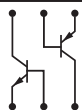


CMKT2207

**SURFACE MOUNT
COMPLEMENTARY SILICON
TRANSISTORS**

ULTRAmulti™



SOT-363 CASE

Central
Semiconductor Corp.

www.centrasemi.com

DESCRIPTION:

The CENTRAL SEMICONDUCTOR CMKT2207 consists of one 2222A NPN transistor and an individually isolated complementary 2907A PNP transistor, manufactured by the epitaxial planar process and epoxy molded in an SOT-363 surface mount package. This ULTRAmulti™ device has been designed for small signal general purpose and switching applications.

MARKING CODE: K70

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

Collector-Base Voltage
Collector-Emitter Voltage
Emitter-Base Voltage
Continuous Collector Current
Power Dissipation
Operating and Storage Junction Temperature
Thermal Resistance

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		$^{\circ}\text{C}$
θ_{JA}	357		$^{\circ}\text{C/W}$

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

SYMBOL	TEST CONDITIONS	NPN (Q1)		PNP (Q2)		UNITS
		MIN	MAX	MIN	MAX	
I_{CBO}	$V_{CB}=60\text{V}$	-	10	-	-	nA
I_{CBO}	$V_{CB}=50\text{V}$	-	-	-	10	nA
I_{CBO}	$V_{CB}=60\text{V}, T_A=125^{\circ}\text{C}$	-	10	-	-	nA
I_{CBO}	$V_{CB}=50\text{V}, T_A=125^{\circ}\text{C}$	-	-	-	10	nA
I_{EBO}	$V_{EB}=3.0\text{V}$	-	10	-	-	nA
I_{CEV}	$V_{CE}=60\text{V}, V_{EB(OFF)}=3.0\text{V}$	-	10	-	-	nA
I_{CEV}	$V_{CE}=30\text{V}, V_{EB(OFF)}=500\text{mV}$	-	-	-	50	nA
BV_{CBO}	$I_C=10\mu\text{A}$	75	-	60	-	V
BV_{CEO}	$I_C=10\text{mA}$	40	-	60	-	V
BV_{EBO}	$I_E=10\mu\text{A}$	6.0	-	5.0	-	V
$V_{CE(SAT)}$	$I_C=150\text{mA}, I_B=15\text{mA}$	-	0.3	-	0.4	V
$V_{CE(SAT)}$	$I_C=500\text{mA}, I_B=50\text{mA}$	-	1.0	-	1.6	V
$V_{BE(SAT)}$	$I_C=150\text{mA}, I_B=15\text{mA}$	0.6	1.2	-	1.3	V
$V_{BE(SAT)}$	$I_C=500\text{mA}, I_B=50\text{mA}$	-	2.0	-	2.6	V
h_{FE}	$V_{CE}=10\text{V}, I_C=0.1\text{mA}$	35	-	75	-	
h_{FE}	$V_{CE}=10\text{V}, I_C=1.0\text{mA}$	50	-	100	-	
h_{FE}	$V_{CE}=10\text{V}, I_C=10\text{mA}$	75	-	100	-	
h_{FE}	$V_{CE}=10\text{V}, I_C=150\text{mA}$	100	300	100	300	
h_{FE}	$V_{CE}=1.0\text{V}, I_C=150\text{mA}$	50	-	-	-	
h_{FE}	$V_{CE}=10\text{V}, I_C=500\text{mA}$	40	-	50	-	
f_T	$V_{CE}=20\text{V}, I_C=20\text{mA}, f=100\text{MHz}$	300	-	-	-	MHz
f_T	$V_{CE}=20\text{V}, I_C=50\text{mA}, f=100\text{MHz}$	-	-	200	-	MHz
C_{ob}	$V_{CB}=10\text{V}, I_E=0, f=1.0\text{MHz}$	-	8.0	-	8.0	pF
C_{ib}	$V_{EB}=0.5\text{V}, I_C=0, f=1.0\text{MHz}$	-	25	-	-	pF

R4 (13-January 2010)

CMKT2207

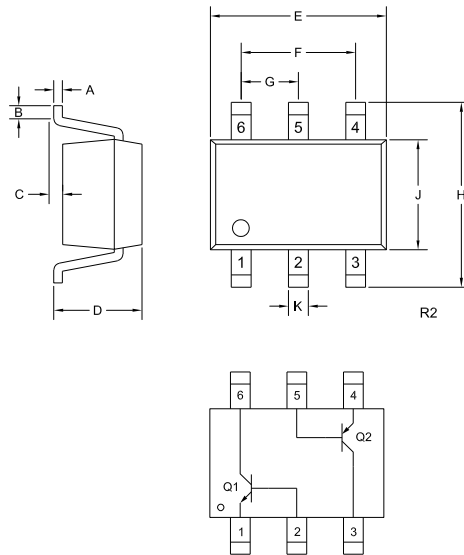
**SURFACE MOUNT
COMPLEMENTARY SILICON
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ELECTRICAL CHARACTERISTICS PER TRANSISTOR - Continued: ($T_A=25^\circ\text{C}$)

SYMBOL	TEST CONDITIONS	NPN (Q1)		PNP (Q2)		UNITS
		MIN	MAX	MIN	MAX	
C_{ib}	$V_{EB}=2.0\text{V}$, $I_C=0$, $f=1.0\text{MHz}$	-	-	-	30	pF
h_{ie}	$V_{CE}=10\text{V}$, $I_C=1.0\text{mA}$, $f=1.0\text{kHz}$	2.0	8.0	-	-	k Ω
h_{ie}	$V_{CE}=10\text{V}$, $I_C=10\text{mA}$, $f=1.0\text{kHz}$	0.25	1.25	-	-	k Ω
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
$rb'C_C$	$V_{CB}=10\text{V}$, $I_E=20\text{mA}$, $f=31.8\text{MHz}$	-	150	-	-	ps
NF	$V_{CE}=10\text{V}$, $I_C=100\mu\text{A}$, $R_S=1.0\text{k}\Omega$, $f=1.0\text{kHz}$	-	4.0	-	-	dB
t_{on}	$V_{CC}=30\text{V}$, $V_{BE}=0.5\text{V}$, $I_C=150\text{mA}$, $I_{B1}=15\text{mA}$	-	-	-	45	ns
t_d	$V_{CC}=30\text{V}$, $V_{BE}=0.5\text{V}$, $I_C=150\text{mA}$, $I_{B1}=15\text{mA}$	-	10	-	10	ns
t_r	$V_{CC}=30\text{V}$, $V_{BE}=0.5\text{V}$, $I_C=150\text{mA}$, $I_{B1}=15\text{mA}$	-	25	-	40	ns
t_{off}	$V_{CC}=6.0\text{V}$, $I_C=150\text{mA}$, $I_{B1}=I_{B2}=15\text{mA}$	-	-	-	100	ns
t_s	$V_{CC}=30\text{V}$, $I_C=150\text{mA}$, $I_{B1}=I_{B2}=15\text{mA}$	-	225	-	-	ns
t_s	$V_{CC}=6.0\text{V}$, $I_C=150\text{mA}$, $I_{B1}=I_{B2}=15\text{mA}$	-	-	-	80	ns
t_f	$V_{CC}=30\text{V}$, $I_C=150\text{mA}$, $I_{B1}=I_{B2}=15\text{mA}$	-	60	-	-	ns
t_f	$V_{CC}=6.0\text{V}$, $I_C=150\text{mA}$, $I_{B1}=I_{B2}=15\text{mA}$	-	-	-	30	ns

SOT-363 CASE - MECHANICAL OUTLINE



SYMBOL	DIMENSIONS			
	INCHES		MILLIMETERS	
	MIN	MAX	MIN	MAX
A	0.004	0.010	0.10	0.25
B	0.005	-	0.12	-
C	0.000	0.004	0.00	0.10
D	0.031	0.043	0.80	1.10
E	0.071	0.087	1.80	2.20
F	0.051		1.30	
G	0.026		0.65	
H	0.075	0.091	1.90	2.30
J	0.043	0.055	1.10	1.40
K	0.006	0.012	0.15	0.30

SOT-363 (REV: R2)

LEAD CODE:

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

MARKING CODE: K70

R4 (13-January 2010)

OUTSTANDING SUPPORT AND SUPERIOR SERVICES



PRODUCT SUPPORT

Central's operations team provides the highest level of support to insure product is delivered on-time.

- Supply management (Customer portals)
- Inventory bonding
- Consolidated shipping options
- Custom bar coding for shipments
- Custom product packing

DESIGNER SUPPORT/SERVICES

Central's applications engineering team is ready to discuss your design challenges. Just ask.

- Free quick ship samples (2nd day air)
- Online technical data and parametric search
- SPICE models
- Custom electrical curves
- Environmental regulation compliance
- Customer specific screening
- Up-screening capabilities
- Special wafer diffusions
- PbSn plating options
- Package details
- Application notes
- Application and design sample kits
- Custom product and package development

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