0	-	Vdc	
Collector Cutoff Current	I _{CES}	V _{CE} = 60Vdc, I _B = 0	-	0.1	μAdc	
Emitter Cutoff Current	I _{CBO}	V _{CB} = 60Vdc, I _E = 0	MBTA05L	-	0.1	μAdc
		V _{CB} = 80Vdc, I _E = 0	MBTA06L			
ON CHARACTERISTICS						
DC Current Gain	h _{FE}	I _C = 10mA, V _{CE} = 1.0Vdc	100	-	-	
		I _C = 100mA, V _{CE} = 1.0Vdc				
Collector-Emitter Saturation Voltage	V _{CE(sat)}	I _C = 100mA, I _B = 10mA	-	0.25	Vdc	
Base-Emitter On Voltage	V _{BE(sat)}	I _C = 100mA, V _{CE} = 1.0Vdc	-	1.2	Vdc	
SMALL-SIGNAL CHARACTERISTICS						
Current-Gain-Bandwidth Product ^{NOTE4}	f _T	V _{CE} = 2.0V, I _C = 10mA, f = 100MHz	100	-	MHz	

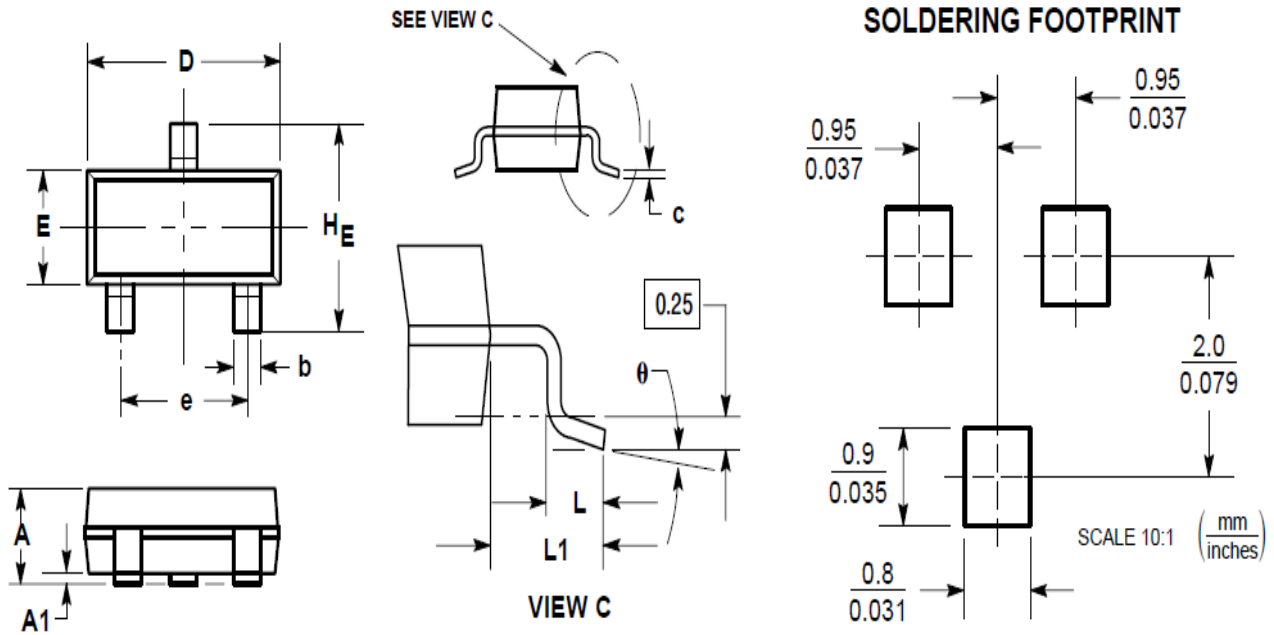
NOTE3: Pulse Test: Pulse Width < 300μs, Duty Cycle < 2.0%.

NOTE4: f_T is defined as the frequency at which |h_{fe}| extrapolates to unity.



PACKAGE INFORMATION

Dimension in SOT-23 Package (Unit: mm)



DIM	INCHES		MILLIMETERS	
	MIN	MAX	MIN	MAX
A	0.035	0.044	0.89	1.11
A1	0.001	0.004	0.01	0.10
b	0.015	0.020	0.37	0.50
c	0.003	0.007	0.09	0.18
D	0.110	0.120	2.80	3.04
E	0.047	0.055	1.20	1.40
e	0.070	0.081	1.78	2.04
L	0.004	0.012	0.10	0.30
L1	0.014	0.029	0.35	0.69
H _E	0.083	0.104	2.10	2.64



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