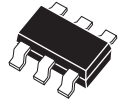


CMXT2207

**SURFACE MOUNT  
SUPERmini™  
DUAL COMPLEMENTARY  
SILICON TRANSISTOR**

SUPERmini™



**SOT-26 CASE**

**Central™**  
**Semiconductor Corp.**

**DESCRIPTION:**

The CENTRAL SEMICONDUCTOR CMXT2207 type is a dual complementary silicon transistor manufactured by the epitaxial planar process, epoxy molded in a SUPERmini™ surface mount package, designed for small signal general purpose and switching applications.

**MARKING CODE: X07**

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

	SYMBOL	NPN	PNP	UNITS
Collector-Base Voltage	$V_{CB0}$	75	60	V
Collector-Emitter Voltage	$V_{CE0}$	40	60	V
Emitter-Base Voltage	$V_{EBO}$	6.0	5.0	V
Collector Current	$I_C$		600	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 PER TRANSISTOR:** ( $T_A=25^\circ\text{C}$  unless otherwise noted)

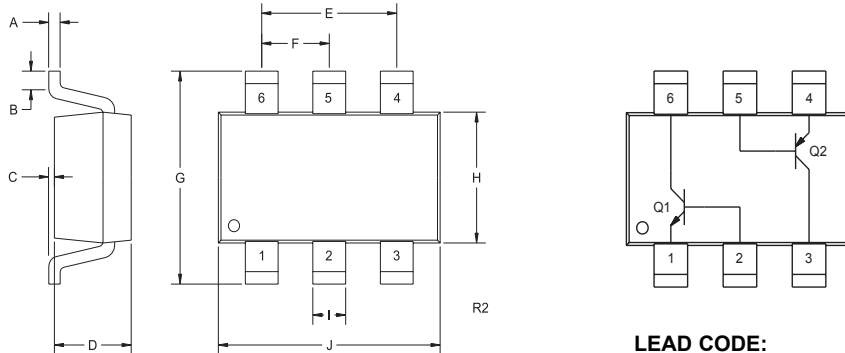
SYMBOL	TEST CONDITIONS	NPN		PNP		UNITS
		MIN	MAX	MIN	MAX	
$I_{CBO}$	$V_{CB}=60\text{V}$		10			nA
$I_{CBO}$	$V_{CB}=50\text{V}$				10	nA
$I_{CBO}$	$V_{CB}=60\text{V}, T_A=125^\circ\text{C}$		10			$\mu\text{A}$
$I_{CBO}$	$V_{CB}=50\text{V}, T_A=125^\circ\text{C}$				10	$\mu\text{A}$
$I_{EBO}$	$V_{EB}=3.0\text{V}$		10			nA
$I_{CEV}$	$V_{CE}=60\text{V}, V_{EB}=3.0\text{V}$		10			nA
$I_{CEV}$	$V_{CE}=30\text{V}, V_{BE}=0.5\text{V}$				50	nA
$BV_{CBO}$	$I_C=10\mu\text{A}$	75		60		V
$BV_{CEO}$	$I_C=10\text{mA}$	40		60		V
$BV_{EBO}$	$I_E=10\mu\text{A}$	6.0		5.0		V
$V_{CE(SAT)}$	$I_C=150\text{mA}, I_B=15\text{mA}$		0.3		0.4	V
$V_{CE(SAT)}$	$I_C=500\text{mA}, I_B=50\text{mA}$		1.0		1.6	V
$V_{BE(SAT)}$	$I_C=150\text{mA}, I_B=15\text{mA}$	0.6	1.2		1.3	V
$V_{BE(SAT)}$	$I_C=500\text{mA}, I_B=50\text{mA}$		2.0		2.6	V
$h_{FE}$	$V_{CE}=10\text{V}, I_C=0.1\text{mA}$	35		75		
$h_{FE}$	$V_{CE}=10\text{V}, I_C=1.0\text{mA}$	50		100		
$h_{FE}$	$V_{CE}=10\text{V}, I_C=10\text{mA}$	75		100		
$h_{FE}$	$V_{CE}=10\text{V}, I_C=150\text{mA}$	100	300	100	300	
$h_{FE}$	$V_{CE}=1.0\text{V}, I_C=150\text{mA}$	50				
$h_{FE}$	$V_{CE}=10\text{V}, I_C=500\text{mA}$	40		50		
$f_T$	$V_{CE}=20\text{V}, I_C=20\text{mA}, f=100\text{MHz}$	300				MHz
$f_T$	$V_{CE}=20\text{V}, I_C=50\text{mA}, f=100\text{MHz}$			200		MHz

R2 (06-August 2003)

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

SYMBOL	TEST CONDITIONS	NPN		PNP		UNITS
		MIN	MAX	MIN	MAX	
$C_{ob}$	$V_{CB}=10\text{V}, I_E=0, f=1.0\text{MHz}$		8.0		8.0	pF
$C_{ib}$	$V_{EB}=0.5\text{V}, I_C=0, f=1.0\text{MHz}$		25			pF
$C_{rb}$	$V_{EB}=2.0\text{V}, I_C=0, f=1.0\text{MHz}$				30	pF
$h_{ie}$	$V_{CE}=10\text{V}, I_C=1.0\text{mA}, f=1.0\text{kHz}$	2.0	8.0			$k\Omega$
$h_{ie}$	$V_{CE}=10\text{V}, I_C=10\text{mA}, f=1.0\text{kHz}$	0.25	1.25			$k\Omega$
$h_{re}$	$V_{CE}=10\text{V}, I_C=1.0\text{mA}, f=1.0\text{kHz}$		8.0			$\times 10^{-4}$
$h_{re}$	$V_{CE}=10\text{V}, I_C=10\text{mA}, f=1.0\text{kHz}$		4.0			$\times 10^{-4}$
$h_{fe}$	$V_{CE}=10\text{V}, I_C=1.0\text{mA}, f=1.0\text{kHz}$		50		300	
$h_{fe}$	$V_{CE}=10\text{V}, I_C=10\text{mA}, f=1.0\text{kHz}$		75		375	
$h_{oe}$	$V_{CE}=10\text{V}, I_C=1.0\text{mA}, f=1.0\text{kHz}$		5.0		35	$\mu\text{hos}$
$h_{oe}$	$V_{CE}=10\text{V}, I_C=10\text{mA}, f=1.0\text{kHz}$		25		200	$\mu\text{hos}$
$r_b' C_C$	$V_{CB}=10\text{V}, I_E=20\text{mA}, f=31.8\text{MHz}$		150			ps
NF	$V_{CE}=10\text{V}, I_C=100\text{mA}, R_S=1.0k\Omega, f=1.0\text{kHz}$		4.0			dB
$t_{on}$	$V_{CC}=30\text{V}, V_{BE}=0.5\text{V}, I_C=150\text{mA}, I_{B1}=15\text{mA}$				45	ns
$t_d$	$V_{CC}=30\text{V}, V_{BE}=0.5\text{V}, I_C=150\text{mA}, I_{B1}=15\text{mA}$		10		10	ns
$t_r$	$V_{CC}=30\text{V}, V_{BE}=0.5\text{V}, I_C=150\text{mA}, I_{B1}=15\text{mA}$		25		40	ns
$t_{off}$	$V_{CC}=6.0\text{V}, I_C=150\text{mA}, I_{B1}=I_{B2}=15\text{mA}$				100	ns
$t_s$	$V_{CC}=30\text{V}, I_C=150\text{mA}, I_{B1}=I_{B2}=15\text{mA}$		225			ns
$t_s$	$V_{CC}=6.0\text{V}, I_C=150\text{mA}, I_{B1}=I_{B2}=15\text{mA}$				80	ns
$t_f$	$V_{CC}=30\text{V}, I_C=150\text{mA}, I_{B1}=I_{B2}=15\text{mA}$		60			ns
$t_f$	$V_{CC}=6.0\text{V}, I_C=150\text{mA}, I_{B1}=I_{B2}=15\text{mA}$				30	ns

**SOT-26 CASE - MECHANICAL OUTLINE**



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)

**LEAD CODE:**

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

**MARKING CODE: X07**

R2 (06-August 2003)