

CMKT2207

**SURFACE MOUNT
COMPLEMENTARY SILICON
TRANSISTORS**

ULTRAmulti™



SOT-363 CASE



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°C)

Collector-Base Voltage	V _{CBO}	75	60	V
Collector-Emitter Voltage	V _{CEO}	40	60	V
Emitter-Base Voltage	V _{EBO}	6.0	5.0	V
Continuous 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

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		°C
θ _{JA}	357		°C/W

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

SYMBOL	TEST CONDITIONS	NPN (Q1)		PNP (Q2)		UNITS
		MIN	MAX	MIN	MAX	
I _{CBO}	V _{CB} =60V	-	10	-	-	nA
I _{CBO}	V _{CB} =50V	-	-	-	10	nA
I _{CBO}	V _{CB} =60V, T _A =125°C	-	10	-	-	μA
I _{CBO}	V _{CB} =50V, T _A =125°C	-	-	-	10	μA
I _{EBO}	V _{EB} =3.0V	-	10	-	-	nA
I _{CEV}	V _{CE} =60V, V _{EB(OFF)} =3.0V	-	10	-	-	nA
I _{CEV}	V _{CE} =30V, V _{EB(OFF)} =500mV	-	-	-	50	nA
BV _{CBO}	I _C =10μA	75	-	60	-	V
BV _{CEO}	I _C =10mA	40	-	60	-	V
BV _{EBO}	I _E =10μA	6.0	-	5.0	-	V
V _{CE(SAT)}	I _C =150mA, I _B =15mA	-	0.3	-	0.4	V
V _{CE(SAT)}	I _C =500mA, I _B =50mA	-	1.0	-	1.6	V
V _{BE(SAT)}	I _C =150mA, I _B =15mA	0.6	1.2	-	1.3	V
V _{BE(SAT)}	I _C =500mA, I _B =50mA	-	2.0	-	2.6	V
h _{FE}	V _{CE} =10V, I _C =0.1mA	35	-	75	-	
h _{FE}	V _{CE} =10V, I _C =1.0mA	50	-	100	-	
h _{FE}	V _{CE} =10V, I _C =10mA	75	-	100	-	
h _{FE}	V _{CE} =10V, I _C =150mA	100	300	100	300	
h _{FE}	V _{CE} =1.0V, I _C =150mA	50	-	-	-	
h _{FE}	V _{CE} =10V, I _C =500mA	40	-	50	-	
f _T	V _{CE} =20V, I _C =20mA, f=100MHz	300	-	-	-	MHz
f _T	V _{CE} =20V, I _C =50mA, f=100MHz	-	-	200	-	MHz
C _{ob}	V _{CB} =10V, I _E =0, f=1.0MHz	-	8.0	-	8.0	pF
C _{ib}	V _{EB} =0.5V, I _C =0, f=1.0MHz	-	25	-	-	pF

R5 (26-January 2018)

CMKT2207

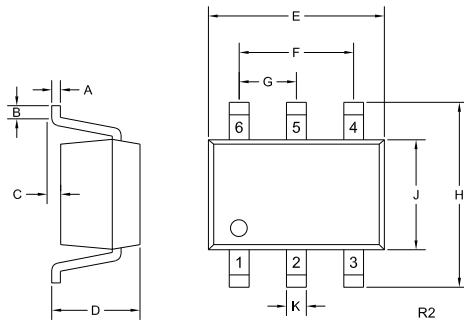
**SURFACE MOUNT
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ELECTRICAL CHARACTERISTICS PER TRANSISTOR - Continued: (T_A=25°C)

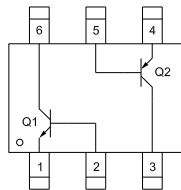
SYMBOL	TEST CONDITIONS	NPN (Q1)		PNP (Q2)		UNITS
		MIN	MAX	MIN	MAX	
C _{ib}	V _{EB} =2.0V, I _C =0, f=1.0MHz	-	-	-	30	pF
h _{ie}	V _{CE} =10V, I _C =1.0mA, f=1.0kHz	2.0	8.0	-	-	kΩ
h _{ie}	V _{CE} =10V, I _C =10mA, f=1.0kHz	0.25	1.25	-	-	kΩ
h _{re}	V _{CE} =10V, I _C =1.0mA, f=1.0kHz	-	8.0	-	-	x10 ⁻⁴
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	-	-	μS
h _{oe}	V _{CE} =10V, I _C =10mA, f=1.0kHz	25	200	-	-	μS
rb'C _c	V _{CB} =10V, I _E =20mA, f=31.8MHz	-	150	-	-	ps
NF	V _{CE} =10V, I _C =100μA, R _S =1.0kΩ, f=1.0kHz	-	4.0	-	-	dB
t _{on}	V _{CC} =30V, V _{BE} =0.5V, I _C =150mA, I _{B1} =15mA	-	-	-	45	ns
t _d	V _{CC} =30V, V _{BE} =0.5V, I _C =150mA, I _{B1} =15mA	-	10	-	10	ns
t _r	V _{CC} =30V, V _{BE} =0.5V, I _C =150mA, I _{B1} =15mA	-	25	-	40	ns
t _{off}	V _{CC} =6.0V, I _C =150mA, I _{B1} =I _{B2} =15mA	-	-	-	100	ns
t _s	V _{CC} =30V, I _C =150mA, I _{B1} =I _{B2} =15mA	-	225	-	-	ns
t _s	V _{CC} =6.0V, I _C =150mA, I _{B1} =I _{B2} =15mA	-	-	-	80	ns
t _f	V _{CC} =30V, I _C =150mA, I _{B1} =I _{B2} =15mA	-	60	-	-	ns
t _f	V _{CC} =6.0V, I _C =150mA, I _{B1} =I _{B2} =15mA	-	-	-	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

R5 (26-January 2018)

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).

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