

CMUT5179

SURFACE MOUNT
ULTRAmi™
NPN SILICON
RF TRANSISTOR

ULTRAmi™



SOT-523 CASE

Central™
Semiconductor Corp.

DESCRIPTION:

The CENTRAL SEMICONDUCTOR CMUT5179 type is an NPN silicon RF transistor manufactured by the epitaxial planar process, epoxy molded in an ULTRAmi™ surface mount package, designed for low noise, high frequency amplifier and high output oscillator applications.

MARKING CODE: HC7

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

	SYMBOL		UNITS
Collector-Base Voltage	V_{CBO}	20	V
Collector-Emitter Voltage	V_{CEO}	15	V
Emitter-Base Voltage	V_{EBO}	2.5	V
Collector Current	I_C	50	mA
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	$^\circ\text{C/W}$

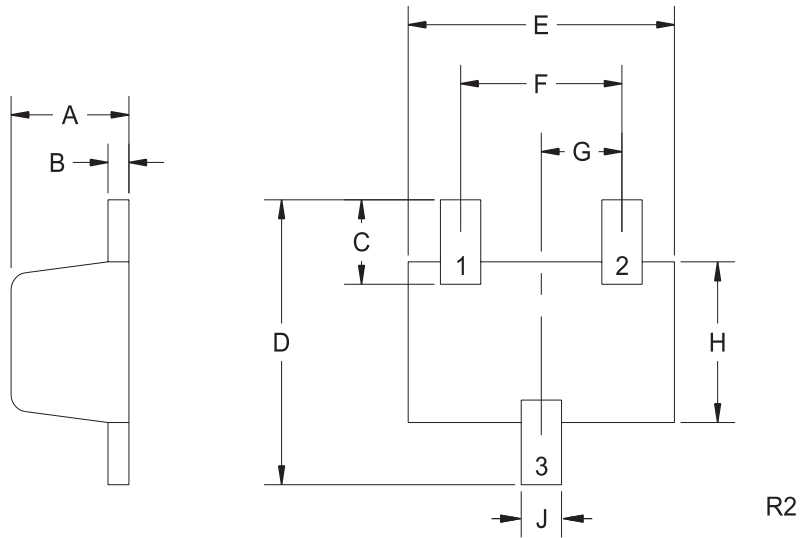
ELECTRICAL CHARACTERISTICS: ($T_A=25^\circ\text{C}$ unless otherwise noted)

SYMBOL	TEST CONDITIONS	MIN	TYP	MAX	UNITS
I_{CBO}	$V_{CB}=15\text{V}$			20	nA
BV_{CBO}	$I_C=10\mu\text{A}$	20			V
BV_{CEO}	$I_C=3.0\text{mA}$	15			V
BV_{EBO}	$I_E=10\mu\text{A}$	2.5			V
$V_{CE(SAT)}$	$I_C=10\text{mA}, I_B=1.0\text{mA}$			0.4	V
$V_{BE(SAT)}$	$I_C=10\text{mA}, I_B=1.0\text{mA}$			1.0	V
h_{FE}	$V_{CE}=1.0\text{V}, I_C=3.0\text{mA}$	25			
f_T	$V_{CE}=6.0\text{V}, I_C=5.0\text{mA}, f=100\text{MHz}$	900	1450		MHz
C_{cb}	$V_{CB}=10\text{V}, I_E=0, f=0.1$ to 1.0MHz			1.0	pF
h_{fe}	$V_{CE}=6.0\text{V}, I_C=2.0, f=1.0\text{kHz}$	25			
G_{pe}	$V_{CE}=6.0\text{V}, I_C=5.0\text{mA}, f=200\text{MHz}$		15		dB
NF	$V_{CE}=6.0\text{V}, I_C=1.5\text{mA}, R_S=50\Omega, f=200\text{MHz}$		4.5		dB

R1 (12-February 2003)

SOT-523 CASE - MECHANICAL OUTLINE

BOTTOM VIEW



LEAD CODE:

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

MARKING CODE: HC7

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)