

CMUT3410 NPN
CMUT7410 PNP

**SURFACE MOUNT ULTRAmi™
COMPLEMENTARY LOW $V_{CE(SAT)}$
SILICON TRANSISTORS**

ULTRAmi™



SOT-523 CASE

Central™
Semiconductor Corp.

DESCRIPTION:

The CENTRAL SEMICONDUCTOR CMUT3410, and CMUT7410, are low $V_{CE(SAT)}$ silicon transistors in an ULTRAmi™ surface mount package designed for small signal general purpose amplifier and switching applications, requiring low collector emitter saturation voltage.

MARKING CODES:

CMUT3410 NPN MARKING CODE: C43
CMUT7410 PNP MARKING CODE: C47

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

	SYMBOL		UNITS
Collector-Base Voltage	V_{CBO}	40	V
Collector-Emitter Voltage	V_{CEO}	25	V
Emitter-Base Voltage	V_{EBO}	6.0	V
Collector Current	I_C	1.0	A
Collector Current (Peak)	I_{CM}	1.5	A
Power Dissipation	P_D	250	mW
Operating and Storage			
Junction Temperature	T_J, T_{stg}	-65 to +150	$^\circ\text{C}$
Thermal Resistance	θ_{JA}	500	$^\circ\text{C/W}$

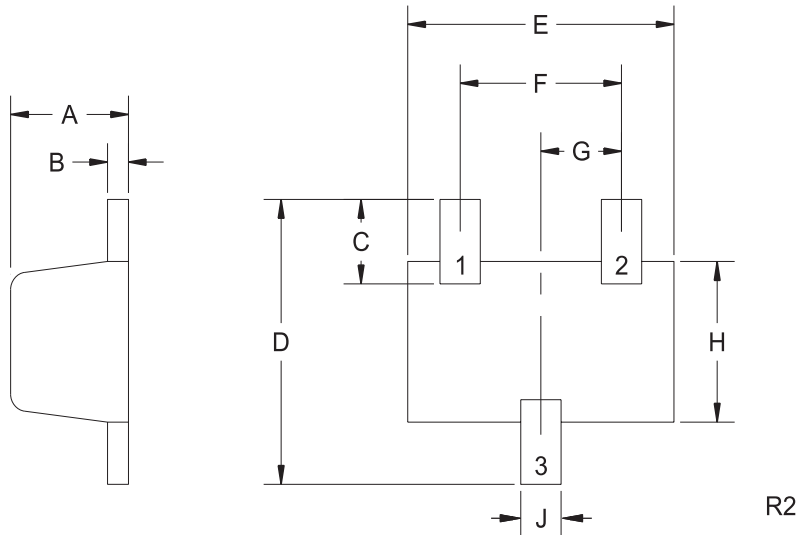
ELECTRICAL CHARACTERISTICS: ($T_A=25^\circ\text{C}$ unless otherwise noted)

SYMBOL	TEST CONDITIONS	TYP			UNITS	
		MIN	NPN	PNP		
I_{CBO}	$V_{CB}=40\text{V}$			100	nA	
I_{EBO}	$V_{EB}=6.0\text{V}$			100	nA	
BV_{CBO}	$I_C=100\mu\text{A}$	40			V	
BV_{CEO}	$I_C=10\text{mA}$	25			V	
BV_{EBO}	$I_E=100\mu\text{A}$	6.0			V	
$V_{CE(SAT)}$	$I_C=50\text{mA}, I_B=5.0\text{mA}$		20	25	50	mV
$V_{CE(SAT)}$	$I_C=100\text{mA}, I_B=10\text{mA}$		35	40	75	mV
$V_{CE(SAT)}$	$I_C=200\text{mA}, I_B=20\text{mA}$		75	80	150	mV
$V_{CE(SAT)}$	$I_C=500\text{mA}, I_B=50\text{mA}$		130	150	250	mV
$V_{CE(SAT)}$	$I_C=800\text{mA}, I_B=80\text{mA}$		200	220	400	mV
$V_{CE(SAT)}$	$I_C=1.0\text{A}, I_B=100\text{mA}$		250	275	450	mV
$V_{BE(SAT)}$	$I_C=800\text{mA}, I_B=80\text{mA}$				1.1	V
$V_{BE(ON)}$	$V_{CE}=1.0\text{V}, I_C=10\text{mA}$				0.9	V
h_{FE}	$V_{CE}=1.0\text{V}, I_C=10\text{mA}$	100				
h_{FE}	$V_{CE}=1.0\text{V}, I_C=100\text{mA}$	100			300	
h_{FE}	$V_{CE}=1.0\text{V}, I_C=500\text{mA}$	100				
h_{FE}	$V_{CE}=1.0\text{V}, I_C=1.0\text{A}$	50	125	75		
f_T	$V_{CE}=10\text{V}, I_C=50\text{mA}, f=100\text{MHz}$	100				MHz
C_{ob}	$V_{CB}=10\text{V}, I_E=0, f=1.0\text{MHz}$ (CMUT3410)				10	pF
C_{ob}	$V_{CB}=10\text{V}, I_E=0, f=1.0\text{MHz}$ (CMUT7410)				15	pF

R0 (28-March 2005)

SOT-523 CASE - MECHANICAL OUTLINE

BOTTOM VIEW



LEAD CODE:

- 1) BASE
- 2) EMITTER
- 3) COLLECTOR

MARKING CODES:

CMUT3410: C43
CMUT7410: C47

SYMBOL	DIMENSIONS			
	INCHES		MILLIMETERS	
	MIN	MAX	MIN	MAX
A	0.023	0.031	0.58	0.78
B	0.002	0.008	0.04	0.20
C	0.013	0.021	0.34	0.54
D	0.059	0.067	1.50	1.70
E	0.059	0.067	1.50	1.70
F	0.035	0.043	0.90	1.10
G	0.020		0.50	
H	0.031	0.039	0.78	0.98
J	0.010	0.014	0.25	0.35

SOT-523 (REV: R2)