

CMLT2222AG
SURFACE MOUNT
DUAL NPN SMALL SIGNAL
SILICON SWITCHING TRANSISTORS



www.centrasemi.com

DESCRIPTION:

The CENTRAL SEMICONDUCTOR CMLT2222AG consists of two (2) isolated 2222A NPN silicon transistors, manufactured by the epitaxial planar process and epoxy molded in an SOT-563 surface mount package. These PICOmini™ devices have been designed for small signal general purpose and switching applications.

MARKING CODE: 2CG

• Device is **Halogen Free** by design

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

Collector-Base Voltage
Collector-Emitter Voltage
Emitter-Base Voltage
Continuous Collector Current
Power Dissipation (Note 1)
Power Dissipation (Note 2)
Power Dissipation (Note 3)
Operating and Storage Junction Temperature
Thermal Resistance

SYMBOL		UNITS
V_{CB0}	75	V
V_{CEO}	40	V
V_{EBO}	6.0	V
I_C	600	mA
P_D	350	mW
P_D	300	mW
P_D	150	mW
T_J, T_{stg}	-65 to +150	$^\circ\text{C}$
θ_{JA}	357	$^\circ\text{C/W}$

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

SYMBOL	TEST CONDITIONS	MIN	MAX	UNITS
I_{CBO}	$V_{CB}=60\text{V}$		10	nA
I_{CBO}	$V_{CB}=60\text{V}, T_A=125^\circ\text{C}$		10	μA
I_{CEV}	$V_{CE}=60\text{V}, V_{EB}=3.0\text{V}$		10	nA
I_{EBO}	$V_{EB}=3.0\text{V}$		10	nA
BV_{CB0}	$I_C=10\mu\text{A}$	75		V
BV_{CEO}	$I_C=10\text{mA}$	40		V
BV_{EBO}	$I_E=10\mu\text{A}$	6.0		V
$V_{CE(SAT)}$	$I_C=150\text{mA}, I_B=15\text{mA}$		0.3	V
$V_{CE(SAT)}$	$I_C=500\text{mA}, I_B=50\text{mA}$		1.0	V
$V_{BE(SAT)}$	$I_C=150\text{mA}, I_B=15\text{mA}$	0.6	1.2	V
$V_{BE(SAT)}$	$I_C=500\text{mA}, I_B=50\text{mA}$		2.0	V
h_{FE}	$V_{CE}=10\text{V}, I_C=0.1\text{mA}$	35		
h_{FE}	$V_{CE}=10\text{V}, I_C=1.0\text{mA}$	50		
h_{FE}	$V_{CE}=10\text{V}, I_C=10\text{mA}$	75		
h_{FE}	$V_{CE}=1.0\text{V}, I_C=150\text{mA}$	50		
h_{FE}	$V_{CE}=10\text{V}, I_C=150\text{mA}$	100	300	
h_{FE}	$V_{CE}=10\text{V}, I_C=500\text{mA}$	40		

Notes: (1) Ceramic or aluminum core PC Board with copper mounting pad area of 4.0mm²
(2) FR-4 Epoxy PC Board with copper mounting pad area of 4.0mm²
(3) FR-4 Epoxy PC Board with copper mounting pad area of 1.4mm²

R3 (20-January 2010)

CMLT2222AG

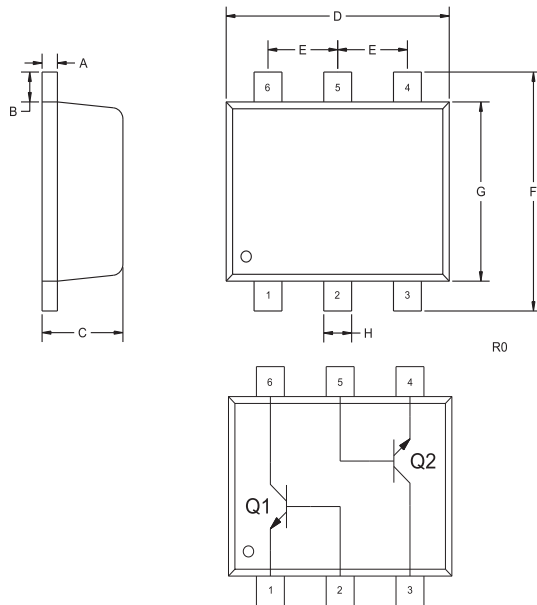
**SURFACE MOUNT
DUAL NPN SMALL SIGNAL
SILICON SWITCHING TRANSISTORS**



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

SYMBOL	TEST CONDITIONS	MIN	MAX	UNITS
f_T	$V_{CE}=20\text{V}$, $I_C=20\text{mA}$, $f=100\text{MHz}$	300		MHz
C_{ob}	$V_{CB}=10\text{V}$, $I_E=0$, $f=1.0\text{MHz}$		8.0	pF
C_{ib}	$V_{EB}=0.5\text{V}$, $I_C=0$, $f=1.0\text{MHz}$		25	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	μS
h_{oe}	$V_{CE}=10\text{V}$, $I_C=10\text{mA}$, $f=1.0\text{kHz}$	25	200	μS
$rb'C_C$	$V_{CB}=10\text{V}$, $I_E=20\text{mA}$, $f=31.8\text{MHz}$		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_d	$V_{CC}=30\text{V}$, $V_{BE}=0.5$, $I_C=150\text{mA}$, $I_{B1}=15\text{mA}$		10	ns
t_r	$V_{CC}=30\text{V}$, $V_{BE}=0.5$, $I_C=150\text{mA}$, $I_{B1}=15\text{mA}$		25	ns
t_s	$V_{CC}=30\text{V}$, $I_C=150\text{mA}$, $I_{B1}=I_{B2}=15\text{mA}$		225	ns
t_f	$V_{CC}=30\text{V}$, $I_C=150\text{mA}$, $I_{B1}=I_{B2}=15\text{mA}$		60	ns

SOT-563 CASE - MECHANICAL OUTLINE



SYMBOL	DIMENSIONS			
	INCHES		MILLIMETERS	
	MIN	MAX	MIN	MAX
A	0.004	0.007	0.10	0.18
B	0.008		0.20	
C	0.022	0.024	0.56	0.60
D	0.059	0.067	1.50	1.70
E	0.020		0.50	
F	0.061	0.067	1.55	1.70
G	0.047		1.20	
H	0.006	0.012	0.15	0.30

SOT-563 (REV: R0)

LEAD CODE:

- 1) Emitter Q1
- 2) Base Q1
- 3) Collector Q2
- 4) Emitter Q2
- 5) Base Q2
- 6) Collector Q1

MARKING CODE: 2CG

R3 (20-January 2010)