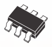
CMKT2222A

ULTRAmini™
SURFACE MOUNT
DUAL NPN SMALL SIGNAL
SWITCHING TRANSISTORS

ULTRAmini™



SOT-363 CASE

Central™
Semiconductor Corp.

DESCRIPTION:

The CENTRAL SEMICONDUCTOR CMKT2222A type is a dual NPN small signal switching transistor manufactured by the epitaxial planar process, epoxy molded in a surface mount package, designed for small signal general purpose and switching applications. Marking Code is K22.

MAXIMUM RATINGS: (T_A=25°C)

	SYMBOL		UNITS
Collector-Base Voltage	V_{CBO}	75	V
Collector-Emitter Voltage	V_{CEO}	40	V
Emitter-Base Voltage	V_{EBO}	6.0	V
Collector Current	I_C	600	mA
Power Dissipation	P_D	350	mW
Operating and Storage Junction Temperature	T_J, T_{stg}	-65 to +150	°C
Thermal Resistance	Θ_{JA}	357	°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}	VCE=10V, IC=500mA	40		

R0 (28-September 2001)

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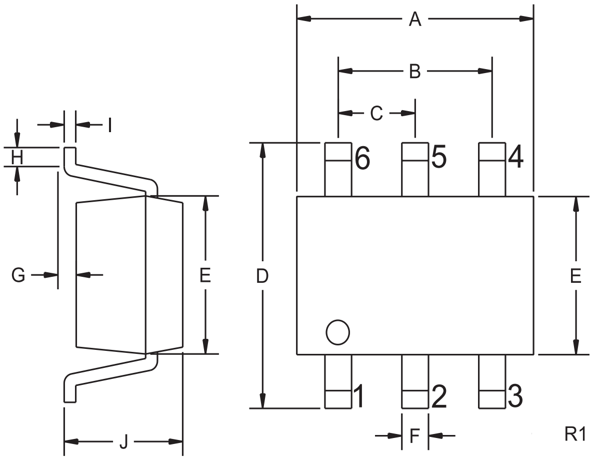
ELECTRICAL CHARACTERISTICS PER TRANSISTOR CONTINUED: (T_A=25°C unless otherwise noted)

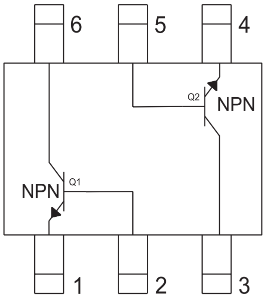
SYMBOL	TEST CONDITIONS	MIN	MAX	UNITS
f_T	V_{CE}=20V, I_C=20mA, f=100MHz	300		MHz
C_{ob}	V_{CB}=10V, I_E=0, f=1.0MHz		8.0	pF
C_{ib}	V_{EB}=0.5V, I_C=0, f=1.0MHz		25	pF
h_{ie}	V_{CE}=10V, I_C=1.0mA, f=1.0kHz	2.0	8.0	kΩ
h_{ie}	V_{CE}=10V, I_C=10mA, f=1.0kHz	0.25	1.25	kΩ
h_{re}	V_{CE}=10V, I_C=1.0mA, f=1.0kHz		8.0	$x10^{-4}$
h_{re}	V_{CE}=10V, I_C=10mA, f=1.0kHz		4.0	$x10^{-4}$
h_{fe}	V_{CE}=10V, I_C=1.0mA, f=1.0kHz	50	300	
h_{fe}	V_{CE}=10V, I_C=10mA, f=1.0kHz	75	375	
h_{oe}	V_{CE}=10V, I_C=1.0mA, f=1.0kHz	5.0	35	µmhos
h_{oe}	V_{CE}=10V, I_C=10mA, f=1.0kHz	25	200	µmhos
$rb'C_c$	V_{CB}=10V, I_E=20mA, f=31.8MHz		150	ps
NF	V_{CE}=10V, I_C=100mA, R_S=1.0kΩ, f=1.0kHz		4.0	dB
t_d	V_{CC}=30V, V_{BE}=0.5, I_C=150mA, I_{B1}=15mA		10	ns
t_r	V_{CC}=30V, V_{BE}=0.5, I_C=150mA, I_{B1}=15mA		25	ns
t_s	V_{CC}=30V, I_C=150mA, I_{B1}=I_{B2}=15mA		225	ns
t_f	V_{CC}=30V, I_C=150mA, I_{B1}=I_{B2}=15mA		60	ns

SOT-363 CASE - MECHANICAL OUTLINE

DIMENSIONS				
	INCHES		MILLIMETERS	
SYMBOL	MIN	MAX	MIN	MAX
A	0.073	0.085	1.85	2.15
B	0.051		1.30	
C	0.026		0.65	
D	0.075	0.091	1.90	2.30
E	0.043	0.055	1.10	1.40
F	0.006	0.012	0.15	0.30
G	0.000	0.004	0.00	0.10
H	0.010	-	0.25	-
I	0.004	0.010	0.10	0.25
J	0.031	0.039	0.80	1.00

SOT-363 (REV: R1)





Marking Code: **K22**

Lead Code:

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

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