

CMLT2222AG

SURFACE MOUNT
DUAL NPN SMALL SIGNAL
SILICON SWITCHING TRANSISTORS

PICOmini™



SOT-563 CASE

• Device is **Halogen Free** by design



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

MAXIMUM RATINGS: (T_A=25°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

V_{CB0}
V_{CEO}
V_{EBO}
I_C
P_D
P_D
P_D
T_J, T_{stg}
Θ_{JA}

75
40
6.0
600
350
300
150
-65 to +150
357

UNITS

V
V
V
mA
mW
mW
mW
°C
°C/W

ELECTRICAL CHARACTERISTICS PER TRANSISTOR: (T_A=25°C unless otherwise noted)

SYMBOL	TEST CONDITIONS	MIN	MAX	UNITS
I _{CB0}	V _{CB} =60V		10	nA
I _{CB0}	V _{CB} =60V, T _A =125°C		10	μA
I _{CEV}	V _{CE} =60V, V _{EB} =3.0V		10	nA
I _{EBO}	V _{EB} =3.0V		10	nA
BV _{CB0}	I _C =10μA	75		V
BV _{CEO}	I _C =10mA	40		V
BV _{EBO}	I _E =10μA	6.0		V
V _{CE(SAT)}	I _C =150mA, I _B =15mA		0.3	V
V _{CE(SAT)}	I _C =500mA, I _B =50mA		1.0	V
V _{BE(SAT)}	I _C =150mA, I _B =15mA	0.6	1.2	V
V _{BE(SAT)}	I _C =500mA, I _B =50mA		2.0	V
h _{FE}	V _{CE} =10V, I _C =0.1mA	35		
h _{FE}	V _{CE} =10V, I _C =1.0mA	50		
h _{FE}	V _{CE} =10V, I _C =10mA	75		
h _{FE}	V _{CE} =1.0V, I _C =150mA	50		
h _{FE}	V _{CE} =10V, I _C =150mA	100	300	
h _{FE}	V _{CE} =10V, I _C =500mA	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

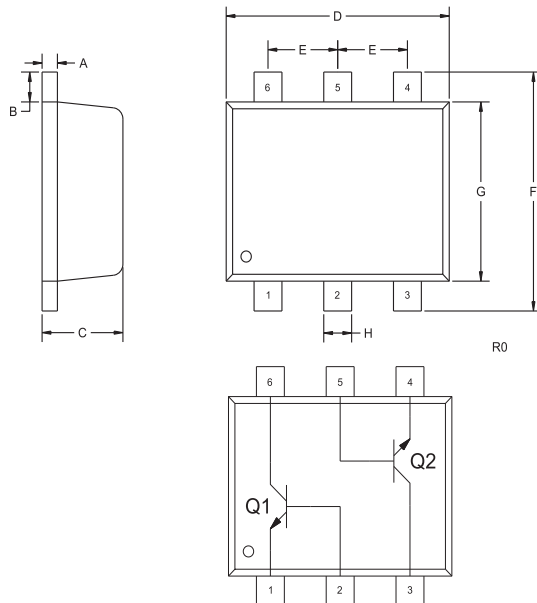
**SURFACE MOUNT
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ELECTRICAL CHARACTERISTICS PER TRANSISTOR - Continued: ($T_A=25^{\circ}\text{C}$ unless otherwise noted)

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
$r_b'C_C$	$V_{CB}=10\text{V}$, $I_E=20\text{mA}$, $f=31.8\text{MHz}$		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_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



DIMENSIONS				
SYMBOL	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

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