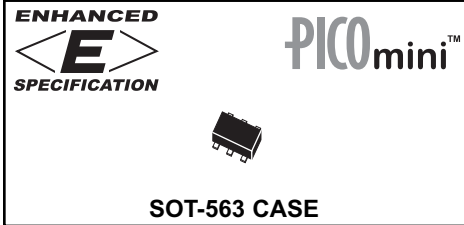




CMLT3904EG NPN
 CMLT3906EG PNP
 CMLT3946EG NPN/PNP

**ENHANCED SPECIFICATION
 COMPLEMENTARY PICOmini™
 SILICON TRANSISTORS**



MARKING CODES:

CMLT3904EG: C4G
 CMLT3906EG: C6G
 CMLT3946EG: 46G

MAXIMUM RATINGS: (T_A=25°C)

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

SYMBOL		UNITS
V _{CBO}	60	V
V _{CEO}	40	V
V _{EBO}	6.0	V
I _C	200	mA
P _D	350	mW
P _D	300	mW
P _D	150	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	MIN	NPN		PNP		UNITS
			TYP	TYP	TYP	MAX	
I _{CEV}	V _{CE} =30V, V _{EB} =3.0V					50	nA
◆ V _{CBO}	I _C =10μA	60	115	90			V
BV _{CEO}	I _C =1.0mA	40	60	55			V
◆ V _{EBO}	I _E =10μA	6.0	7.5	7.9			V
◆ V _{CE(SAT)}	I _C =10mA, I _B =1.0mA		.057	.05	0.1		V
◆ V _{CE(SAT)}	I _C =50mA, I _B =5.0mA		0.1	0.1	0.2		V
V _{BE(SAT)}	I _C =10mA, I _B =1.0mA	0.65	0.75	0.75	0.85		V
V _{BE(SAT)}	I _C =50mA, I _B =5.0mA		0.85	0.85	0.95		V
◆ h _{FE}	V _{CE} =1.0V, I _C =0.1mA	90	240	130			
◆ h _{FE}	V _{CE} =1.0V, I _C =1.0mA	100	235	150			

◆ Enhanced specification

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

Central™

Semiconductor Corp.

DESCRIPTION:

The CENTRAL SEMICONDUCTOR CMLT3904EG (two single NPN), CMLT3906EG (two single PNP), and CMLT3946EG (one each NPN and PNP complementary) are combinations of enhanced specification transistors in a space saving SOT-563 package, designed for small signal general purpose amplifier and switching applications.

- Device is **Halogen Free** by design
- Device is **RoHS** compliant

ENHANCED SPECIFICATIONS:

- ◆ V_{CBO} from 40V MIN to 60V MIN (PNP)
- ◆ V_{EBO} from 5.0V MIN to 6.0V MIN (PNP)
- ◆ V_{CE(SAT)} from 0.3V MAX to 0.2V MAX (NPN)
from 0.4V MAX to 0.2V MAX (PNP)
- ◆ h_{FE} from 60 MIN to 70 MIN (NPN/PNP)

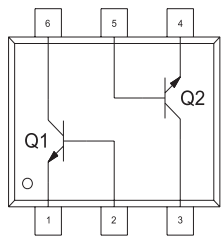
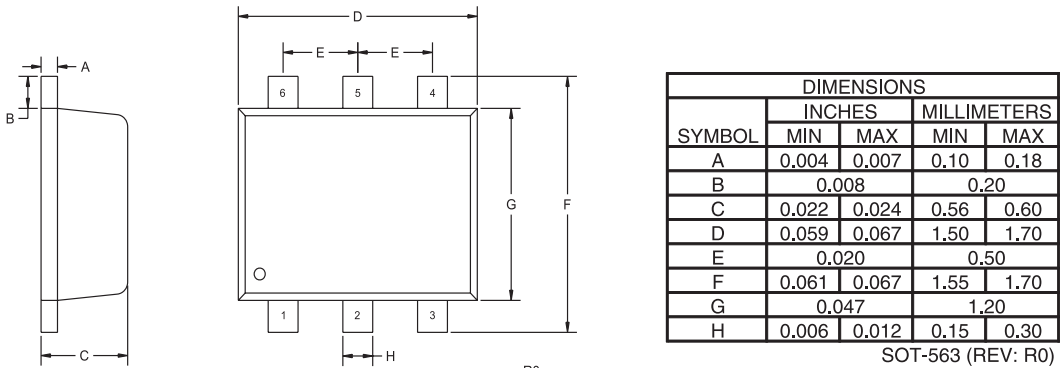
**ENHANCED SPECIFICATION
 COMPLEMENTARY PICOMiniTM
 SILICON TRANSISTORS**

ELECTRICAL CHARACTERISTICS PER TRANSISTOR - Continued:

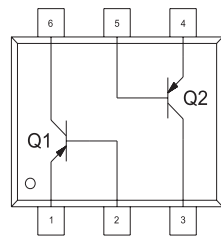
SYMBOL	TEST CONDITIONS	MIN	NPN	PNP	MAX	UNITS
			TYP	TYP		
◆ h _{FE}	V _{CE} =1.0V, I _C =10mA	100	215	150	300	
h_{FE}	V_{CE}=1.0V, I_C=50mA	70	110	120		
h _{FE}	V _{CE} =1.0V, I _C =100mA	30	50	55		
f _T	V _{CE} =20V, I _C =10mA, f=100MHz	300				MHz
C _{ob}	V _{CB} =5.0V, I _E =0, f=1.0MHz				4.0	pF
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			12	kΩ
h _{re}	V _{CE} =10V, I _C =1.0mA, f=1.0kHz	0.1			10	X10 ⁻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			60	μS
NF	V _{CE} =5.0V, I _C =100μA, R _S =1.0KΩ, f=10Hz to 15.7kHz				4.0	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

◆ Enhanced specification

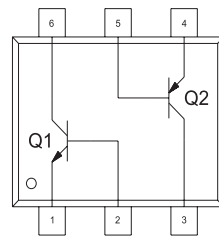
SOT-563 - MECHANICAL OUTLINE



CMLT3904EG
 MARKING CODE: C4G



CMLT3906EG
 MARKING CODE: C6G



CMLT3946EG
 MARKING CODE: 46G

LEAD CODE:

- 1) EMITTER Q1
- 2) BASE Q1
- 3) COLLECTOR Q2
- 4) EMITTER Q2
- 5) BASE Q2
- 6) COLLECTOR Q1