

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

	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	$^\circ\text{C}$
Thermal Resistance	Θ_{JA}	357	$^\circ\text{C/W}$

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

SYMBOL	TEST CONDITIONS	MIN	MAX	UNITS
I_{CBO}	$V_{CB}=60\text{V}$		10	nA
I_{CBO}	$V_{CB}=60\text{V}, T_A=125^\circ\text{C}$		10	μA
I_{CEV}	$V_{CE}=60\text{V}, V_{EB}=3.0\text{V}$		10	nA
I_{EBO}	$V_{EB}=3.0\text{V}$		10	nA
BV_{CBO}	$I_C=10\mu\text{A}$	75		V
BV_{CEO}	$I_C=10\text{mA}$	40		V
BV_{EBO}	$I_E=10\mu\text{A}$	6.0		V
$V_{CE(SAT)}$	$I_C=150\text{mA}, I_B=15\text{mA}$		0.3	V
$V_{CE(SAT)}$	$I_C=500\text{mA}, I_B=50\text{mA}$		1.0	V
$V_{BE(SAT)}$	$I_C=150\text{mA}, I_B=15\text{mA}$	0.6	1.2	V
$V_{BE(SAT)}$	$I_C=500\text{mA}, I_B=50\text{mA}$		2.0	V
h_{FE}	$V_{CE}=10\text{V}, I_C=0.1\text{mA}$	35		
h_{FE}	$V_{CE}=10\text{V}, I_C=1.0\text{mA}$	50		
h_{FE}	$V_{CE}=10\text{V}, I_C=10\text{mA}$	75		
h_{FE}	$V_{CE}=1.0\text{V}, I_C=150\text{mA}$	50		
h_{FE}	$V_{CE}=10\text{V}, I_C=150\text{mA}$	100	300	
h_{FE}	$V_{CE}=10\text{V}, I_C=500\text{mA}$	40		

R0 (28-September 2001)

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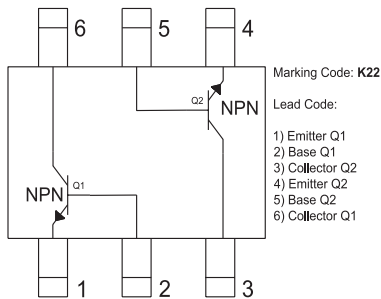
ELECTRICAL CHARACTERISTICS PER TRANSISTOR CONTINUED: ($T_A=25^{\circ}\text{C}$ unless otherwise noted)

SYMBOL	TEST CONDITIONS	MIN	MAX	UNITS
f_T	$V_{CE}=20\text{V}, I_C=20\text{mA}, f=100\text{MHz}$	300		MHz
C_{ob}	$V_{CB}=10\text{V}, I_E=0, f=1.0\text{MHz}$		8.0	pF
C_{ib}	$V_{EB}=0.5\text{V}, I_C=0, f=1.0\text{MHz}$		25	pF
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	μhos
h_{oe}	$V_{CE}=10\text{V}, I_C=10\text{mA}, f=1.0\text{kHz}$	25	200	μhos
$rb'C_c$	$V_{CB}=10\text{V}, I_E=20\text{mA}, f=31.8\text{MHz}$		150	ps
NF	$V_{CE}=10\text{V}, I_C=100\text{mA}, R_S=1.0k\Omega, f=1.0\text{kHz}$		4.0	dB
t_d	$V_{CC}=30\text{V}, V_{BE}=0.5, I_C=150\text{mA}, I_{B1}=15\text{mA}$		10	ns
t_r	$V_{CC}=30\text{V}, V_{BE}=0.5, I_C=150\text{mA}, I_{B1}=15\text{mA}$		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

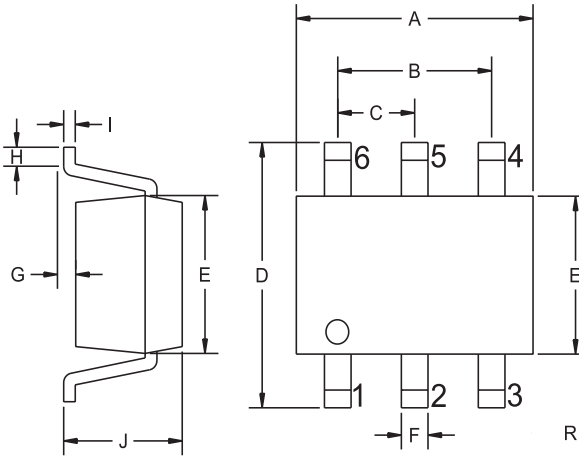
SOT-363 CASE - MECHANICAL OUTLINE

SYMBOL	DIMENSIONS		DIMENSIONS	
	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



R0 (28-September 2001)