

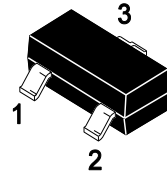
# General Purpose Transistors

## PNP Silicon

MBT2516 Series

### FEATURE

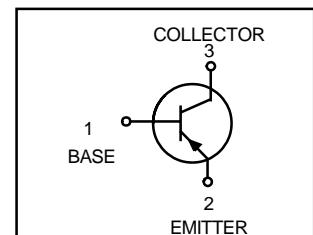
- High current capacity in compact package.
- Epitaxial planar type.
- NPN complement: MBT2506
- We declare that the material of product compliance with RoHS requirements.



SOT-23

### DEVICE MARKING AND ORDERING INFORMATION

Device	Marking	Shipping
MBT2516P	1GB	3000/Tape&Reel
MBT2516Q	1GD	3000/Tape&Reel
MBT2516R	1GF	3000/Tape&Reel
MBT2516S	1GH	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 $25^\circ\text{C}$	$P_D$	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 $25^\circ\text{C}$	$P_D$	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<sub>A</sub>=25°C unless otherwise noted)**

Characteristic	Symbol	Min	Typ	Max	Unit
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**OFF CHARACTERISTICS**

Collector-Emitter Breakdown Voltage (I <sub>C</sub> =-1.0mA)	V <sub>(BR)CEO</sub>	-25	-	-	V
Emitter-Base Breakdown Voltage (I <sub>E</sub> =-100μA)	V <sub>(BR)EBO</sub>	-5	-	-	V
Collector-Base Breakdown Voltage (I <sub>C</sub> =-100μA)	V <sub>(BR)CBO</sub>	-40	-	-	V
Collector Cutoff Current (V <sub>CB</sub> =-30V)	I <sub>CBO</sub>	-	-	-100	nA
Emitter Cutoff Current (V <sub>EB</sub> =-4V)	I <sub>EBO</sub>	-	-	-100	nA

**ELECTRICAL CHARACTERISTICS (T<sub>A</sub>=25°C unless otherwise noted)**

Characteristic	Symbol	Min	Typ	Max	Unit
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**ON CHARACTERISTICS**

DC Current Gain I <sub>C</sub> =-100mA, V <sub>CE</sub> =-1V	H <sub>FE</sub>	100	-	600	
Collector-Emitter Saturation Voltage (I <sub>C</sub> =-500mA, I <sub>B</sub> =-50mA)	V <sub>CE(S)</sub>	-	-	-0.5	V
Base Emitter Saturation Voltage (I <sub>C</sub> =-500mA, I <sub>B</sub> =-50mA)	V <sub>BE(S)</sub>	-	-	-1.2	V

NOTE :

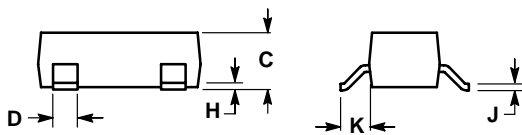
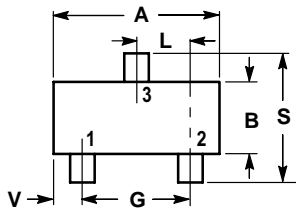
*	P	Q	R	S
h <sub>FE</sub>	100~200	150~300	200~400	300~600



### 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

