

CMLT2207
DUAL
COMPLEMENTARY
TRANSISTORS



SOT-563 CASE

CentralTM
Semiconductor Corp.

DESCRIPTION:

The CENTRAL SEMICONDUCTOR CMLT2207 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 L70.**

Complementary Devices include:

1 x 2N2222A NPN Transistor
1 x 2N2907A PNP Transistor

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

	<u>SYMBOL</u>	<u>NPN (Q1)</u>	<u>PNP (Q2)</u>	<u>UNITS</u>
Collector-Base Voltage	V_{CBO}	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		$^{\circ}\text{C/W}$

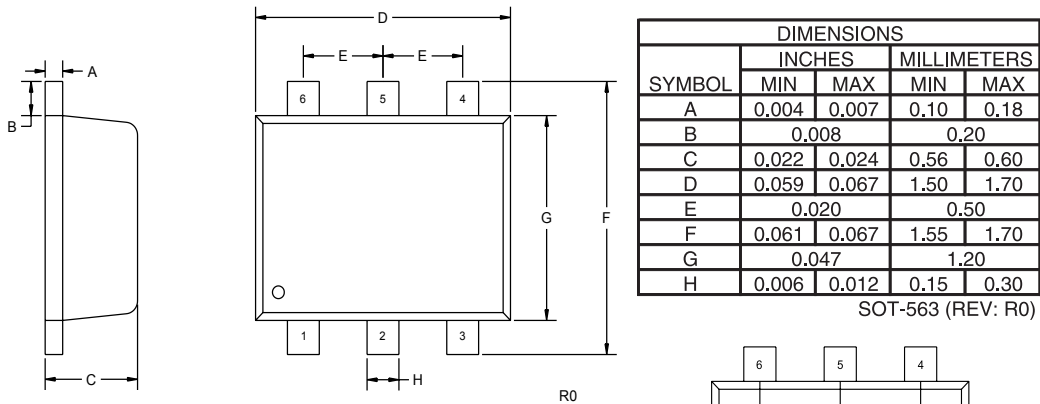
ELECTRICAL CHARACTERISTICS PER TRANSISTOR: ($T_A=25^{\circ}\text{C}$ unless otherwise noted)

<u>SYMBOL</u>	<u>TEST CONDITIONS</u>	<u>NPN (Q1)</u>		<u>PNP (Q2)</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	-	-	nA
I_{CBO}	$V_{CB}=50\text{V}, T_A=125^{\circ}\text{C}$	-	-	-	10	nA
I_{EBO}	$V_{EB}=3.0\text{V}$	-	10	-	-	nA
I_{CEV}	$V_{CE}=60\text{V}, V_{EB(OFF)}=3.0\text{V}$	-	10	-	-	nA
I_{CEV}	$V_{CE}=30\text{V}, V_{EB(OFF)}=500\text{mV}$	-	-	-	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	-	

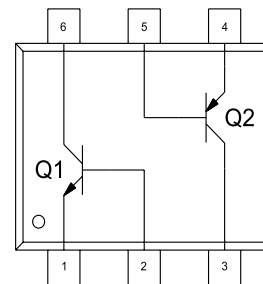
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SYMBOL	TEST CONDITIONS	NPN (Q1)		PNP (Q2)		UNITS
		MIN	MAX	MIN	MAX	
f_T	$V_{CE}=20V, I_C=20mA, f=100MHz$	300	-	-	-	MHz
f_T	$V_{CE}=20V, I_C=50mA, f=100MHz$	-	-	200	-	MHz
C_{ob}	$V_{CB}=10V, I_E=0, f=1.0MHz$	-	8.0	-	8.0	pF
C_{ib}	$V_{EB}=0.5V, I_C=0, f=1.0MHz$	-	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	-	-	x10-4
h_{re}	$V_{CE}=10V, I_C=10mA, f=1.0kHz$	-	4.0	-	-	x10-4
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	-	-	μ mhos
h_{oe}	$V_{CE}=10V, I_C=10mA, f=1.0kHz$	25	200	-	-	μ mhos
$rb'C_C$	$V_{CB}=10V, I_E=20mA, f=31.8MHz$	-	150	-	-	ps
NF	$V_{CE}=10V, I_C=100\mu A, R_S=1.0k\Omega, f=1.0kHz$	-	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-563 CASE - MECHANICAL OUTLINE



LEAD CODE:
1) Emitter Q1
2) Base Q1
3) Collector Q2
4) Emitter Q2
5) Base Q2
6) Collector Q1



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