



DESCRIPTION

The MBD1505 is available in SOT-23 package.

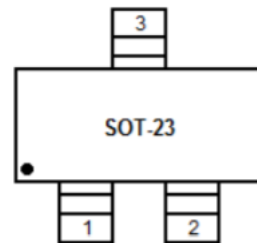
ORDERING INFORMATION

Package Type	Part Number
SOT-23	MBD1505
Note	SPQ: 3,000pcs/ Reel
AiT provides all RoHS Compliant Products	

FEATURES

- General Switching Application
- Excellent h_{FE} Linearity:
 $h_{FE(2)}=25(\text{MIN.})$ at $V_{CE}=-6V$, $I_c=400\text{mA}$
- For General Purpose Switching Applications
- Available in SOT-23 package

PIN DESCRIPTION



1. BASE
2. EMITTER
3. COLLECTOR



ABSOLUTE MAXIMUM RATINGS

T_A=25°C

V _{CB0} , Collector-Base Voltage	-35V
V _{CEO} , Collector-Emitter Voltage	-30V
V _{EBO} , Emitter-Base Voltage	-5V
I _C , Collector Current	-500mA
I _B , Base Current	-50mA
P _C , Collector Power Dissipation	150mW
T _J , Junction Temperature	150°C
T _{STG} , Storage Temperature Range	-55 ~150°C

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.

ELECTRICAL CHARACTERISTICS

T_A=25°C

Parameter	Symbol	Conditions	Min.	Typ.	Max.	Unit
Collector Cut-off Current	I _{CB0}	V _{CB} =-35V, I _E =0	-	-	-0.1	μA
Emitter Cut-off Current	I _{EBO}	V _{EB} =-5V, I _C =0	-	-	-0.1	μA
DC Current Gain ^{NOTE1}	h _{FE} (1)	V _{CE} =-1V, I _C =-100mA	70	-	400	
	h _{FE} (2)	V _{CE} =-6V, I _C =-400mA	25	-	-	
Collector-Emitter Saturation Voltage	V _{CE(sat)}	I _C =100mA, I _B =-10mA	-	-0.1	-0.25	V
Base-Emitter Voltage	V _{BE}	V _{CE} =-1V, I _C =-100mA	-	-0.8	-1.0	V
Transition Frequency	f _T	V _{CE} =-6V, I _C =-20mA	-	200	-	MHz
Collector Output Capacitance	C _{ob}	V _{CE} =-6V, I _E =0, f=1MHz	-	13	-	pF

NOTE1: h_{FE}(1) Classification O:70~140 Y: 120~240 GR:200~400

h_{FE}(2) Classification O:25Min. Y: 40Min.



TYPICAL CHARACTERISTICS

Figure 1. $I_C - V_{CE}$ (Low Voltage Region)

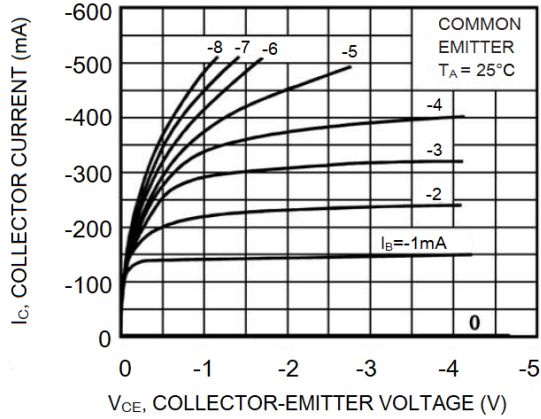


Figure 2. $h_{FE} - I_C$

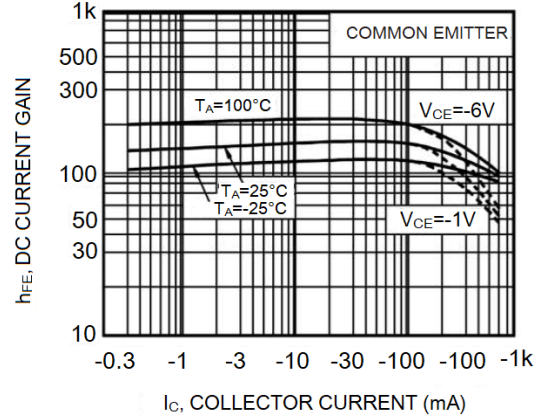


Figure 3. $V_{CE(sat)} - I_C$

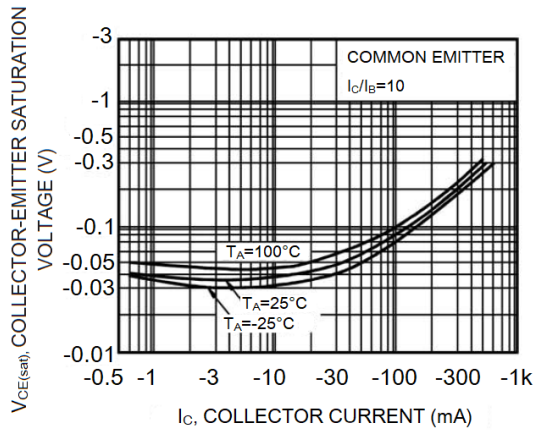


Figure 4. $I_B - V_{BE}$

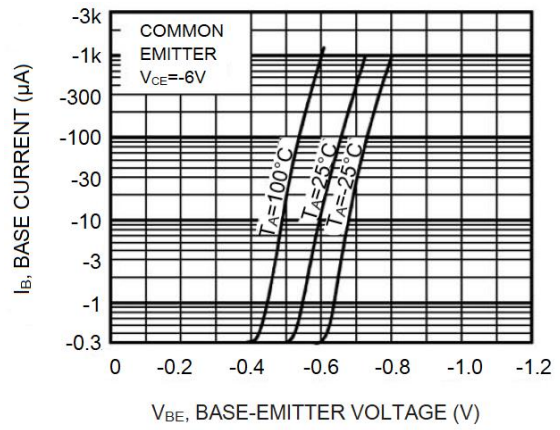
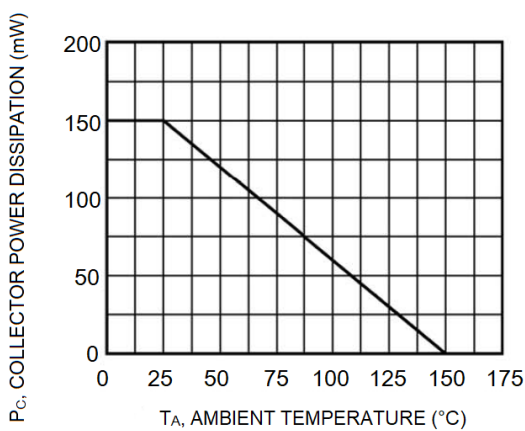


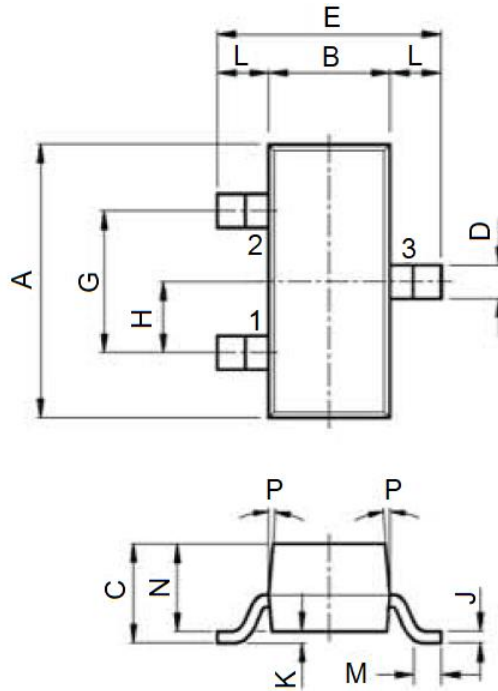
Figure 5. $P_C - T_A$





PACKAGE INFORMATION

Dimension in SOT-23 Package (Unit: mm)



DIM	MILLIMETERS
A	2.93±0.20
B	1.30+0.20/-0.15
C	1.30 MAX
D	0.45+0.15/-0.05
E	2.40+0.30/-0.20
G	1.90
H	0.95
J	0.13+0.10/-0.05
K	0.00 – 0.10
L	0.55
M	0.20 MIN
N	1.00+0.20/-0.10
P	7°



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