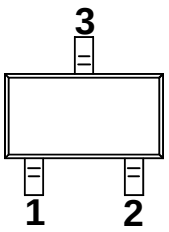
Driver Transistors

PNP Silicon

SOT–23 (TO–236AB)

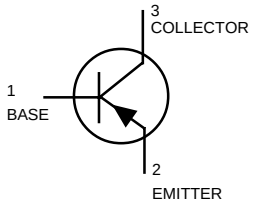


MAXIMUM RATINGS

Rating	Symbol	Value MMBTA55	Value MMBTA56	Unit
Collector–Emitter Voltage	V_{CEO}	–60	–80	Vdc
Collector–Base Voltage	V_{CBO}	–60	–80	Vdc
Emitter–Base Voltage	V_{EBO}	–4.0		Vdc
Collector Current — Continuous	I_C	–500		mAdc

THERMAL CHARACTERISTICS

Characteristic	Symbol	Max	Unit
Total Device Dissipation FR– 5 Board, (1) T_A = 25°C	P_D	225	mW
Derate above 25°C		1.8	mW/°C
Thermal Resistance, Junction to Ambient	$R_{\theta JA}$	556	°C/W
Total Device Dissipation Alumina Substrate, (2) T_A = 25°C	P_D	300	mW
Derate above 25°C		2.4	mW/°C
Thermal Resistance, Junction to Ambient	$R_{\theta JA}$	417	°C/W
Junction and Storage Temperature	T_J , T_{stg}	–55 to +150	°C



DEVICE MARKING

MMBTA55 = 2H; MMBTA56 = 2GM

ELECTRICAL CHARACTERISTICS (T_A = 25°C unless otherwise noted.)

Characteristic		Symbol	Min	Max	Unit
OFF CHARACTERISTICS					
Collector–Emitter Breakdown Voltage (3)		$V_{(BR)CEO}$			Vdc
(I_C = –1.0 mAdc, I_B = 0)	MMBTA55		–60	—	
	MMBTA56		–80	—	
Emitter–Base Breakdown Voltage (I_E = –100 µAdc, I_C = 0)		$V_{(BR)EBO}$	–4.0	—	Vdc
Collector Cutoff Current (V_{CE} = –60Vdc, I_B = 0)		I_{CEO}	—	–0.1	µAdc
Collector Cutoff Current		I_{CBO}			µAdc
(V_{CB} = –60Vdc, I_E = 0)	MMBTA55		—	–0.1	
(V_{CB} = –80Vdc, I_E = 0)	MMBTA56		—	–0.1	

1. FR–5 = 1.0 x 0.75 x 0.062 in.
2. Alumina = 0.4 x 0.3 x 0.024 in. 99.5% alumina.
3. Pulse Test: Pulse Width ≤300 µs, Duty Cycle ≤2.0%.

ELECTRICAL CHARACTERISTICS

MMBTA55/56

ELECTRICAL CHARACTERISTICS (T_A = 25°C unless otherwise noted) (Continued)

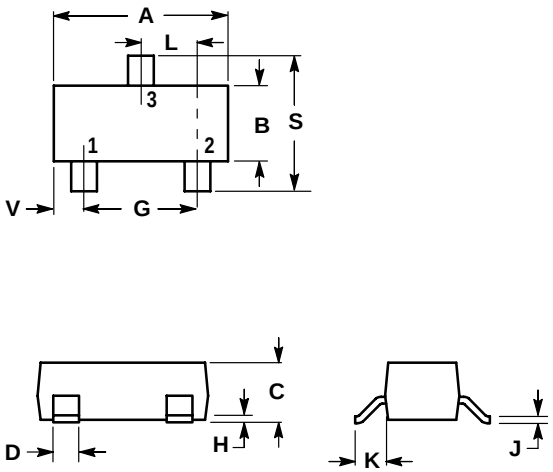
Characteristic	Symbol	Min	Max	Unit
ON CHARACTERISTICS				
DC Current Gain	h_{FE}			—
(I_C = –10 mAdc, V_{CE} = –1.0 Vdc)		100	—	
(I_C = –100mAdc, V_{CE} = –1.0 Vdc)		100	—	
Collector–Emitter Saturation Voltage (I_C = –100mAdc, I_B = –10mAdc)	$V_{CE(sat)}$	—	–0.25	Vdc
Base–Emitter On Voltage (I_C = –100mAdc, V_{CE} = –1.0Vdc)	$V_{BE(on)}$	—	–1.2	Vdc
SMALL–SIGNAL CHARACTERISTICS				
Current –Gain–Bandwidth Product(4) (V_{CE} = –1.0 Vdc, I_C = –100mAdc, f = 100 MHz)	f_T	50	—	MHz

4. f_T is defined as the frequency at which $|h f_e|$ extrapolates to unity.

PACKAGE OUTLINE & DIMENSIONS

MMBTA55/56

SOT–23



NOTES:

1. DIMENSIONING AND TOLERANCING PER ANSI Y14.5M,1982
2. CONTROLLING DIMENSION: INCH.

DIM	INCHES		MILLIMETERS	
	MIN	MAX	MIN	MAX
A	0.1102	0.1197	2.80	3.04
B	0.0472	0.0551	1.20	1.40
C	0.0350	0.0440	0.89	1.11
D	0.0150	0.0200	0.37	0.50
G	0.0701	0.0807	1.78	2.04
H	0.0005	0.0040	0.013	0.100
J	0.0034	0.0070	0.085	0.177
K	0.0140	0.0285	0.35	0.69
L	0.0350	0.0401	0.89	1.02
S	0.0830	0.1039	2.10	2.64
V	0.0177	0.0236	0.45	0.60