

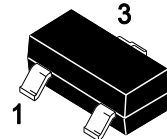
General Purpose Transistors

NPN Silicon

MBT2506 Series

FEATURE

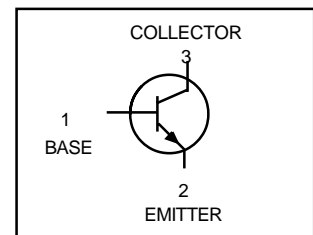
- High current capacity in compact package.
- Epitaxial planar type.
- PNP complement: MBT2516
- We declare that the material of product compliance with RoHS requirements.



SOT-23

DEVICE MARKING AND ORDERING INFORMATION

Device	Marking	Shipping
MBT2506P	1GA	3000/Tape&Reel
MBT2506Q	1GC	3000/Tape&Reel
MBT2506R	1GE	3000/Tape&Reel
MBT2506S	1GF	3000/Tape&Reel



MAXIMUM RATINGS

Rating	Symbol	Max	Unit
Collector-Emitter Voltage	V_{CEO}	25	V
Collector-Base Voltage	V_{CBO}	40	V
Emitter-Base Voltage	V_{EBO}	5	V
Collector Current	I_C	500	mAdc

THERMAL CHARACTERISTICS

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

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.



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

Characteristic	Symbol	Min	Typ	Max	Unit
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OFF CHARACTERISTICS

Collector-Emitter Breakdown Voltage (I _C =1.0mA)	V _{(BR)CEO}	25	-	-	V
Emitter-Base Breakdown Voltage (I _E =100 μA)	V _{(BR)EBO}	5	-	-	V
Collector-Base Breakdown Voltage (I _C =100 μA)	V _{(BR)CBO}	40	-	-	V
Collector Cutoff Current (V _{CB} =30V)	I _{CBO}	-	-	100	nA
Emitter Cutoff Current (V _{EB} =4V)	I _{EBO}	-	-	100	nA

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

Characteristic	Symbol	Min	Typ	Max	Unit
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ON CHARACTERISTICS

DC Current Gain I _C =100mA, V _{CE} =1V	h _{FE}	100	-	600	
Collector-Emitter Saturation Voltage (I _C =500mA, I _B =50mA)	V _{CE(S)}	-	-	0.5	V
Base Emitter Saturation Voltage (I _C =500mA, I _B =50mA)	V _{BE(S)}	-	-	1.2	V

NOTE :

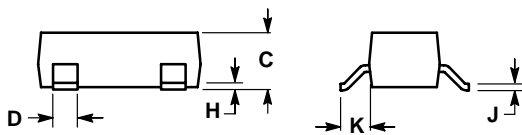
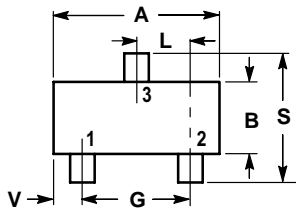
*	P	Q	R	S
h _{FE}	100~200	150~300	200~400	300~600



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

- PIN 1. BASE
- 2. EMITTER
- 3. COLLECTOR

