

CMKT2222A

**SURFACE MOUNT
DUAL NPN SMALL SIGNAL
SILICON SWITCHING
TRANSISTORS**

ULTRAmTMini



SOT-363 CASE



www.centrasemi.com

DESCRIPTION:

The CENTRAL SEMICONDUCTOR CMKT2222A consists of two individually isolated 2222A NPN silicon transistors, manufactured by the epitaxial planar process and epoxy molded in an SOT-363 surface mount package. This ULTRAmTMini device has been designed for small signal general purpose and switching applications.

MARKING CODE: K22

MAXIMUM RATINGS: (T_A=25°C)

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

SYMBOL

V_{CBO} 75
V_{CEO} 40
V_{EBO} 6.0
I_C 600
P_D 350
T_J, T_{stg} -65 to +150
θ_{JA} 357

UNITS

V
V
V
mA
mW
°C
°C/W

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

SYMBOL	TEST CONDITIONS	MIN	MAX	UNITS
I _{CBO}	V _{CB} =60V		10	nA
I _{CBO}	V _{CB} =60V, T _A =125°C		10	µA
I _{CEV}	V _{CE} =60V, V _{EB} =3.0V		10	nA
I _{EBO}	V _{EB} =3.0V		10	nA
BV _{CBO}	I _C =10µA	75		V
BV _{CEO}	I _C =10mA	40		V
BV _{EBO}	I _E =10µA	6.0		V
V _{CE(SAT)}	I _C =150mA, I _B =15mA		0.3	V
V _{CE(SAT)}	I _C =500mA, I _B =50mA		1.0	V
V _{BE(SAT)}	I _C =150mA, I _B =15mA	0.6	1.2	V
V _{BE(SAT)}	I _C =500mA, I _B =50mA		2.0	V
h _{FE}	V _{CE} =10V, I _C =0.1mA	35		
h _{FE}	V _{CE} =10V, I _C =1.0mA	50		
h _{FE}	V _{CE} =10V, I _C =10mA	75		
h _{FE}	V _{CE} =1.0V, I _C =150mA	50		
h _{FE}	V _{CE} =10V, I _C =150mA	100	300	
h _{FE}	V _{CE} =10V, I _C =500mA	40		
f _T	V _{CE} =20V, I _C =20mA, f=100MHz	300		MHz
C _{ob}	V _{CB} =10V, I _E =0, f=1.0MHz		8.0	pF
C _{ib}	V _{EB} =0.5V, I _C =0, f=1.0MHz		25	pF

R4 (13-January 2010)

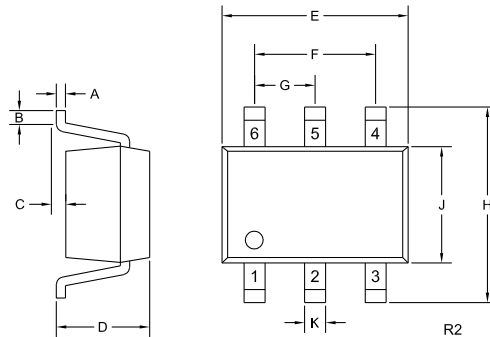
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ELECTRICAL CHARACTERISTICS PER TRANSISTOR - Continued: ($T_A=25^\circ\text{C}$)

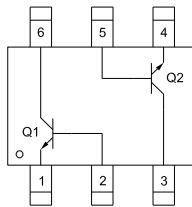
SYMBOL	TEST CONDITIONS	MIN	MAX	UNITS
h_{ie}	$V_{CE}=10\text{V}, I_C=1.0\text{mA}, f=1.0\text{kHz}$	2.0	8.0	$k\Omega$
h_{ie}	$V_{CE}=10\text{V}, I_C=10\text{mA}, f=1.0\text{kHz}$	0.25	1.25	$k\Omega$
h_{re}	$V_{CE}=10\text{V}, I_C=1.0\text{mA}, f=1.0\text{kHz}$		8.0	$\times 10^{-4}$
h_{re}	$V_{CE}=10\text{V}, I_C=10\text{mA}, f=1.0\text{kHz}$		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
r_b/C_C	$V_{CB}=10\text{V}, I_E=20\text{mA}, f=31.8\text{MHz}$		150	ps
NF	$V_{CE}=10\text{V}, I_C=100\mu\text{A}, R_S=1.0k\Omega, f=1.0\text{kHz}$		4.0	dB
t_d	$V_{CC}=30\text{V}, V_{BE}=0.5\text{V}, I_C=150\text{mA}, I_{B1}=15\text{mA}$		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	ns
t_s	$V_{CC}=30\text{V}, I_C=150\text{mA}, I_{B1}=I_{B2}=15\text{mA}$		225	ns
t_f	$V_{CC}=30\text{V}, I_C=150\text{mA}, I_{B1}=I_{B2}=15\text{mA}$		60	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: K22

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