

**MD3725**  
**SILICON**  
**DUAL NPN TRANSISTOR**



**TO-78 CASE**



[www.centrasemi.com](http://www.centrasemi.com)

**DESCRIPTION:**

The CENTRAL SEMICONDUCTOR MD3725 is a silicon dual NPN transistor utilizing two individual chips mounted in a hermetically sealed metal case designed for differential amplifier applications.

**MARKING: FULL PART NUMBER**

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

MAXIMUM RATINGS: (T <sub>A</sub> =25 °C unless otherwise noted)				
	SYMBOL			UNITS
Collector-Base Voltage	V <sub>CBO</sub>	65		V
Collector-Emitter Voltage	V <sub>CEO</sub>	40		V
Emitter-Base Voltage	V <sub>EBO</sub>	6.0		V
Continuous Collector Current	I <sub>C</sub>	1.0		A
Operating and Storage Junction Temperature	T <sub>J</sub> , T <sub>stg</sub>	-65 to +200		°C
		<b>One Die</b>	<b>Both Dice</b>	
Power Dissipation	P <sub>D</sub>	600	650	mW
Derate above T <sub>A</sub> =25°C		3.42	3.7	mW/°C
Power Dissipation (T <sub>C</sub> =25°C)	P <sub>D</sub>	2.1	3.0	W
Derate above T <sub>C</sub> =25°C		12	17.2	mW/°C
Thermal Resistance	θ <sub>JC</sub>	83.3	58.3	°C/W
Thermal Resistance	θ <sub>JA</sub>	292	270	°C/W

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

SYMBOL	TEST CONDITIONS	MIN	MAX	UNITS
$I_{CBO}$	$V_{CB}=40\text{V}$		1.7	$\mu\text{A}$
$I_{CBO}$	$V_{CB}=40\text{V}, T_A=100^{\circ}\text{C}$		120	$\mu\text{A}$
$BV_{CBO}$	$I_C=100\mu\text{A}$	65		V
$BV_{CEO}$	$I_C=10\text{mA}$	40		V
$BV_{EBO}$	$I_E=10\mu\text{A}$	6.0		V
$V_{CE(SAT)}$	$I_C=100\text{mA}, I_B=10\text{mA}$		0.26	V
$V_{CE(SAT)}$	$I_C=500\text{mA}, I_B=50\text{mA}$		0.45	V
$V_{BE(SAT)}$	$I_C=100\text{mA}, I_B=10\text{mA}$		0.86	V
$V_{BE(SAT)}$	$I_C=500\text{mA}, I_B=50\text{mA}$		1.2	V
$h_{FE}$	$V_{CE}=1.0\text{V}, I_C=100\text{mA}$	50	150	
$h_{FE}$	$V_{CE}=2.0\text{V}, I_C=500\text{mA}$	30		
$f_T$	$V_{CE}=10\text{V}, I_C=50\text{mA}, f=100\text{MHz}$	200		MHz
$C_{ob}$	$V_{CB}=10\text{V}, I_E=0, f=100\text{kHz}$		10	pF
$C_{ib}$	$V_{BE}=0.5\text{V}, I_C=0, f=100\text{kHz}$		65	pF

R0 (27-June 2016)

MD3725

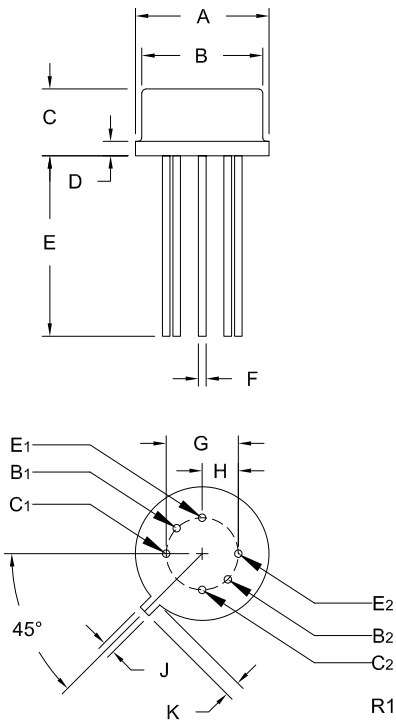
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ELECTRICAL CHARACTERISTICS PER TRANSISTOR Continued: ( $T_A=25^{\circ}\text{C}$  unless otherwise noted)

SYMBOL	TEST CONDITIONS	MIN	MAX	UNITS
$t_{on}$	$V_{CC}=30\text{V}$ , $V_{BE(OFF)}=3.8\text{V}$ , $I_C=500\text{mA}$ , $I_{B1}=50\text{mA}$		45	ns
$t_{off}$	$V_{CC}=30\text{V}$ , $I_C=500\text{mA}$ , $I_{B1}=I_{B2}=50\text{mA}$		75	ns

TO-78 CASE - MECHANICAL OUTLINE



DIMENSIONS				
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

R0 (27-June 2016)