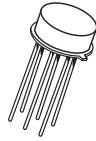


MD3250 MD3250A
MD3251 MD3251A

**DUAL PNP
SILICON TRANSISTOR**



TO-78 CASE

Central™

Semiconductor Corp.

DESCRIPTION:

The CENTRAL SEMICONDUCTOR MD3250 and MD3251 Series types are dual PNP silicon transistors, manufactured by the epitaxial planar process utilizing two individual chips mounted in a hermetically sealed metal case, designed for differential amplifier applications.

MARKING: FULL PART NUMBER

MAXIMUM RATINGS: ($T_A=25^\circ\text{C}$)

Collector-Emitter Voltage
Collector-Base Voltage
Emitter-Base Voltage
Continuous Collector Current
Power Dissipation (One Die)
Power Dissipation (Both Die)
Power Dissipation (One Die), $T_C=25^\circ\text{C}$
Power Dissipation (Both Die), $T_C=25^\circ\text{C}$
Operating and Storage Junction Temperature

SYMBOL		UNITS
V_{CEO}	40	V
V_{CBO}	50	V
V_{EBO}	5.0	V
I_C	50	mA
P_D	575	mW
P_D	625	mW
P_D	1.8	W
P_D	2.5	W
T_J, T_{stg}	-65 to +200	$^\circ\text{C}$

ELECTRICAL CHARACTERISTICS: ($T_A=25^\circ\text{C}$ unless otherwise noted)

SYMBOL	TEST CONDITIONS	MIN	MAX	UNITS
I_{CBO}	$V_{CB}=40\text{V}$		10	nA
I_{CBO}	$V_{CB}=40\text{V}, T_A=150^\circ\text{C}$		10	μA
I_{EBO}	$V_{BE}=3.0\text{V}$		10	nA
BV_{CEO}	$I_C=10\text{mA}$	40		V
BV_{CBO}	$I_C=10\mu\text{A}$	50		V
BV_{EBO}	$I_E=10\mu\text{A}$	5.0		V
$V_{CE}(\text{SAT})$	$I_C=10\text{mA}, I_B=1.0\text{mA}$		0.25	V
$V_{CE}(\text{SAT})$	$I_C=50\text{mA}, I_B=5.0\text{mA}$		0.50	V
$V_{BE}(\text{SAT})$	$I_C=10\text{mA}, I_B=1.0\text{mA}$	0.60	0.90	V
$V_{BE}(\text{SAT})$	$I_C=50\text{mA}, I_B=5.0\text{mA}$		1.2	V
h_{FE}	$V_{CE}=5.0\text{V}, I_C=10\mu\text{A}$ (MD3250,A)	25		
h_{FE}	$V_{CE}=5.0\text{V}, I_C=10\mu\text{A}$ (MD3251,A)	50		
h_{FE}	$V_{CE}=5.0\text{V}, I_C=100\mu\text{A}$ (MD3250,A)	50	150	
h_{FE}	$V_{CE}=5.0\text{V}, I_C=100\mu\text{A}$ (MD3251,A)	80	300	
h_{FE}	$V_{CE}=5.0\text{V}, I_C=1.0\text{mA}$ (MD3250,A)	50	150	
h_{FE}	$V_{CE}=5.0\text{V}, I_C=1.0\text{mA}$ (MD3251,A)	100	300	
h_{FE}	$V_{CE}=5.0\text{V}, I_C=10\text{mA}$ (MD3250,A)	50		
h_{FE}	$V_{CE}=5.0\text{V}, I_C=10\text{mA}$ (MD3251,A)	100		

R0 (9-June 2009)

**DUAL PNP
SILICON TRANSISTOR**

ELECTRICAL CHARACTERISTICS - Continued: ($T_A=25^\circ\text{C}$ unless otherwise noted)

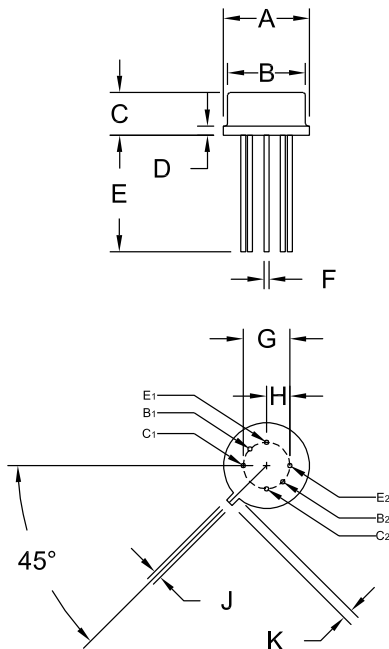
SYMBOL	TEST CONDITIONS	MIN	MAX	UNITS
h_{FE}	$V_{CE}=5.0\text{V}$, $I_C=50\text{mA}$ (MD3250,A)	15		
h_{FE}	$V_{CE}=5.0\text{V}$, $I_C=50\text{mA}$ (MD3251,A)	30		
f_T	$V_{CE}=20\text{V}$, $I_C=10\text{mA}$, $f=100\text{MHz}$ (MD3250,A)	200		MHz
f_T	$V_{CE}=20\text{V}$, $I_C=10\text{mA}$, $f=100\text{MHz}$ (MD3251,A)	250		MHz
C_{ob}	$V_{CB}=5.0\text{V}$, $I_E=0$, $f=100\text{kHz}$		6.0	pF
C_{ib}	$V_{BE}=1.0\text{V}$, $I_C=0$, $f=100\text{kHz}$		8.0	pF

MATCHING CHARACTERISTICS:

SYMBOL	TEST CONDITIONS	MIN	MAX	UNITS
h_{FE1}/h_{FE2} (Note 1)	$V_{CE}=5.0\text{V}$, $I_C=100\mu\text{A}$	0.90	1.0	
h_{FE1}/h_{FE2} (Note 1)	$V_{CE}=5.0\text{V}$, $I_C=1.0\text{mA}$	0.90	1.0	
$ V_{BE1}-V_{BE2} $	$V_{CE}=5.0\text{V}$, $I_C=10\mu\text{A}$		5.0	mV
$ V_{BE1}-V_{BE2} $	$V_{CE}=5.0\text{V}$, $I_C=100\mu\text{A}$		3.0	mV
$ V_{BE1}-V_{BE2} $	$V_{CE}=5.0\text{V}$, $I_C=10\text{mA}$		5.0	mV

1) The lowest h_{FE} reading is taken as h_{FE1} .

TO-78 CASE - MECHANICAL OUTLINE



SYMBOL	INCHES		MILLIMETERS	
	MIN	MAX	MIN	MAX
A (DIA)	0.335	0.370	8.51	9.40
B (DIA)	0.305	0.335	7.75	8.51
C	0.150	0.185	3.81	4.70
D	-	0.040	-	1.02
E	0.500	-	12.70	-
F (DIA)	0.016	0.021	0.41	0.53
G	0.200		5.08	
H	0.100		2.54	
J	0.028	0.034	0.71	0.86
K	0.029	0.045	0.74	1.14

TO-78 (REV: R1)

MARKING: FULL PART NUMBER

R1

R0 (9-June 2009)