

CentralTM Semiconductor Corp.

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Manufacturers of World Class Discrete Semiconductors

CMXT2207

SURFACE MOUNT
DUAL COMPLEMENTARY
SILICON TRANSISTOR

SOT-26 CASE

DESCRIPTION:

The CENTRAL SEMICONDUCTOR CMXT2207 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 is **X07**.

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

	<u>SYMBOL</u>	<u>NPN TRANSISTOR</u>	<u>PNP TRANSISTOR</u>	<u>UNITS</u>
Collector-Base Voltage	V_{CB0}	75	60	V
Collector-Emitter Voltage	V_{CEO}	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	Θ_{JA}		357	$^\circ\text{C/W}$

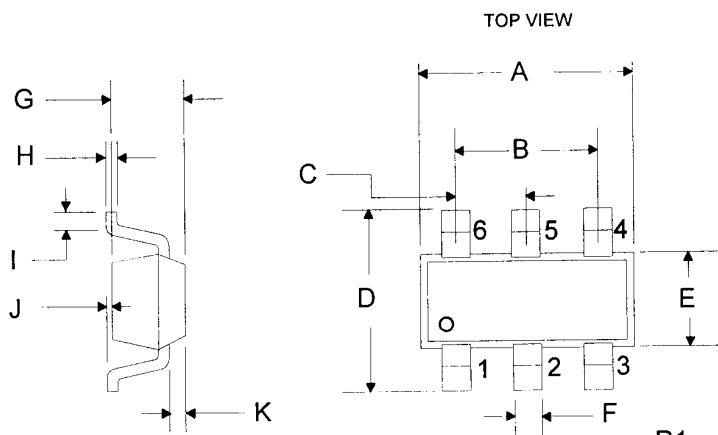
ELECTRICAL CHARACTERISTICS: ($T_A=25^\circ\text{C}$ unless otherwise noted)

<u>SYMBOL</u>	<u>TEST CONDITIONS</u>	<u>NPN TRANSISTOR</u>		<u>PNP TRANSISTOR</u>		<u>UNITS</u>
		<u>MIN</u>	<u>MAX</u>	<u>MIN</u>	<u>MAX</u>	
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			μA
I_{CBO}	$V_{CB}=50\text{V}, T_A=125^\circ\text{C}$			10		μA
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		

ELECTRICAL CHARACTERISTICS: continued

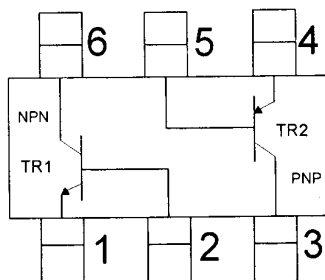
SYMBOL	TEST CONDITIONS	NPN TRANSISTOR		PNP TRANSISTOR		UNITS
		MIN	MAX	MIN	MAX	
h_{FE}	$V_{CE}=10V, I_C=150mA$	100	300	100	300	
h_{FE}	$V_{CE}=1.0V, I_C=150mA$	50				
h_{FE}	$V_{CE}=10V, I_C=500mA$	40		50		
f_T	$V_{CE}=20V, I_C=20mA, f=100MHz$	300				MHz
f_T	$V_{CE}=20V, I_C=50mA, f=100MHz$			200		MHz
C_{ob}	$V_{CB}=10V, I_E=0, f=1.0MHz$		8.0		8.0	pF
C_{ib}	$V_{EB}=0.5V, I_C=0, f=1.0MHz$		25			pF
C_{ib}	$V_{EB}=2.0V, I_C=0, f=1.0MHz$				30	pF
h_{ie}	$V_{CE}=10V, I_C=1.0mA, f=1.0kHz$	2.0	8.0			k Ω
h_{ie}	$V_{CE}=10V, I_C=10mA, f=1.0kHz$	0.25	1.25			k Ω
h_{re}	$V_{CE}=10V, I_C=1.0mA, f=1.0kHz$		8.0			$\times 10^{-4}$
h_{re}	$V_{CE}=10V, I_C=10mA, f=1.0kHz$		4.0			$\times 10^{-4}$
h_{fe}	$V_{CE}=10V, I_C=1.0mA, f=1.0kHz$	50	300			
h_{fe}	$V_{CE}=10V, I_C=10mA, f=1.0kHz$	75	375			
h_{oe}	$V_{CE}=10V, I_C=1.0mA, f=1.0kHz$	5.0	35			$\mu mhos$
h_{oe}	$V_{CE}=10V, I_C=10mA, f=1.0kHz$	25	200			$\mu mhos$
$rb'C_C$	$V_{CB}=10V, I_E=20mA, f=31.8MHz$		150			ps
NF	$V_{CE}=10V, I_C=100mA, R_S=1.0k\Omega, f=1.0kHz$		4.0			dB
t_{on}	$V_{CC}=30V, V_{BE}=0.5V, I_C=150mA, I_{B1}=15mA$				45	ns
t_d	$V_{CC}=30V, V_{BE}=0.5V, I_C=150mA, I_{B1}=15mA$		10		10	ns
t_r	$V_{CC}=30V, V_{BE}=0.5V, I_C=150mA, I_{B1}=15mA$		25		40	ns
t_{off}	$V_{CC}=6.0V, I_C=150mA, I_{B1}=I_{B2}=15mA$				100	ns
t_s	$V_{CC}=30V, I_C=150mA, I_{B1}=I_{B2}=15mA$		225			ns
t_s	$V_{CC}=6.0V, I_C=150mA, I_{B1}=I_{B2}=15mA$				80	ns
t_f	$V_{CC}=30V, I_C=150mA, I_{B1}=I_{B2}=15mA$		60			ns
t_f	$V_{CC}=6.0V, I_C=150mA, I_{B1}=I_{B2}=15mA$				30	ns

SOT-26 CASE - MECHANICAL OUTLINE



SYMBOL	INCHES		MILLIMETERS	
	MIN	MAX	MIN	MAX
A	0.110	0.118	2.80	3.00
B	0.074	0.075	1.88	1.92
C	0.037	0.038	0.93	0.97
D	0.102	0.118	2.60	3.00
E	0.059	0.067	1.50	1.70
F	0.016	0.018	0.40	0.45
G	0.039	0.047	1.00	1.20
H	0.004	0.007	0.11	0.19
I	0.016	-	0.40	-
J	-	0.004	-	0.10
K	0.010	0.014	0.25	0.35

SOT-26 (REV: R1)



- Lead Code:
- 1) TR1 Emitter
 - 2) TR1 Base
 - 3) TR2 Collector
 - 4) TR2 Emitter
 - 5) TR2 Base
 - 6) TR1 Collector

R1

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