

CMLT2207G

**SURFACE MOUNT
DUAL, COMPLEMENTARY
SILICON TRANSISTORS**



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PICOmini™



SOT-563 CASE

DESCRIPTION:

The CENTRAL SEMICONDUCTOR CMLT2207G consists of one isolated 2N2222A NPN transistor and one complementary isolated 2N2907A PNP transistor, manufactured by the epitaxial planar process and epoxy molded in an SOT-563 surface mount package. This PICOmini™ device has been designed for small signal general purpose amplifier and switching applications.

MARKING CODE: L7G

• Device is **Halogen Free** by design

MAXIMUM RATINGS: (T_A=25°C)

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
Continuous Collector Current	I _C	600		mA
Power Dissipation	P _D	350		mW
Operating and Storage Junction Temperature	T _J , T _{stg}	-65 to +150		°C
Thermal Resistance	θ _{JA}	357		°C/W

SYMBOL	NPN (Q1)		PNP (Q2)		UNITS
V _{CBO}	75		60		V
V _{CEO}	40		60		V
V _{EBO}	6.0		5.0		V
I _C		600			mA
P _D		350			mW
T _J , T _{stg}		-65 to +150			°C
θ _{JA}		357			°C/W

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

SYMBOL	TEST CONDITIONS	NPN (Q1)		PNP (Q2)		UNITS
		MIN	MAX	MIN	MAX	
I _{CBO}	V _{CB} =60V	-	10	-	-	nA
I _{CBO}	V _{CB} =50V	-	-	-	10	nA
I _{CBO}	V _{CB} =60V, T _A =125°C	-	10	-	-	nA
I _{CBO}	V _{CB} =50V, T _A =125°C	-	-	-	10	nA
I _{CEV}	V _{CE} =60V, V _{EB(OFF)} =3.0V	-	10	-	-	nA
I _{CEV}	V _{CE} =30V, V _{EB(OFF)} =500mV	-	-	-	50	nA
I _{EBO}	V _{EB} =3.0V	-	10	-	-	nA
BV _{CBO}	I _C =10μA	75	-	60	-	V
BV _{CEO}	I _C =10mA	40	-	60	-	V
BV _{EBO}	I _E =10μA	6.0	-	5.0	-	V
V _{CE(SAT)}	I _C =150mA, I _B =15mA	-	0.3	-	0.4	V
V _{CE(SAT)}	I _C =500mA, I _B =50mA	-	1.0	-	1.6	V
V _{BE(SAT)}	I _C =150mA, I _B =15mA	0.6	1.2	-	1.3	V
V _{BE(SAT)}	I _C =500mA, I _B =50mA	-	2.0	-	2.6	V
h _{FE}	V _{CE} =10V, I _C =0.1mA	35	-	75	-	
h _{FE}	V _{CE} =10V, I _C =1.0mA	50	-	100	-	
h _{FE}	V _{CE} =10V, I _C =10mA	75	-	100	-	
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	-	

R3 (20-January 2010)

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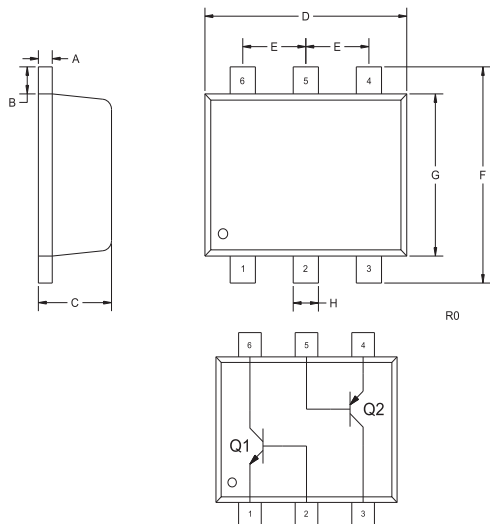
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ELECTRICAL CHARACTERISTICS - Continued:

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	-	-	μS
h_{oe}	$V_{CE}=10V, I_C=10mA, f=1.0kHz$	25	200	-	-	μS
$rb'C_C$	$V_{CB}=10V, I_E=20mA, f=31.8MHz$	-	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



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: MARKING CODE: L7G

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

R3 (20-January 2010)