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Manufacturers of World Class Discrete Semiconductors

CMXT3904

SURFACE MOUNT
DUAL NPN SILICON TRANSISTOR

SOT-26 CASE

DESCRIPTION:

The CENTRAL SEMICONDUCTOR CMXT3904 type is a dual NPN silicon transistor manufactured by the epitaxial planar process, epoxy molded in a surface mount package, designed for small signal general purpose amplifier and switching applications. Marking Code is **X1A**.

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

	<u>SYMBOL</u>		<u>UNITS</u>
Collector-Base Voltage	V_{CBO}	60	V
Collector-Emitter Voltage	V_{CEO}	40	V
Emitter-Base Voltage	V_{EBO}	6.0	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	Θ_{JA}	357	$^\circ\text{C/W}$

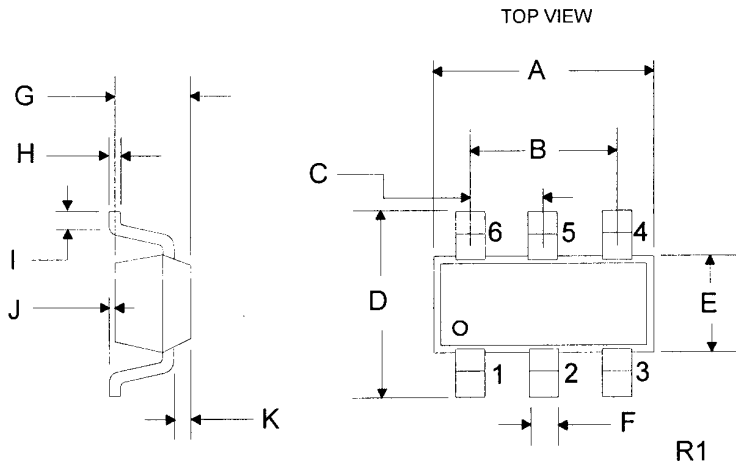
ELECTRICAL CHARACTERISTICS PER TRANSISTOR: ($T_A=25^\circ\text{C}$ unless otherwise noted)

<u>SYMBOL</u>	<u>TEST CONDITIONS</u>	<u>MIN</u>	<u>MAX</u>	<u>UNITS</u>
I_{CEV}	$V_{CE}=30\text{V}, V_{EB}=3.0\text{V}$		50	nA
BV_{CBO}	$I_C=10\mu\text{A}$	60		V
BV_{CEO}	$I_C=1.0\text{mA}$	40		V
BV_{EBO}	$I_E=10\mu\text{A}$	6.0		V
$V_{CE(SAT)}$	$I_C=10\text{mA}, I_B=1.0\text{mA}$		0.20	V
$V_{CE(SAT)}$	$I_C=50\text{mA}, I_B=5.0\text{mA}$		0.30	V
$V_{BE(SAT)}$	$I_C=10\text{mA}, I_B=1.0\text{mA}$	0.65	0.85	V
$V_{BE(SAT)}$	$I_C=50\text{mA}, I_B=5.0\text{mA}$		0.95	V
h_{FE}	$V_{CE}=1.0\text{V}, I_C=0.1\text{mA}$	40		
h_{FE}	$V_{CE}=1.0\text{V}, I_C=1.0\text{mA}$	70		
h_{FE}	$V_{CE}=1.0\text{V}, I_C=10\text{mA}$	100	300	
h_{FE}	$V_{CE}=1.0\text{V}, I_C=50\text{mA}$	60		
h_{FE}	$V_{CE}=1.0\text{V}, I_C=100\text{mA}$	30		

ELECTRICAL CHARACTERISTICS PER TRANSISTOR: continued

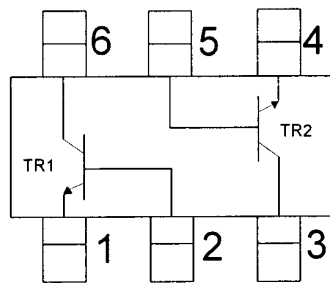
<u>SYMBOL</u>	<u>TEST CONDITIONS</u>	<u>MIN</u>	<u>MAX</u>	<u>UNITS</u>
f_T	$V_{CE}=20V, I_C=10mA, f=100MHz$	300		MHz
C_{ob}	$V_{CB}=5.0V, I_E=0, f=1.0MHz$		4.0	pF
C_{ib}	$V_{BE}=0.5V, I_C=0, f=1.0MHz$		8.0	pF
h_{ie}	$V_{CE}=10V, I_C=1.0mA, f=1.0kHz$	1.0	10	$k\Omega$
h_{re}	$V_{CE}=10V, I_C=1.0mA, f=1.0kHz$	0.5	8.0	$\times 10^{-4}$
h_{fe}	$V_{CE}=10V, I_C=1.0mA, f=1.0kHz$	100	400	
h_{oe}	$V_{CE}=10V, I_C=1.0mA, f=1.0kHz$	1.0	40	$\mu mhos$
NF	$V_{CE}=5.0V, I_C=100\mu A, R_S=1.0k\Omega$ $f=10Hz$ to $15.7kHz$		5.0	dB
t_d	$V_{CC}=3.0V, V_{BE}=0.5V, I_C=10mA, I_{B1}=1.0mA$		35	ns
t_r	$V_{CC}=3.0V, V_{BE}=0.5V, I_C=10mA, I_{B1}=1.0mA$		35	ns
t_s	$V_{CC}=3.0V, I_C=10mA, I_{B1}=I_{B2}=1.0mA$		200	ns
t_f	$V_{CC}=3.0V, I_C=10mA, I_{B1}=I_{B2}=1.0mA$		50	ns

SOT-26 CASE - MECHANICAL OUTLINE



SYMBOL	DIMENSIONS			
	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