

CMKT3904 NPN/NPN
CMKT3906 PNP/PNP

SURFACE MOUNT SILICON
DUAL SMALL SIGNAL
SWITCHING TRANSISTORS



SOT-363 CASE



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DESCRIPTION:

The CENTRAL SEMICONDUCTOR CMKT3904 (two single NPN) and CMKT3906 (two single PNP) are silicon transistors in a space saving SOT-363 package, designed for small signal general purpose amplifier and switching applications.

**MARKING CODES: CMKT3904: K04
CMKT3906: K06**

FEATURES:

- Two NPN (3904) or Two PNP (3906) Transistors in a single package

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	NPN	PNP	UNITS
V _{CBO}	60	40	V
V _{CEO}	40	40	V
V _{EBO}	6.0	5.0	V
I _C	200		mA
P _D	350		mW
T _J , T _{stg}	-65 to +150		°C
θ _{JA}	357		°C/W

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

SYMBOL	TEST CONDITIONS	NPN		PNP		UNITS
		MIN	MAX	MIN	MAX	
I _{CEV}	V _{CE} =30V, V _{EB} =3.0V	-	50	-	50	nA
I _{BL}	V _{CE} =30V, V _{EB} =3.0V	-	50	-	-	nA
BV _{CBO}	I _C =10μA	60	-	40	-	V
BV _{CEO}	I _C =1.0mA	40	-	40	-	V
BV _{EBO}	I _E =10μA	6.0	-	5.0	-	V
V _{CE(SAT)}	I _C =10mA, I _B =1.0mA	-	0.20	-	0.25	V
V _{CE(SAT)}	I _C =50mA, I _B =5.0mA	-	0.30	-	0.40	V
V _{BE(SAT)}	I _C =10mA, I _B =1.0mA	0.65	0.85	0.65	0.85	V
V _{BE(SAT)}	I _C =50mA, I _B =5.0mA	-	0.95	-	0.95	V
h _{FE}	V _{CE} =1.0V, I _C =0.1mA	40	-	60	-	
h _{FE}	V _{CE} =1.0V, I _C =1.0mA	70	-	80	-	
h _{FE}	V _{CE} =1.0V, I _C =10mA	100	300	100	300	
h _{FE}	V _{CE} =1.0V, I _C =50mA	60	-	60	-	
h _{FE}	V _{CE} =1.0V, I _C =100mA	30	-	30	-	
f _T	V _{CE} =20V, I _C =10mA, f=100MHz	300	-	250	-	MHz
C _{ob}	V _{CB} =5.0V, I _E =0, f=1.0MHz	-	4.0	-	4.5	pF
C _{ib}	V _{BE} =0.5V, I _C =0, f=1.0MHz	-	12	-	12	pF

CMKT3904 NPN/NPN
CMKT3906 PNP/PNP

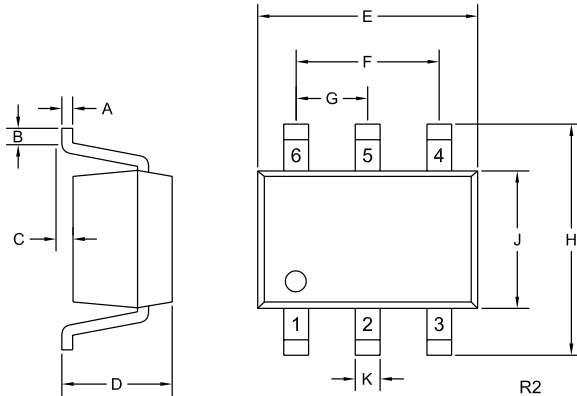
SURFACE MOUNT SILICON
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ELECTRICAL CHARACTERISTICS PER TRANSISTOR - Continued: ($T_A=25^\circ\text{C}$)

SYMBOL	TEST CONDITIONS	NPN		PNP		UNITS
		MIN	MAX	MIN	MAX	
h_{ie}	$V_{CE}=10\text{V}$, $I_C=1.0\text{mA}$, $f=1.0\text{kHz}$	1.0	10	2.0	12	$k\Omega$
h_{re}	$V_{CE}=10\text{V}$, $I_C=1.0\text{mA}$, $f=1.0\text{kHz}$	0.5	8.0	0.1	10	$\times 10^{-4}$
h_{fe}	$V_{CE}=10\text{V}$, $I_C=1.0\text{mA}$, $f=1.0\text{kHz}$	100	400	100	400	
h_{oe}	$V_{CE}=10\text{V}$, $I_C=1.0\text{mA}$, $f=1.0\text{kHz}$	1.0	40	3.0	60	μS
NF	$V_{CE}=5.0\text{V}$, $I_C=100\mu\text{A}$, $R_S=1.0k\Omega$, $f=10\text{Hz}$ to 15.7kHz	-	5.0	-	4.0	dB
t_d	$V_{CC}=3.0\text{V}$, $V_{BE}=0.5\text{V}$, $I_C=10\text{mA}$, $I_{B1}=1.0\text{mA}$	-	35	-	35	ns
t_r	$V_{CC}=3.0\text{V}$, $V_{BE}=0.5\text{V}$, $I_C=10\text{mA}$, $I_{B1}=1.0\text{mA}$	-	35	-	35	ns
t_s	$V_{CC}=3.0\text{V}$, $I_C=10\text{mA}$, $I_{B1}=I_{B2}=1.0\text{mA}$	-	170	-	170	ns
t_f	$V_{CC}=3.0\text{V}$, $I_C=10\text{mA}$, $I_{B1}=I_{B2}=1.0\text{mA}$	-	80	-	80	ns

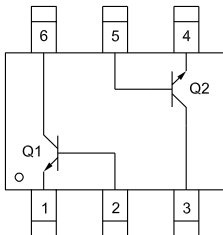
SOT-363 CASE - MECHANICAL OUTLINE



SYMBOL	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

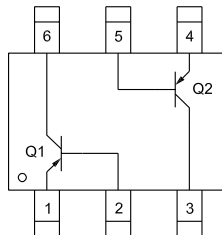
SOT-363 (REV: R2)

PIN CONFIGURATIONS



CMKT3904
(NPN/NPN)

MARKING CODE: K04



CMKT3906
(PNP/PNP)

MARKING CODE: K06

LEAD CODES:

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

R9 (15-September 2022)

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

REQUESTING PRODUCT PLATING

1. If requesting Tin/Lead plated devices, add the suffix "TIN/LEAD" to the part number when ordering (example: 2N2222A TIN/LEAD).
2. If requesting Lead (Pb) Free plated devices, add the suffix "PBFREE" to the part number when ordering (example: 2N2222A PBFREE).

CONTACT US

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