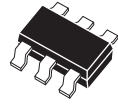


**CMXT3946**  
**SURFACE MOUNT**  
**DUAL COMPLEMENTARY**  
**SILICON TRANSISTOR**



**SOT-26 CASE**

# Central™

**Semiconductor Corp.**

**DESCRIPTION:**

The CENTRAL SEMICONDUCTOR CMXT3946 type is a dual complementary silicon transistor manufactured by the epitaxial planar process, epoxy molded in a surface mount package, designed for small signal general purpose and switching applications.

**MARKING CODE: X46**

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

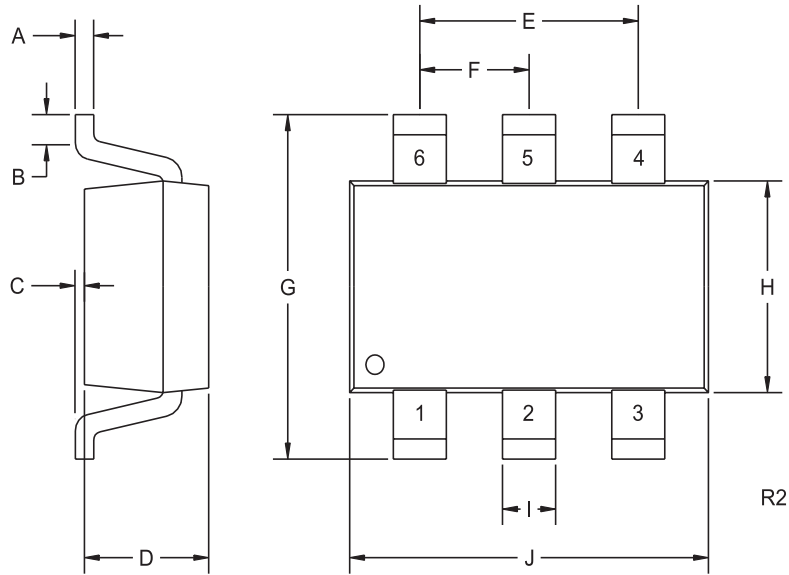
	<b>SYMBOL</b>	<b>NPN</b>	<b>PNP</b>	<b>UNITS</b>
Collector-Base Voltage	$V_{CBO}$	60	40	V
Collector-Emitter Voltage	$V_{CEO}$	40	40	V
Emitter-Base Voltage	$V_{EBO}$	6.0	5.0	V
Collector Current	$I_C$	200		mA
Power Dissipation	$P_D$	350		mW
Operating and Storage Junction Temperature	$T_J, T_{stg}$	-65 to +150		$^\circ\text{C}$
Thermal Resistance	$\theta_{JA}$	357		$^\circ\text{C/W}$

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

<b>SYMBOL</b>	<b>TEST CONDITIONS</b>	<b>NPN</b>		<b>PNP</b>		<b>UNITS</b>
		<b>MIN</b>	<b>MAX</b>	<b>MIN</b>	<b>MAX</b>	
$I_{CEV}$	$V_{CE}=30\text{V}, V_{EB}=3.0\text{V}$		50		50	nA
$BV_{CBO}$	$I_C=10\mu\text{A}$	60		40		V
$BV_{CEO}$	$I_C=1.0\text{mA}$	40		40		V
$BV_{EBO}$	$I_E=10\mu\text{A}$	6.0		5.0		V
$V_{CE(SAT)}$	$I_C=10\text{mA}, I_B=1.0\text{mA}$		0.20		0.25	V
$V_{CE(SAT)}$	$I_C=50\text{mA}, I_B=5.0\text{mA}$		0.30		0.40	V
$V_{BE(SAT)}$	$I_C=10\text{mA}, I_B=1.0\text{mA}$	0.65	0.85	0.65	0.85	V
$V_{BE(SAT)}$	$I_C=50\text{mA}, I_B=5.0\text{mA}$		0.95		0.95	V
$h_{FE}$	$V_{CE}=1.0\text{V}, I_C=0.1\text{mA}$	40		60		
$h_{FE}$	$V_{CE}=1.0\text{V}, I_C=1.0\text{mA}$	70		80		
$h_{FE}$	$V_{CE}=1.0\text{V}, I_C=10\text{mA}$	100	300	100	300	
$h_{FE}$	$V_{CE}=1.0\text{V}, I_C=50\text{mA}$	60		60		
$h_{FE}$	$V_{CE}=1.0\text{V}, I_C=100\text{mA}$	30		30		
$f_T$	$V_{CE}=20\text{V}, I_C=10\text{mA}, f=100\text{MHz}$	300		250		MHz
$C_{ob}$	$V_{CB}=5.0\text{V}, I_E=0, f=1.0\text{MHz}$		4.0		4.5	pF
$C_{ib}$	$V_{BE}=0.5\text{V}, I_C=0, f=1.0\text{MHz}$		8.0		10	pF
$h_{ie}$	$V_{CE}=10\text{V}, I_C=1.0\text{mA}, f=1.0\text{kHz}$	1.0	10	2.0	12	$\text{k}\Omega$
$h_{re}$	$V_{CE}=10\text{V}, I_C=1.0\text{mA}, f=1.0\text{kHz}$	0.5	8.0	0.1	10	$\times 10^{-4}$
$h_{fe}$	$V_{CE}=10\text{V}, I_C=1.0\text{mA}, f=1.0\text{kHz}$	100	400	100	400	
$h_{oe}$	$V_{CE}=10\text{V}, I_C=1.0\text{mA}, f=1.0\text{kHz}$	1.0	40	3.0	60	$\mu\text{mhos}$
NF	$V_{CE}=5.0\text{V}, I_C=100\mu\text{A}, R_S=1.0\text{k}\Omega$ $f=10\text{Hz to } 15.7\text{kHz}$		5.0		4.0	dB
$t_d$	$V_{CC}=3.0\text{V}, V_{BE}=0.5\text{V}, I_C=10\text{mA}, I_{B1}=1.0\text{mA}$		35		35	ns
$t_r$	$V_{CC}=3.0\text{V}, V_{BE}=0.5\text{V}, I_C=10\text{mA}, I_{B1}=1.0\text{mA}$		35		35	ns
$t_s$	$V_{CC}=3.0\text{V}, I_C=10\text{mA}, I_{B1}=I_{B2}=1.0\text{mA}$		200		225	ns
$t_f$	$V_{CC}=3.0\text{V}, I_C=10\text{mA}, I_{B1}=I_{B2}=1.0\text{mA}$		50		75	ns

R1 (06-January 2003)

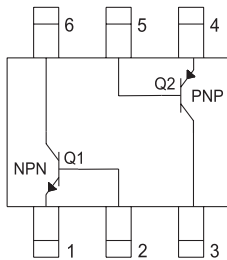
**SOT-26 CASE - MECHANICAL OUTLINE**



**LEAD CODE:**

- 1) EMITTER Q1
- 2) BASE Q1
- 3) COLLECTOR Q2
- 4) EMITTER Q2
- 5) BASE Q2
- 6) COLLECTOR Q1

**MARKING CODE: X46**



SYMBOL	DIMENSIONS			
	INCHES		MILLIMETERS	
	MIN	MAX	MIN	MAX
A	0.004	0.007	0.11	0.19
B	0.016	-	0.40	-
C	-	0.004	-	0.10
D	0.039	0.047	1.00	1.20
E	0.074	0.075	1.88	1.92
F	0.037	0.038	0.93	0.97
G	0.102	0.118	2.60	3.00
H	0.059	0.067	1.50	1.70
I	0.016		0.41	
J	0.110	0.118	2.80	3.00

SOT-26 (REV: R2)